# Civil Engineering and Development Department

# Trunk Road T2 Monthly Environmental Monitoring and Audit Report (under EP-451/2013)

October 2022 (Version 1.0)

Approved By

(Environmental Team Leader:

Mr. KS Lee)

#### 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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Ref.: CEDKTDT2EM00 0 0398L.22

14 November 2022

Hyder-Meinhardt Joint Venture 17/F, Two Harbour Square 180 Wai Yip Street, Kwun Tong Kowloon, Hong Kong

By Post and Email

Attention: Mr. Edwin Ching

Dear Mr. Ching,

Re: Agreement No. EDO 01/2019 **Independent Environmental Checker for** Contract No. ED/2018/04 - Trunk Road T2 and Infrastructure Works for **Developments at the Former South Apron** 

#### Monthly EM&A Report (October 2022) for EP-451/2013

Reference is made to the Environmental Team's submission of the Monthly EM&A Report for October 2022 (Version 1.0) certified by the ET Leader and provided to us via e-mail on 14 November 2022. We are pleased to inform you that we have no adverse comment on the captioned submission. We write to verify the captioned submission in accordance with Condition 3.4 of EP-451/2013.

The ET Leader is reminded that it is the ET's responsibility to ensure the report be timely submitted to the Director of Environmental Protection as per Condition 3.4 of EP-451/2013.

Thank you for your attention. Please do not hesitate to contact the undersigned should you have any queries.

Yours sincerely, For and on behalf of Ramboll Hong Kong Limited

Y H Hui Independent Environmental Checker

c.c.

CEDD

Attn.: Mr. Tommy Wong

Fax: 2739 0076

BTP

Attn.: Mr. Ivan Chau

By email

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Attn.: Mr. K. S. Lee

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#### **EXECUTIVE SUMMARY**

#### Introduction

1. This is the 32<sup>th</sup> Environmental Monitoring and Audit (EM&A) Report prepared by the Environmental Team (ET), Cinotech Consultants Ltd., for "Trunk Road T2". This report summarized the monitoring results and audits findings of the EM&A programme under the issued Environmental Permit (EP) No. EP-451/2013 and in accordance with the EM&A Manual (AEIAR-174/2013) during the reporting month of October 2022.

#### Summary of Main Works Undertaken and Key Measures Implemented

2. The main works of each works contracts undertaken during the reporting period are as follows:

**Table I** Summary of Key Construction Work in the Reporting Month

Contract No.	Project Title	Site Activities
ED/2018/04	Trunk Road T2 and Infrastructure Works for Developments at South Apron	<ul> <li>Depressed Road – Portal Structure, Capping Beam</li> <li>Depressed Road – DPR/SUS connection</li> <li>West Ventilation Building – Basement 2 Construction</li> <li>Launching Shaft / Cut &amp; Cover RC Structure</li> <li>Westbound TBM Tunnelling</li> <li>Eastbound TBM Tunnelling</li> <li>EB Service Gallery Installation</li> <li>WB Service Gallery Installation</li> <li>CP Tympanum construction</li> <li>SUS Remaining Internal Wall</li> <li>SUS OHVB In-situ Slab</li> <li>Tunnel Segment delivery</li> </ul>
ED/2020/03	Trunk Road T2 - Traffic Control And Surveillance System (TCSS) and Associated Works <sup>(1)</sup>	N/A

Notes:

 $(1): No\ major\ construction\ work\ was\ undertaken\ during\ reporting\ month.$ 

N/A: Not applicable

3. Implementation of the key mitigation measures during the reporting period are as follows:

Table II Summary of Key Mitigation Measures Implemented in the Reporting Month

Key Mitigation Measures Implemented  Air Quality
Air Quality
<ul> <li>Water spraying regularly on construction site area to avoid dust generation.</li> <li>Excavated dusty materials were covered by impervious sheets.</li> </ul> Noise
<ul> <li>Air compressor was operated with door closed and have valid noise labels.</li> <li>Use of Quality Powered Mechanical Equipment (QPME)</li> <li>Erecting noise barriers on site to minimize noise impact generated from breaking activities.</li> </ul>
<ul> <li>Water Quality</li> <li>WetSep was constructed to treat the surface runoff prior to discharge.</li> </ul>
Landscape and Visual
• Tree protection zone were fenced off to protect the existing tree.
N/A

Notes:

(1): No major construction work was undertaken during reporting month.

N/A: Not applicable

#### Summary of Exceedances, Investigation and Follow-up

4. Exceedance of Action/Limit levels during the reporting month (October 2022) and the investigation results and/or follow-up actions:

#### Air Quality Monitoring

- Four (4) Action Level exceedance for 24-hour TSP was recorded.
- Two (2) Limit Level exceedance for 24-hour TSP was recorded.

#### Construction Noise Monitoring

- No Limit Level exceedance for day time construction noise was recorded in this reporting month.
- No Action Level exceedance was recorded in this reporting month.

Landscape and Visual Monitoring and Audit

• No non-compliance of the landscape and visual impact was recorded in the reporting month. The implementation of landscape and visual and mitigation measures was checked by a Registered Landscape Architect (RLA) during the environmental site inspections.

#### Complaint Handling, Prosecution and Public Engagement

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

E-var-4	Event Details		Follow-up/	Status/
Event	Number	<b>Brief Description</b>	Remedial Actions	Remarks
Complaints Received	0	-	-	-
Notification of Summons and Prosecutions Received	0	-	-	-
Public Engagement Activities	0	-	-	1

#### **Reporting Changes**

5. No reporting change in this reporting month.

# **Future Key Issues**

6. The key works or activities will be anticipated in the next reporting period are as follows:

Table IV Summary Table for Site Activities in the next Reporting Period

Contract No. and Project Title	Site Activities (November 2022)	Key Environmental Issues
ED/2018/04 - Trunk Road T2 and Infrastructure Works for Developments at South Apron	<ol> <li>Depressed Road – Portal Structure, Capping Beam</li> <li>Depressed Road – DPR/SUS connection</li> <li>West Ventilation Building – Basement 2 Construction</li> <li>Launching Shaft / Cut &amp; Cover RC Structure</li> <li>Westbound TBM Tunnelling</li> <li>Eastbound TBM Tunnelling</li> <li>EB Service Gallery installation</li> <li>WB Service Gallery installation</li> <li>CP Tympanum construction</li> <li>SUS Remaining Internal Wall</li> <li>SUS OHVD in-situ Slab</li> <li>Tunnel Segment delivery</li> </ol>	(A) / (B) / (C) / (D)

ED/2020/03 - Trunk	
Road T2 - Traffic	
Control And	N/A
Surveillance System	IN/A
(TCSS) and	
Associated Works <sup>(1)</sup>	

Notes:

- (1): No major construction work was undertaken during reporting month.
- N/A: Not applicable
- (A) Dust generation from haul road, stockpile of dusty materials, exposed site area, excavation works and rock breaking activities;
- (B) Noisy construction activity such as rock-breaking activities and piling works
- (C) Runoff from exposed slope or site area; and
- (D) Wastewater and runoff discharge from site.

#### **Review of Status and Location of Monitoring Stations**

7. According to the EM&A Manual (AEIAR-174/2013), the number and location of the monitoring stations and parameters should be reviewed in every six months, or on as -needed basis, in order to cater for any changes in the surrounding environmental and the nature of works in progress. The latest review was conducted in August 2022 and the review of status and location of monitoring stations are summarized as follow:

Table V Summary Table for Review of Status and Location of Monitoring Stations

Monitoring Station ID	Review Status	Follow-up Action/ Recommendation
KTD 2d	ET has reviewed the status and location	
KER1	of KER1, KTD 1, KTD2d, CKL1 and CKL2. To conclude, the environmental	
KTD 1	monitoring conducted at KER1, KTD 1, KTD2d, CKL 1 and CKL 2 are appropriate, and the monitoring results	N/A
CKL 1	reflect how the sensitive receiver(s) is/are impacted by the construction	
CKL 2	activities of the Project.	

N/A: Not Applicable

#### 1 INTRODUCTION

#### **Background**

- 1.1 In 2009, Civil Engineering and Development Department (CEDD) commissioned a Kai Tak Development (KTD) Trunk Road T2 and Infrastructure at South Apron Investigation. The assignment covers the provision of the Trunk Road T2 and its connections with the Central Kowloon Route (CKR) at the north apron area and the Tseung Kwan O Lam Tin Tunnel (TKOLTT) to the south in the Cha Kwo Ling area.
- 1.2 The Trunk Road T2 Project is one of the designated Projects under Schedule 2 of the EIAO proposed in the KTD. CEDD submitted the Project Profile (No. PP-379/2009) on 24 March 2009 for application for an EIA study brief for the Trunk Road T2 Project under the EIAO. Accordingly, an EIA Study Brief (ESB-203/2009) for the Trunk Road T2 Project was issued on 30 April 2009. The Environmental Impact Assessment (EIA) Report for the Trunk Road T2 Project was approved under the Environmental Impact Assessment Ordinance (EIAO) on 19 September 2013. The corresponding Environmental Permit (EP) was issued on 19 September 2013 (EP no.: EP-451/2013).
- 1.3 The Contract No. ED/2018/04 is the main contract of Trunk Road T2 ("T2 Main Works") which comprises mainly the design and construction of a dual two-lane trunk road of approximately 3.4km long with about 3.1km of the trunk road in form of tunnel; ventilation and administration buildings, environmental protection and mitigation works and etc. Moreover, the Contract No. ED/2020/03 is the other contract under Truck Road T2 Project which comprises mainly design and construction of the TCSS for this Project. The EM&A programme at Kai Tak area under the Contract ED/2018/04 and ED/2020/03 are governed by the EP-451/2013 and EM&A Manual (AEIAR-174/2013). The work areas of the Trunk Road T2 Project are shown in **Figure 1** and the works to be executed under each Contract and corresponding EP are summarized as follows:

<b>Environmental Permit</b>	Works Description	
EP-451/2013 – Trunk Road T2	<u>ED/2018/04</u>	
	Construction of highway and sub-sea tunnel connecting between	
	Central Kowloon Route and Cha Kwo Ling Tunnel	
	Western & Eastern Ventilation Buildings	
	ED/2020/03	
	Design and construction of TCSS for Trunk Road T2	

#### Monitoring Works in Kai Tak under EP-451/2013

1.4 Under Contract No. KL/2014/03 – Kai Tak Development – Stage 3 Infrastructure Works for Development at the Southern Part of the Former Runway ("T2 Advance Works"), the baseline monitoring works in Kai Tak under the EM&A Manual (AEIAR-174/2013) were conducted by the Environmental Team (ET) for the Contract No. KL/2014/03 at the approved relocated monitoring locations (EPD reference: EP2/K19/A/21 pt.5), namely KTD1a, KTD2a & KER1a. During the impact monitoring period, monitoring locations KTD 2a and KER 1a were relocated to new locations, i.e. KTD 2b and KER 1b (EPD reference: ( ) in EP2/K19/A/21 pt. 6 and ( ) in EP2/K19/A/21 pt. 5) respectively. Location KTD2b was then further relocated to location KTD2c, the proposal of such relocation was submitted to EPD on 24 March 2020 and was approved by EPD on 6 April 2020 (EPD reference: ( ) in EP2/K19/A/21 pt.7). The aforementioned relocation was effective from 9 April 2020. Since the major part of work under

Contract No. KL/2014/03 has been completed and monitoring works conducted by the ET of Contract No. KL/2014/03 was determined to be ceased, the impact monitoring within the Kai Tak area was then handed over to the ET of Contract No. ED/2018/04 on 1 August 2020. The monitoring location has been reviewed and updated to obtain the data with higher representative based on several conditions, such as distance between monitoring location and the sensitive receiver, non-project related interference, obstruction to the construction works on site and the power supply problem. The monitoring location KTD1a and KER1b has been updated to the monitoring location KTD1 and KER1 on 3 August 2020, where are the original location as proposed in the EM&A manual (AEIAR-174/2013). And the monitoring location KTD2c was remained unchanged after the aforementioned review. Location KTD2c was then further relocated to location KTD2d, the proposal of such relocation was submitted on 9 March 2021 and was approved by EPD on 3 27th 2021 (EPD reference: ( ) in EP2/K19/A/21 pt.8). The aforementioned relocation was effective from 24 May 2021. The impact monitoring for the three stations KTD1, KTD2d and KER1 are currently conducted by the ET of T2 Main Works

#### Monitoring Works in Cha Kwo Ling under EP-451/2013

- 1.5 The environmental impact of the remaining works in Cha Kwo Ling, under EP-451/2013, shall be monitored at the two proposed stations, namely CKL1, CKL2, in accordance to the EM&A Manual (AEIAR-174/2013). The impact monitoring for the two proposed stations shall be conducted by the ET of T2 Main Works.
- 1.6 Cinotech Consultants Ltd. Was designated as the Environmental Team (ET) to undertake the EM&A works for "Trunk Road T2 and Infrastructure Works for Developments at the Former South Apron" (hereinafter called the "Project") and "Trunk Road T2 –Traffic Control & Surveillance System (TCSS) and Associated Works".

#### **Purpose of the Report**

1.7 This is the 32<sup>th</sup> Monthly EM&A Report which summarises the impact monitoring results and audit findings for the EM&A programme during the reporting period in October 2022

#### **Project Organizations**

- 1.8 Different Parties with different levels of involvement in the Project organization include:
  - Permit Holder Civil Engineering and Development Department (CEDD)
  - Supervisor Representative Hyder-Meinhardt Joint Venture (HMJV)
  - Environmental Team (ET) Cinotech Consultants Limited (Cinotech)
  - Independent Environmental Checker (IEC) Ramboll Hong Kong Limited (Ramboll)
  - Contractor Bouygues Travaux Publics (BTP) (For ED/2018/04) & GTECH Services (Hong Kong) Limited (For ED/2020/03)

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

**Table 1.1 Key Project Contacts** 

Party	Role	<b>Contact Person</b>	Phone No.
CEDD	Permit Holder	Mr. Wong Chi Wai, Tommy	3842 7111
HMJV	Supervisor Representative	Ms. Hazel Tang	2149 8524
Cinotech	Environmental Team	Mr. KS Lee (ETL)	2151 2091
Cinotech	Environmental Team	Ms. Karina Chan	2157 3880
Ramboll	Independent Environmental Checker	Mr. YH Hui	3465 2850
BTP	TP Contractor (ED/2018/04) Ms. Ality Chan		5185 4462
GTECH	Contractor (ED/2020/03)	Mr. Terry Leung	2123 0848

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

# Construction Activities undertaken during the Reporting Month

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

**Table 1.2** Summary of Key Construction Work in the Reporting Month

Contract No.	Project Title	Site Activities
ED/2018/04	Trunk Road T2 and Infrastructure Works for Developments at South Apron	<ul> <li>Depressed Road – Portal Structure, Capping Beam</li> <li>Depressed Road – DPR/SUS connection</li> <li>West Ventilation Building – Basement 2 Construction</li> <li>Launching Shaft / Cut &amp; Cover RC Structure</li> <li>Westbound TBM Tunnelling</li> <li>Eastbound TBM Tunnelling</li> <li>EB Service Gallery Installation</li> <li>WB Service Gallery Installation</li> <li>CP Tympanum construction</li> <li>SUS Remaining Internal Wall</li> <li>SUS OHVB In-situ Slab</li> <li>Tunnel Segment delivery</li> </ul>
ED/2020/03	Trunk Road T2 – Traffic Control And Surveillance System (TCSS) and Associated Works <sup>(1)</sup>	N/A

Notes:

(1): No major construction work was undertaken during reporting month.

N/A: Not applicable

- 1.12 The EM&A programme requires construction noise, air quality monitoring and environmental site audit, etc. The EM&A requirements for each parameter are described in the following sections, including:
  - All monitoring parameters;
  - Action and Limit levels for all environmental parameters;
  - Event Action Plans;
  - Environmental mitigation measures, as recommended in the Project EIA Report.
- 1.13 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in **Section 10** of this report.
- 1.14 This report presents the monitoring results, observations, locations, equipment, period, methodology and QA/QC procedures of the monitoring parameters of the required environmental monitoring works and audit works for the Project in October 2022.

#### **Status of Environmental Licensing and Permitting**

1.15 All permits/licenses obtained for the Project are summarized in **Table 1.3**.

Table 1.3 Summary of Environmental License and Permit

Contract	D	Valid	C4-4			
No.	Permit / License No.	From	То	Status		
Environment	al Permit (EP)					
N/A	EP-451/2013	19 Sep 2013	N/A	Valid		
Notification p	oursuant to Air Pollution (Construction	on Dust) Regula	tion			
ED/2018/04	Ref. No.: 451120	20 Nov 2019	N/A	Valid		
ED/2020/03	Ref. No.: 483143	15 Aug 2022	N/A	Valid		
Billing Accou	nt for Construction Waste Disposal					
ED/2018/04	A/C No.: 7036016	09 Dec 2019	N/A	Valid		
ED/2020/03	A/C No.: 7043158	31 Jan 2022	N/A	Valid		
Billing Accou	Billing Account for Vessel Disposal					
ED/2018/04	A/C No.:7037747 (Application No.: CEDD01161)	12 Jul 2022	25 Oct 2022	Expired on 25 Oct 2022		
ED/2018/04	A/C No.:7037747 (Application No.: CEDD01170)	26 Oct 2022	25 Jan 2023	Valid		
Construction Noise Permit						
ED/2018/04	CNP No. (For Launching Shaft and Barging Point): GW- RE0817-22	24 Aug 2022	23 Feb 2023	Valid		
	CNP No. (For Depressed Road): GW-RE0936-22	26 Sep 2022	25 Mar 2023	Valid		

# **Monthly EM&A Report – October 2022**

Contract	Permit / License No.	Valid	Status		
No.	Fermit / License No.	From	То	Status	
	CNP No. (For Launching Shaft and Barging Point): GW- RE1079-22	24 Oct 2022	30 Mar 2023	Valid	
Wastewater 1	Discharge License				
	WT00036183-2020 (For Depressed Road Area)	27 Jul 2020	31 Jul 2025	Valid	
ED/2018/04	WT00039117-2021 (For Site Office and Support Area)	28 Sep 2021	30 Sep 2026	Valid	
	WT00036228-2020 (For Launching Shaft)	10 Nov 2021	31 Jul 2025	Valid	
Chemical Wa	Chemical Waste Producer License				
ED/2018/04	WPN: 5213-286-B2557-03	09 Mar 2020	N/A	Valid	

#### 2. AIR QUALITY

#### **Monitoring Requirement**

2.1 According to the EM&A Manual (AEIAR-174/2013), 24-hour Total Suspended Particulates (TSP) monitoring was conducted to monitor the air quality for this Project. For regular impact monitoring, a sampling frequency of at least once in every six days at all of the monitoring stations for 24-hour TSP monitoring. In case of complaints, 1-hour TSP monitoring should be conducted at least three times in every six days when the highest dust impacts are likely to occur. **Appendix A** shows the established Action/Limit Levels for the environmental monitoring works.

# **Monitoring Locations**

- 2.2 Five designated monitoring stations were selected for air quality monitoring programme. **Table 2.1** describes the air quality monitoring locations, which are also depicted in **Figure 2**.
- 2.3 The monitoring location at Kai Tak area has been reviewed and updated to obtain the data with higher representative based on several conditions, such as distance between monitoring location and the sensitive receiver, non-project related interference, obstruction to the construction works on site and the power supply problem. The monitoring location KTD1a and KER1b has been updated to KTD1 and KER1 respectively, where are the original location as proposed in the EM&A manual (AEIAR-174/2013). And the monitoring location KTD2c was remained unchanged after the aforementioned review. Monitoring location KTD2c was then further relocated to KTD2d after the review of status and location of monitoring station conducted in between February and March 2021.

**Table 2.1 Air Quality Monitoring Locations** 

Monitoring Stations Location	
KTD1	Centre of Excellence in Paediatrics (Children's Hospital)
KTD2d	Next to the SOR Office of Trunk Road T2 in Kai Tak Area
KER1	Future Residential Development at Kerry Godown
CKL1	Flat 121 Cha Kwo Ling Village
CKL2	Flat 103 Cha Kwo Ling Village

#### **Monitoring Parameters and Frequency**

2.4 **Table 2.2** summarizes the monitoring parameters, monitoring period and frequencies of impact air quality monitoring. The monitoring schedule is shown in **Appendix B**.

Table 2.2 Frequency and Parameters of Air Quality Monitoring

<b>Monitoring Stations</b>	Parameter	Period	Frequency
KTD1, KTD2d, KER1, CKL1 & CKL2	1-hour TSP	0700 – 1900	3 times per 6 days (as required in case of complaints)
KTD1, KTD2d, KER1, CKL1 & CKL2	24-hour TSP	24 hours	Once every 6 days

#### **Monitoring Equipment**

- 2.5 High Volume Samplers (HVS) in compliance with the specification stipulated in the EM&A Manual (AEIAR-174/2013), Section 2.2.1.4, were used to carry out 24-hour TSP monitoring. Direct reading dust meter were also used to measure 1-hour average TSP levels. The 1-hour sampling was determined by HVS to check the validity and accuracy of the results measured by direct reading method.
- 2.6 Wind data monitoring equipment was set at rooftop (about 41/F) of Yau Lai Estate Bik Lai House, Lam Tin for logging wind speed and wind direction such that the wind sensors were clear of obstructions or turbulence caused by building. The wind data monitoring equipment was recalibrated at least once every six months and the wind directions were divided into 16 sectors of 22.5 degrees each. Wind data is attached in **Appendix D**.
- 2.7 **Table 2.3** summarizes the equipment used for air quality monitoring. Copies of calibration certificates are attached in **Appendix C**.

Table 2.3 Air Quality Monitoring Equipment

Equipment	Model	Quantity
HVS Sampler	TISCH Model: TE-5170 (Serial no. 0723, 1956, 10595, 1316, 5280)	5
Calibrator	TISCH Model: TE-5025A (Serial no. 3864)	1
Wind Anemometer	Davis Weather Monitor II, Model no. 7440 (Serial no. MC01010A44)	1

#### **Monitoring Methodology**

#### 1-hour TSP Monitoring

#### Measuring Procedures

2.8 The measuring procedures of the 1-hour dust meter are in accordance with the Manufacturer's Instruction Manual as follows:

(Sibata Model No.: LD-3B/LD-5R)

- The 1-hour dust meter is placed at least 1.3 meters above ground.
- Set POWER to "ON" and make sure that the battery level was not flash or in low level.
- Allow the instrument to stand for about 3 minutes and then the cap of the air sampling inlet has been released.

- Push the knob at MEASURE position.
- Set time/mode setting to [BG] by pushing the time setting switch. Then, start the background measurement by pushing the start/stop switch once. It will take 6 sec. to complete the background measurement.
- Push the time setting switch to change the time setting display to [MANUAL] at the bottom left of the liquid crystal display. Finally, push the start/stop switch to stop the measuring after 1 hour sampling.
- Information such as sampling date, time, count value and site condition were recorded during the monitoring period.

#### Maintenance/Calibration

- 2.9 The following maintenance/calibration is required for the 1-hour dust meter:
  - Check and calibrate the meter by HVS to check the validity and accuracy of the results measured by direct reading method at 2-month intervals throughout all stages of the air quality monitoring.

#### 24-hour TSP Monitoring

#### Instrumentation

- 2.10 High volume samplers (HVS) (TISCH Model: TE-5170) complete with appropriate sampling inlets was employed for 24-hour TSP monitoring. The sampler was composed of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complied with that required by USEPA Standard Title 40, Code of Federation Regulations Chapter 1 (Part 50). Moreover, the HVS also met all the requirements in Section 2.2 of the Annex II Specification.
- 2.11 The positioning of the HVS samplers are as follows:
  - A horizontal platform with appropriate support to secure the samplers against gusty wind shall be provided;
  - No two samplers shall be placed less than 2 meter apart;
  - The distance between the sampler and an obstacle, such as buildings, must be at least twice the height that the obstacle protrudes above the sampler;
  - A minimum of 2 metres of separation from walls, parapets and penthouses is required for rooftop samplers;
  - A minimum of 2 metres of separation from any supporting structure, measured horizontally is required;
  - No furnace or incinerator flue is nearby;
  - Airflow around the sampler is unrestricted;
  - The sampler is more than 20 metres from the dripline;
  - Any wire fence and gate, to protect the sampler, shall not cause any obstruction during monitoring;
  - Permission must be obtained to set up the samplers and to obtain access to the monitoring stations; and
  - A secured supply of electricity is needed to operate the samplers.

#### Operating/analytical procedures for the operation of HVS

- 2.12 Operating/analytical procedures for the air quality monitoring are highlighted as follows:
  - Prior to the commencement of the dust sampling, the flow rate of the high volume sampler was properly set (between 0.6 m³/min. and 1.7 m³/min.) in accordance with the EM&A manual (AEIAR-174/2013). The flow rate shall be indicated on the flow rate chart.
  - For TSP sampling, fiberglass filters with a collection efficiency of > 99% for particles of 0.3 µm diameter were used.
  - The power supply was checked to ensure the sampler worked properly. On sampling, the sampler was operated for 5 minutes to establish thermal equilibrium before placing any filter media at the designated air monitoring station.
  - The filter holding frame was then removed by loosening the four nuts and a weighted and conditioned filter was carefully centered with the stamped number upwards, on a supporting screen.
  - The filter was aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter. Then the filter holding frame was tightened to the filter holder with swing bolts. The applied pressure should be sufficient to avoid air leakage at the edges.
  - The shelter lid was closed and secured with the aluminum strip.
  - The timer was then programmed. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number).
  - After sampling, the filter was removed and sent to the HOKLAS laboratory (High Precision Chemical Testing Ltd.) for weighing. The elapsed time was also recorded.
  - Before weighing, all filters were equilibrated in a conditioning environment for 24 hours. The conditioning environment temperature should be between 25°C and 30°C and not vary by more than ±3°C; the relative humidity (RH) should be < 50% and not vary by more than ±5%. A convenient working RH is 40%.

#### Maintenance/Calibration

- 2.13 The following maintenance/calibration is required for the HVS:
  - The high volume motors and their accessories were properly maintained. Appropriate maintenance such as routine motor brushes replacement and electrical wiring checking were made to ensure that the equipment and necessary power supply are in good working condition.
  - High volume samplers were calibrated at bi-monthly intervals using TE-5025A Calibration Kit throughout all stages of the air quality monitoring.

#### **Results and Observations**

- 2.14 Impact air quality monitoring was conducted at five monitoring stations as scheduled. The monitoring schedule is shown in **Appendix B**.
- 2.15 Four (4) Action and Two (2) Limit Level exceedance was recorded for 24-hour TSP monitoring in the reporting month. Two (2) exceedance of 24-hour TSP were considered as **project related** and four (4) exceedance of 24-hour TSP were considered as **non-project related**. Details of the exceedance are presented in **Appendix M**.
- 2.16 The air temperature, relative humidity, and the precipitation data were obtained from daily extracts of Hong Kong Observatory Climate Information Service. This weather information for the reporting month is summarized in **Appendix D**.
- 2.17 The monitoring data and graphical presentations of 24-hour TSP monitoring results are shown in **Appendix F**.
- 2.18 According to field observations observed in the reporting period, the major dust source identified at the designated air quality monitoring stations are as follows:

Table 2.4 Major Dust Source during Air Quality Monitoring

<b>Monitoring Stations</b>	Major Dust Source
KTD 1 - Centre of Excellence in Paediatrics (Children's Hospital)	<ul> <li>Project related construction activities (i.e., Loading and unloading of C&amp;D wastes, drilling, crushing of material);</li> <li>Vehicle movement in the site;</li> </ul>
KER 1 – Future Residential Development at Kerry Godown	<ul> <li>Construction activities at the nearby construction sites of New Acute Hospital; and,</li> <li>Road traffic along Shing Fung Road, Shing Cheong Road, Cheung Yip Street, Kai Hing Road and Kwun Tong Bypass.</li> </ul>
KTD 2d – Next to the SOR Office of Trunk Road T2 in Kai Tak Area	<ul> <li>Project related construction activities (i.e., Loading and unloading of C&amp;D material, crushing of material);</li> <li>Vehicle movement in the site; and,</li> <li>Non-project related construction activities</li> </ul>
CKL1 - Flat 121 Cha Kwo Ling Village	Road Traffic along Cha Kwo Ling Road
CKL2 - Flat 103 Cha Kwo Ling Village	Road Traffic along Cha Kwo Ling Road

#### Comparison of EM&A Result with EIA Prediction

2.19 The air monitoring data was compared with the predictions in Table 4.14 of EIA Report, AEIAR-174/2013 (as approved in 2013) as summarised in **Table 2.6** for 24-hour TSP.

Table 2.6 Comparison of 24-hr TSP Monitoring Data with Predictions in EIA Report

Monitoring Stations	ASR ID	Predicted Maximum 24-hr TSP Concentration in EIA Report (AEIAR- 174/2013), μg/m <sup>3</sup>	Maximum 24-hr TSP Concentration in the Reporting Month (October 2022), μg/m <sup>3</sup>
KTD 1 - Centre of Excellence in Paediatrics (Children's Hospital)	KTD3	126	77.6
KTD 2d – Next to the SOR Office of Trunk Road T2 in Kai Tak Area	N/A <sup>(1)</sup>	N/A <sup>(1)</sup>	296.5
KER 1 – Future Residential Development at Kerry Godown	KTD6	169	401.2
CKL1 - Flat 121 Cha Kwo Ling Village	N/A <sup>(1)</sup>	N/A <sup>(1)</sup>	204.9
CKL2 - Flat 103 Cha Kwo Ling Village	N/A <sup>(1)</sup>	N/A <sup>(1)</sup>	206.1

Remarks:

2.20 In the reporting month the 24-hour TSP concentration at KTD1 were lower than the prediction in the EIA Report, AEIAR-174/2013 (as approved in 2013). However, the 24-hour TSP concentration at KER1 was higher than the prediction in the EIA Report, which mainly due to the insufficient dust reduction measures in the site entrance at Launching Shaft. Four (4) Action and Two (2) Limit level exceedance for 24-hour TSP was recorded in the reporting period.

<sup>(1)</sup> No 24-hr TSP concentration was predicted in EIA Report (AEIAR-174/2013)

#### 3 NOISE

#### **Monitoring Requirements**

3.1 According to the EM&A Manual (AEIAR-174/2013), construction noise monitoring was conducted to monitor the construction noise arising from the construction activities. The regular monitoring frequency for each monitoring station shall be on a weekly basis and conduct one set of measurements between 0700 and 1900 hours on normal weekdays. **Appendix A** shows the established Action and Limit Levels for the environmental monitoring works.

#### **Monitoring Locations**

- 3.2 Noise monitoring was conducted at five designated monitoring stations, namely KTD1, KTD2d, KER1, CKL1 and CKL2 in the reporting period. **Table 3.1** and **Figure 2** show the locations of these stations.
- 3.3 The monitoring location at Kai Tak area has been reviewed and updated to obtain the data with higher representative based on several conditions, such as distance between monitoring location and the sensitive receiver, non-project related interference, obstruction to the construction works on site and the power supply problem. The monitoring location KTD1a and KER1b has been updated to KTD1 and KER1 respectively, where are the original location as proposed in the EM&A manual (AEIAR-174/2013). And the monitoring location KTD2c was remained unchanged after the aforementioned review. Monitoring location KTD2c was then further relocated to KTD2d after the review of status and location of monitoring station conducted in between February and March 2021.

**Table 3.1 Noise Monitoring Stations** 

<b>Monitoring Stations</b>	Location
KTD1	Centre of Excellence in Paediatrics (Children's Hospital)
KTD2d	Next to the SOR Office of Trunk Road T2 in Kai Tak Area
KER1	Future Residential Development at Kerry Godown
CKL1	Flat 121 Cha Kwo Ling Village
CKL2	Flat 103 Cha Kwo Ling Village

#### **Monitoring Parameters, Frequency and Duration**

3.4 **Table 3.2** summarizes the monitoring parameters, frequency and total duration of monitoring. The noise monitoring schedule is shown in **Appendix B**.

Monitoring Stations	Time Period	Duration	Frequency	Parameter	Measurement
KTD1					Façade Measurement
KTD2d				L <sub>10</sub> (30 min.) dB(A)	Free Field Measurement
KER1	0700-1900 hrs on normal weekdays	30 minutes	Once per week	L <sub>90</sub> (30 min.) dB(A)	Free Field Measurement
CKL1	weekdays			$L_{eq}(30 \text{ min.})$	Free Field Measurement
CKL2				dB(A)	Free Field Measurement

Table 3.2 Frequency and Parameters of Noise Monitoring

#### **Monitoring Equipment**

3.5 Integrating Sound Level Meter was used for impact noise monitoring. The meters were Type 1 sound level meter capable of giving a continuous readout of the noise level readings including equivalent continuous sound pressure level ( $L_{eq}$ ) and percentile sound pressure level ( $L_x$ ) that also complied with International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1) specifications. **Table 3.3** summarizes the noise monitoring equipment being used within the reporting period. Copies of calibration certificates are attached in **Appendix G**.

**Table 3.3** Noise Monitoring Equipment

Equipment	Model	Quantity
Integrating Sound Level Meter	BSWA 308 (Serial no. 570187,570183,580156)	3
	SVAN 957 (Serial no. 23851,23852)	2
Calibrator	ST-120 (Serial no. 181001608)	1

#### Monitoring Methodology and QA/QC Procedure

- 3.6 The monitoring procedures are as follows:
  - The monitoring station was normally be at a point 1m from the exterior of the sensitive receivers building façade and be at a position 1.2m above the ground.
  - For free field measurement, the meter was positioned away from any nearby reflective surfaces. All records for free field noise levels were adjusted with a correction of +3 dB(A).
  - The battery condition was checked to ensure the correct functioning of the meter.
  - Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
    - Frequency weighting: A
    - Time weighting: Fast
    - Time measurement: 30 minutes
  - Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after measurement was more than 1.0 dB, the measurement would be considered invalid and repeat of noise

- measurement would be required after re-calibration or repair of the equipment.
- The wind speed was frequently checked with the portable wind meter.
- At the end of the monitoring period, the L<sub>eq</sub>, L<sub>90</sub> and L<sub>10</sub> were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.
- Noise monitoring would be cancelled in the presence of fog, rain, and wind with a steady speed exceeding 5 m/s, or wind with gusts exceeding 10 m/s. Supplementary monitoring would be provided to ensure sufficient data would be obtained.

#### **Maintenance and Calibration**

- 3.7 The microphone head of the sound level meter and calibrator were cleaned with a soft cloth at quarterly intervals.
- 3.8 The sound level meter and calibrator were checked and calibrated at yearly intervals.
- 3.9 Immediately prior to and following each noise measurement the accuracy of the sound level meter was checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements were accepted as valid only if the calibration levels from before and after the noise measurement agree to within 1.0 dB.

#### **Results and Observations**

- 3.10 Impact noise monitoring was conducted at five monitoring stations as scheduled. The monitoring schedule is shown in **Appendix B**. No Action/ Limit Level exceedance was recorded for day time construction noise monitoring in the reporting month.
- 3.11 Noise monitoring results and graphical presentations are shown in **Appendix H**.
- 3.12 According to field observations observed in the reporting period, the major noise sources identified at the noise monitoring stations are shown in **Table 3.4**.

**Table 3.4** Other Noise Source Identified during Noise Monitoring

<b>Monitoring Stations</b>	Major Noise Source
KTD 1	<ul> <li>Project related construction activities (Loading and unloading of C&amp;D waste, travel of vehicles, use of PME and other plants, and other construction activities);</li> <li>Vehicle movement in the site;</li> <li>Road traffic along Shing Cheong Road; and,</li> </ul>
	<ul> <li>Non-project related construction activities at the nearby construction site of New Acute Hospital.</li> </ul>
KTD 2d	<ul> <li>Project related construction activities (Loading and unloading of C&amp;D waste, travel of vehicles, use of PME and other plants, and other construction activities);</li> <li>Vehicle movement in the site; and,</li> <li>Non-project related construction activities.</li> </ul>
KER 1	<ul> <li>Road traffic along Kai Hing Road.</li> <li>Project related construction activities (Travel of vehicles, use of PME and other plants, and other construction activities)</li> </ul>
CKL1	Road traffic along Cha Kwo Ling Road.
CKL2	Road traffic along Cha Kwo Ling Road

3.13 The baseline noise level and the Noise Limit Level at each designated noise monitoring station are presented in **Table 3.5**.

Table 3.5 Baseline Noise Level and Noise Limit Level for Monitoring Stations

Monitoring Stations	Baseline Noise Level, dB (A) (at 0700 – 1900 hrs on normal weekdays)	Noise Limit Level, dB (A) (at 0700 – 1900 hrs on normal weekdays)
KTD1	78	
KTD2d	64	
KER1	65	75
CKL1	72.4	
CKL2	71.4	

#### Comparison of EM&A Result with EIA Prediction

3.14 The noise monitoring data was compared with the predictions in Table 5.13 of EIA Report (AEIAR-174/2013) as summarised in **Table 3.6**.

Table 3.6 Maximum Predicted Mitigated Construction Noise Levels in EIA Report

Monitoring Stations	NSR ID	Maximum Predicted Mitigated Construction Noise Levels in EIA Report (AEIAR- 174/2013), dB(A)	Maximum Construction Noise Levels in the Reporting Month (October 2022), Leq (30min) dB(A)
KTD 1 - Centre of Excellence in Paediatrics (Children's Hospital)	KTD1	74	71.8
KTD2d – Next to the SOR Office of Trunk Road T2 in Kai Tak Area	N/A <sup>(1)</sup>	N/A <sup>(1)</sup>	71.4
KER 1 – Future Residential Development at Kerry Godown	KER1	75	72.7
CKL1 - Flat 121 Cha Kwo Ling Village	CKL4	71	73.1
CKL2 - Flat 103 Cha Kwo Ling Village	CKL5	69	73.6

Remarks:

 $(1): No\ Maximum\ Predicted\ Mitigated\ Construction\ Noise\ Levels\ was\ predicted\ in\ EIA\ Report\ (AEIAR-174/2013)$ 

3.15 The results at CKL1 and CKL2 were higher than the maximum predicted mitigated construction noise level in the EIA Report, AEIAR-174/2013 (as approved in 2013), this may be due to fluctuations of traffic flow along Cha Kwo Ling Road throughout the day. Besides, the result at KTD1 and KER1 were lower than the maximum predicted mitigated construction noise level in the EIA Report. No Action/Limit Level exceedance were recorded in the reporting period.

#### 4 WATER QUALITY

#### **Monitoring Requirement**

- 4.1 According to Section 4.3.1.1 of EM&A Manual (AEIAR-174/2013), no water quality monitoring is required during the construction phase.
- 4.2 According to Section 4.3.1.5 of EM&A Manual (AEIAR-174/2013), compliance site audits are to be undertaken by the Engineer and ET and escorted by the Contractor to ensure that a valid discharge license has been issued by the EPD prior to the discharge of the effluent from the construction activities of the Project site. Monitoring of the quality of the treated effluent from the works areas should be carried out in accordance with the Water Pollution Control Ordinance (WPCO) license. The audit results reflect whether the effluent quality is in compliance with the discharge license requirements, the summaries of site audits are attached in **Appendix I**.
- 4.3 In the event of non-compliance the responsibilities of the relevant parties is detailed in the Event / Action plan attached in **Appendix J**.

#### 5 MARINE ECOLOGY

- 5.1 According to Section 5.3.1.1 of EM&A Manual (AEIAR-174/2013), ET will be required to undertake audit of good site practice for habitat protection as detailed below. The summaries of site audits are attached in **Appendix I**.
  - Avoid damage and disturbance to the remaining and surrounding natural habitat;
  - Ensure placement of equipment is within designated areas within the existing disturbed land;
  - Ensure construction activities are restricted to within the proposed works boundary;
  - Ensure spoil heaps are be covered at all times;
  - Ensure that disturbed areas are reinstated immediately after completion of the works; and
  - Ensure enhancement planting works undertaken.

#### 6 FISHERIES

- 6.1 According to Section 6.3.1.2 of EM&A Manual (AEIAR-174/2013), no specific fisheries monitoring and audit programme is required during the construction phase.
- 6.2 The implementation of the water quality mitigation measures stated in the Water Quality Impact Assessment (Refer to Section 6 of the EIA Report (AEIAR-174/2013)) will be audited as part of the EM&A procedures during the construction period and the details are presented in **Section 4.2** of this Report. The summaries of site audits are attached in **Appendix I**.

#### 7 LANDSCAPE AND VISUAL

7.1 According to the EM&A Manual (AEIAR-174/2013), a series of mitigation measures were recommended to ameliorate the landscape and visual impacts of the Project. The mitigation measures for construction stage are summarized in **Table 7.1** below and provided in **Appendix K**:

**Table 7.1** Construction Phase Landscape and Visual Mitigation Measures

ID No.	Landscape and Visual Mitigation Measure
CM1	All works shall be carefully designed to minimize impacts on existing landscape resources and visually sensitive receivers.  Existing trees within works area shall be retained and protected.
CM2	Existing trees of good quality and condition that are unavoidably affected by the works should be transplanted.
CM3	Not used.
CM4	Not used.
CM5	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.
CM6	Construction plant and building material shall be orderly and carefully stored in order to create a neat and tidy visual appearance
CM7	Erection of decorative screen hoarding should be designed to be compatible with the existing urban context.
CM8	All lighting in construction site shall be carefully controlled to minimize light pollution and night-time glare to nearby residences and GIC user. The contractor shall consider other security measures, which shall minimize the visual impacts.

- 7.2 A specialist Landscape Sub-Contractor should be employed by the Contractor for the implementation of landscape construction works and subsequent maintenance operations during the establishment period. It is proposed that the planting works will be on-site and the planting should be completed during the construction contract. The monitoring of the planting establishment should be undertaken for a 12 month period which could extend throughout the Contractor's one-year maintenance period, which will be within the first operational year of the Project.
- 7.3 All measures undertaken by both the Contractor and the specialist Landscape Sub-Contractor during the construction phase and first year of the operational phase shall be audited by a Registered Landscape Architect (RLA), as a member of the Environmental Team (ET), on a regular basis to ensure compliance with the intended aims of the measures. To fulfil the aforementioned requirements, on-site landscape and visual mitigation measures were audited by

RLA in the reporting month.

- 7.4 According to Section 7.3.1.2 of the EM&A Manual (AEIAR-174/2013), site audits shall be undertaken at least once every two weeks throughout the construction period to monitor and audit the timely implementation of landscape and visual mitigation measures within the site boundaries of this Project.
- 7.5 The broad scope of the audit is detailed below but should also be undertaken with reference to the more specific checklist provided in **Table 7.2**. The summaries of site audits are attached in **Appendix I**:
  - The extent of the agreed works areas should be regularly checked during the construction phase. Any trespass by the Contractor outside the limit of the works, including any damage to existing trees and soft landscape areas shall be prohibited;
  - the progress of the engineering works should be regularly reviewed on site to identify the earliest practical opportunities for the landscape works to be undertaken;
  - all existing trees and vegetation within the study area which are not directly affected by the works are retained and protected;
  - the methods of protecting existing vegetation proposed by the Contractor are acceptable and enforced;
  - preparation, lifting transport and re-planting operations for any transplanted trees;
  - all landscaping works are carried out in accordance with the specifications;
  - the planting of new trees, shrubs, groundcover, climbers, ferns, grasses and other plans, together with the replanting of any transplanted trees are carried out properly and within the right season; and
  - all necessary horticultural operations and replacement planting are undertaken throughout the Establishment Period to ensure the healthy establishment and growth of both transplanted trees and all newly established plants.

Table 7.2 Construction Phase Audit Checklist for Landscape and Visual Mitigation Measures

Area of Works	Items to be Monitored
Advance planting	Monitoring of implementation and maintenance of planting, and against possible incursion, physical damage, fire, pollution, surface erosion, etc.

Area of Works	Items to be Monitored
Protection of all trees and existing soft landscape areas to be retained	Identification and demarcation of trees / vegetation to be retained, erection of physical protection (e.g. fencing), monitoring against possible incursion, physical damage, fire, pollution, surface erosion, etc.
Clearance of existing vegetation	Identification and demarcation of trees / vegetation to be cleared, checking of extent of works to minimise damage, monitoring of adjacent areas against possible incursion, physical damage, fire, pollution, surface erosion, etc.
Pruning of trees	Identification and demarcation of trees / vegetation to be pruned, monitoring of extent of pruning to minimise damage, timing of operations, implementation of all stages of preparatory and pruning works, and maintenance of pruned vegetation, etc.
Plant supply	Monitoring of operations relating to the supply of specialist plant material (including the collecting, germination and growth of plants from seed) to ensure that plants will be available in time to be used within the construction works.
Soiling, planting, etc.	Monitoring of implementation and maintenance of soiling and planting works and against possible incursion, physical damage, fire, pollution, surface erosion, etc.
Site fencing and hoarding	Implementation and maintenance, to ensure compliance with agreed designs and check that it matches the surrounding environment and does not cause visual intrusion.
Architectural treatment of engineering works.	Implementation and maintenance of mitigation measures, to ensure compliance with agreed designs as applicable.
Establishment Works	Monitoring of implementation of maintenance operations during Establishment Period.

- 7.6 In the event of non-compliance the responsibilities of the relevant parties is detailed in the Event / Action plan attached in **Appendix J**.
- 7.7 In the reporting month, no non-compliance of the landscape and visual mitigation measures was recorded by RLA.

#### 8 CULTURAL HERITAGE

- 8.1 According to Section 8.3.1.1 of EM&A Manual (AEIAR-174/2013), as a precautionary measure, it is recommended that if any antiquity or supposed antiquity is discovered during the course of the excavation works undertaken by the Contractor, the discovery shall be reported to the AMO immediately and all necessary measures taken to preserve it.
- 8.2 According to Section 8.3.1.2 of EM&A Manual (AEIAR-174/2013), no EM&A is required during the construction and operational phase.

#### 9 WASTE MANAGEMENT

- 9.1 According to Section 9.3.1.1 of EM&A Manual (AEIAR-174/2013), the effective management of waste arisings during the construction phase will be monitored through the site audit programme. Regular audits and site inspections should be carried out by the Engineer, ET and Contractor to ensure that the recommended good site practices and other mitigation measures are implemented by the Contractor. The summaries of site audits are attached in **Appendix I**.
- 9.2 According to Sections 9.3.1.3 and 9.3.1.4 of EM&A Manual (AEIAR-174/2013), documents including licenses, permits, disposal and recycling records should be reviewed and audited during site audits for the compliance with the legislation and contract requirements to ensure proper records are being maintained and procedures undertaken in accordance with the Waste Management Plan.
- 9.3 With reference to the relevant handing records of this Project, the quantities of different types of waste generated in the reporting month are summarized and presented in the **Appendix O**.

#### 10 ENVIRONMENTAL AUDIT

#### **Site Audits**

- 10.1 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. The summaries of site audits are attached in **Appendix I**.
- 10.2 Site audits for the each contract were conducted as follows.
  - ED/2018/04 Site audit were conducted on 06, 13, 20 and 27 October 2022 in the reporting month. Site inspection of the IEC was conducted on 27 October 2022. No non-compliance was observed during the site audit.
  - ED/2020/03 Site audit was conducted on 28 October 2022 in the reporting month.

#### **Implementation Status of Environmental Mitigation Measures**

- 10.3 According to Environmental Permits, the approved EIA Reports (Register No.: AEIAR-174/2013 and AEIAR-173/2013), and the EM&A Manuals of the Project (AEIAR-174/2013 and AEIAR-173/2013), 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 K**.
- 10.4 The ET weekly site inspections were carried out during the reporting month and the observations and recommendations are summarized in **Table 10.1**. Refer to **Appendix I** for the site inspection summary reports in the reporting month.

Table 10.1 Observations and Recommendations of Site Audit

Parameters	Date	Observations and Recommendations	Follow-up
ماند الماند	29 Sep 2022	The NRMM label on a vehicle was damaged, the contractor should replace it soon.	The NRMM label has been replaced with the new one.
Air Quality	27 Oct 2022	The damaged NRMM label was observed. It should be replaced with the new one.	To be reported in the next month.
Noise	N/A	There was no observation in the reporting period.	N/A
Water Quality	N/A	There was no observation in the reporting period.	N/A
Ecology	N/A	There was no observation in the reporting period.	N/A
Landscape and Visual	N/A	There was no observation in the reporting period.	N/A

Parameters	Date	Observations and Recommendations	Follow-up
	29 Sep 2022	Accumulated waste was observed, it should be disposed properly.	The contractor has cleaned up the waste and disposed properly.
Waste / Chemical	13 Oct 2022	Drip tray should be provided to prevent leaked oil from entering drainage system.	The contractor identified that the oil container did not contain oil or chemical and it was only for storage only.
Management	20 Oct 2022	Drip tray should be provided to prevent leaked oil from entering drainage system.	The drip tray was provided to prevent the oil leakage.
	27 Oct 2022	The C&D material were observed in the tunnel area, the waste should be cleaned regularly	To be reported in the next month.
Permits /Licences	N/A	There was no observation in the reporting period.	N/A

#### **Implementation Status of Event and Action Plans**

10.5 The Event and Action Plans for air quality, construction noise, and landscape and visual are presented in **Appendix J**.

Air Quality Monitoring

• Four (4) Action and Two (2) Limit Level exceedance for 24-hour TSP monitoring was recorded.

#### Construction Noise Monitoring

• No Action / Limit Level exceedance was recorded in the reporting month.

#### Landscape and Visual

• No landscape and visual non-conformity was recorded.

#### Status of Required Submission under Environmental Permit

10.6 According the Section 11.3.2.1 (c) of the EM&A Manual (AEIAR-174/2013), status of required submission under EP-451/2013 during the reporting period are summarized in **Table 10.2**.

 Table 10.2
 Status of Required Submission under Environmental Permit

<b>EP Condition</b>	Submission	Submission Date
EP-451/2013		
Condition 2.3	Management Organization of Main Construction Companies	20 January 2020

# **Monthly EM&A Report – October 2022**

<b>EP</b> Condition	Submission	Submission Date
Condition 2.4	Design Drawing of the Project	20 January 2020
Condition 2.5	Landscape Mitigation Plan(s)	7 May 2020
Condition 2.10 (a)	Supplementary Contamination Assessment Plan	18 December 2015
Condition 2.10 (b)	Supplementary Contamination Assessment Report	6 December 2016
Condition 3.3	Updated Baseline Monitoring Report	03 November 2020
Condition 3.4	Monthly EM&A Report (September 2022)	14 September 2022

#### 11 ENVIRONMENTAL NON-CONFORMANCE

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

11.1 The summaries of environmental complaint, warning, summon and notification of successful prosecution for the Project is presented in **Appendix L**.

#### **Summary of Exceedance**

- 11.2 The summary of exceedance record in the reporting month is shown in **Appendix M**.
- 11.3 No non-conformity was recorded for landscape and visual inspections conducted in the reporting month.

#### 12 FUTURE KEY ISSUES

Tentative construction programmes for the next three months are provided in **Appendix N**.

12.1 Major site activities undertaken for the coming months and the key environmental issues are summarized as follows:

Table 12.1 Summary Table for Site Activities and the Key Environmental Issues in the next Reporting Period

Contract No. and Project Title	Site Activities (November 2022)	Key Environmental Issues
ED/2018/04 - Trunk Road T2 and Infrastructure Works for Developments at South Apron	<ol> <li>Depressed Road – Portal Structure, Capping Beam</li> <li>Depressed Road – DPR/SUS connection</li> <li>West Ventilation Building – Basement 2 Construction</li> <li>Launching Shaft / Cut &amp; Cover RC Structure</li> <li>Westbound TBM Tunnelling</li> <li>Eastbound TBM Tunnelling</li> <li>EB Service Gallery installation</li> <li>WB Service Gallery installation</li> <li>CP Tympanum construction</li> <li>SUS Remaining Internal Wall</li> <li>SUS OHVD in-situ Slab</li> <li>Tunnel Segment delivery</li> </ol>	<ul> <li>Wheel washing bay at site exits;</li> <li>Temporary noise barriers for PMEs;</li> <li>Sedimentation tank for settling muddy water; and</li> <li>Make sure open stockpiles are covered during rainstorm.</li> </ul>
ED/2020/03 - Trunk Road T2 - Traffic Control And Surveillance	N/A	

Contract No. and Project Title	Site Activities (November 2022)	Key Environmental Issues
System (TCSS) and		
Associated Works <sup>(1)</sup>		

Notes:

(1): No major construction work was undertaken during reporting month.

N/A: Not applicable

# **Monitoring Schedule**

12.2 The tentative environmental monitoring schedule for the next three months are shown in **Appendix B**.

#### 13 CONCLUSIONS AND RECOMMENDATIONS

#### **Conclusions**

13.1 This is the 32<sup>th</sup> Monthly EM&A Report which presents the EM&A works undertaken during the reporting month in accordance with the EM&A Manual (AEIAR-174/2013) and the requirement under EP.

#### **Air Quality Monitoring**

13.2 Four (4) Action and Two (2) Limit Level exceedance was recorded for 24-hour TSP monitoring in the reporting month.

#### **Construction Noise Monitoring**

- 13.3 No Limit Level exceedance was recorded for day-time construction noise monitoring in the reporting month.
- 13.4 No Action Level exceedance was recorded in the reporting month.

#### Site Audit

- 13.5 4 (Four) ET joint weekly environmental site inspections were conducted for the Contact No. ED/2018/04 in the reporting month.
- 13.6 1 (One) ET joint environmental site inspections were conducted for the Contact No. ED/2020/03 in the reporting month.

#### Complaint, Notification of Summons and Successful Prosecution

13.7 No environmental complaint was received in the reporting month. No notifications of summons and successful prosecutions were received in the reporting month.

#### Recommendations

13.8 According to the environmental audit performed in the reporting month, the following recommendations was made:

#### ED/2018/04

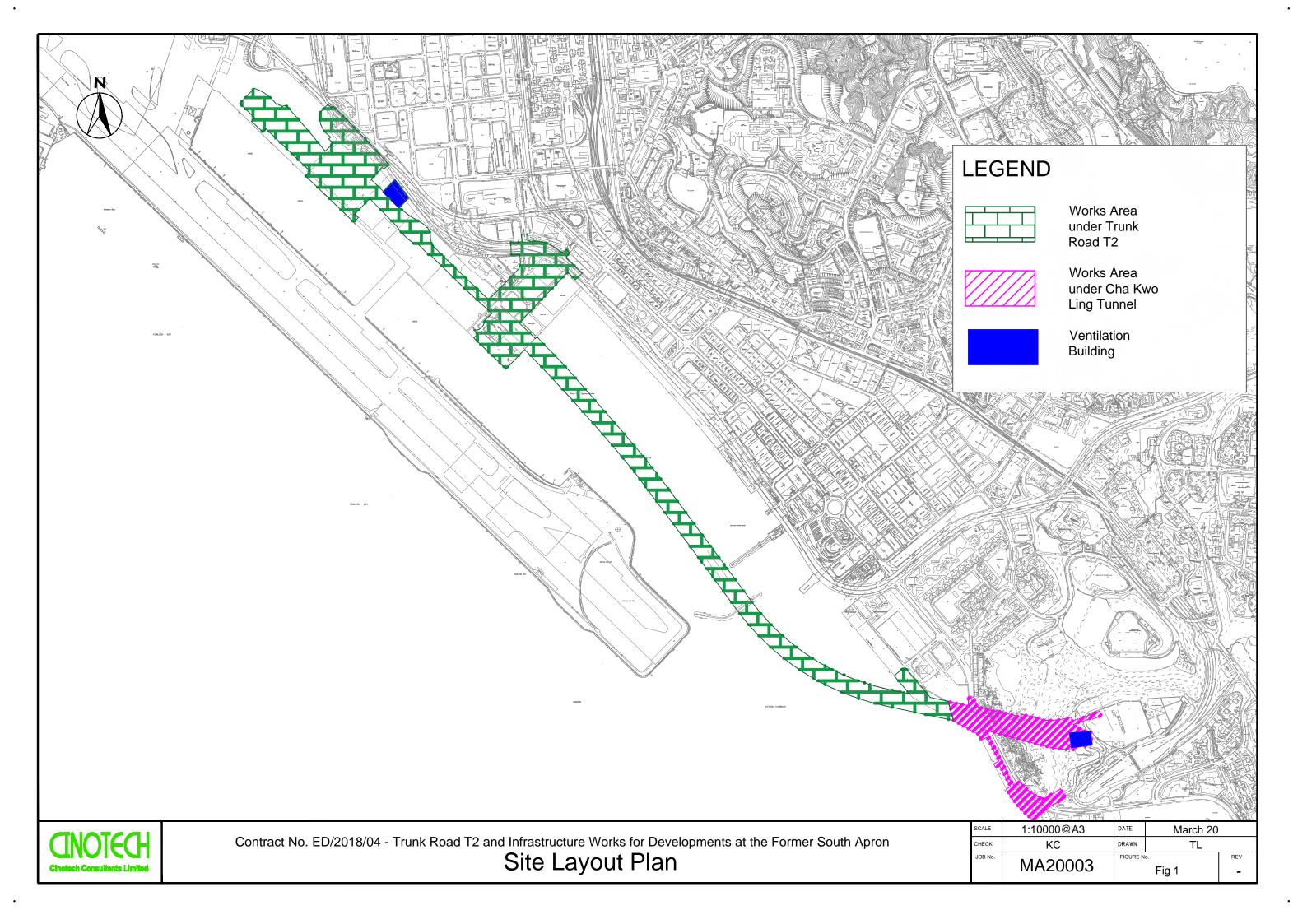
#### Air Quality

• NRMM label shall be displayed at a conspicuous position of the regulated machines on site.

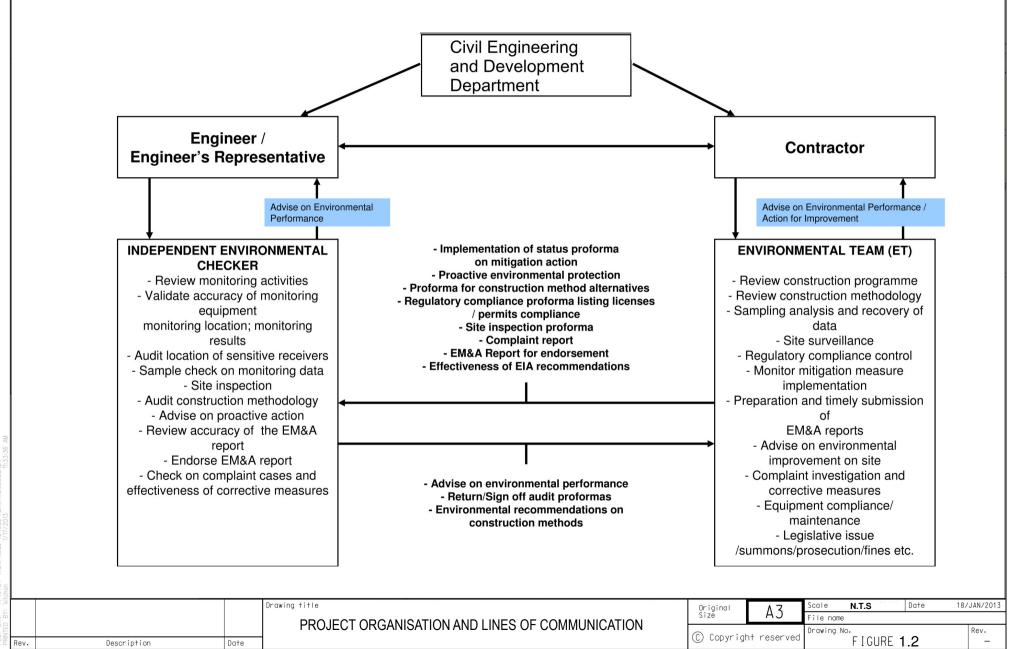
#### Waste / Chemical Management

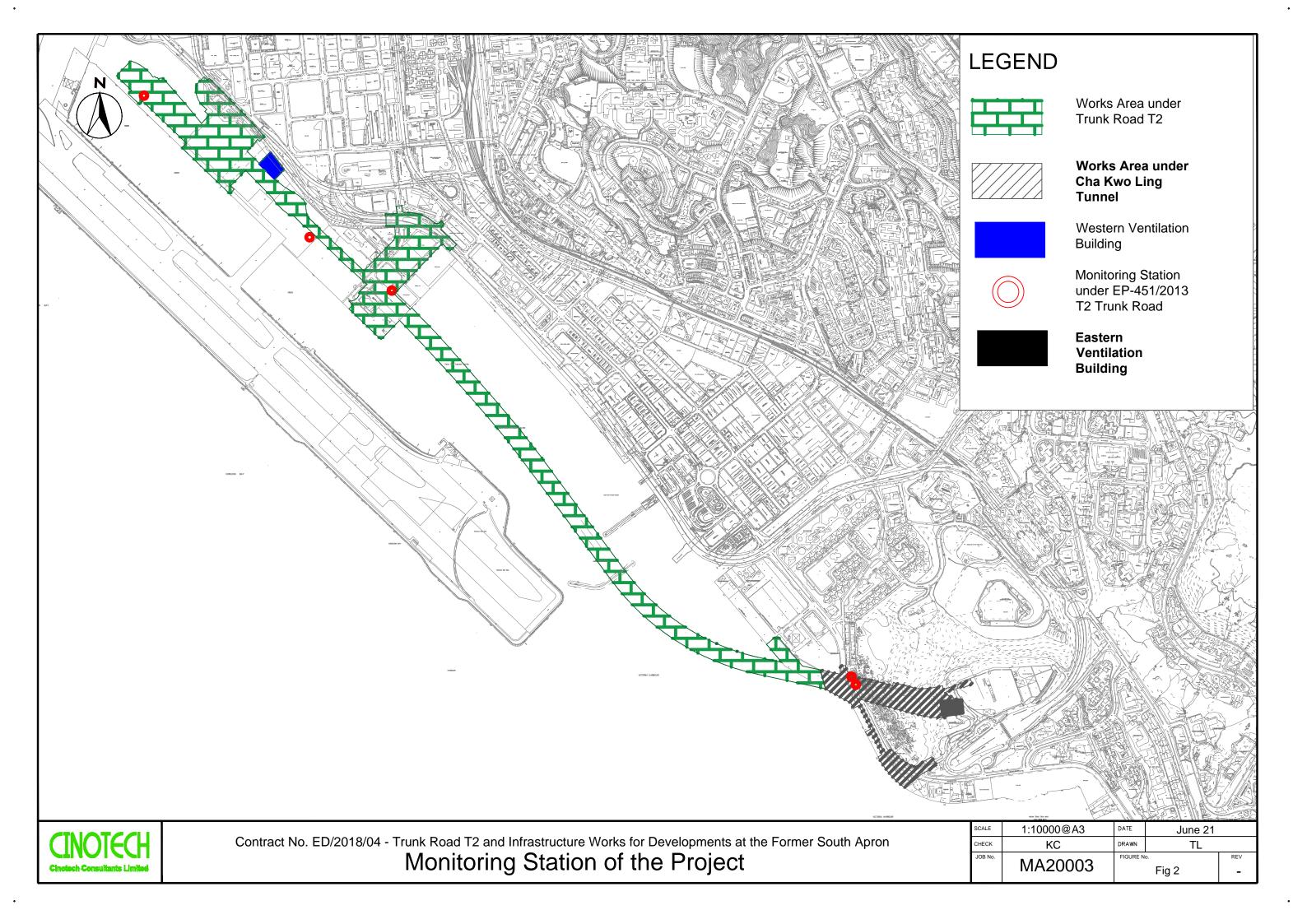
- The C&D waste should be segregated and stored in the separate containers or skip, and the site and surrounding should be kept tidy and litter free.
- Drip tray should be provided to prevent leaked oil from entering drainage system during handling of chemical.

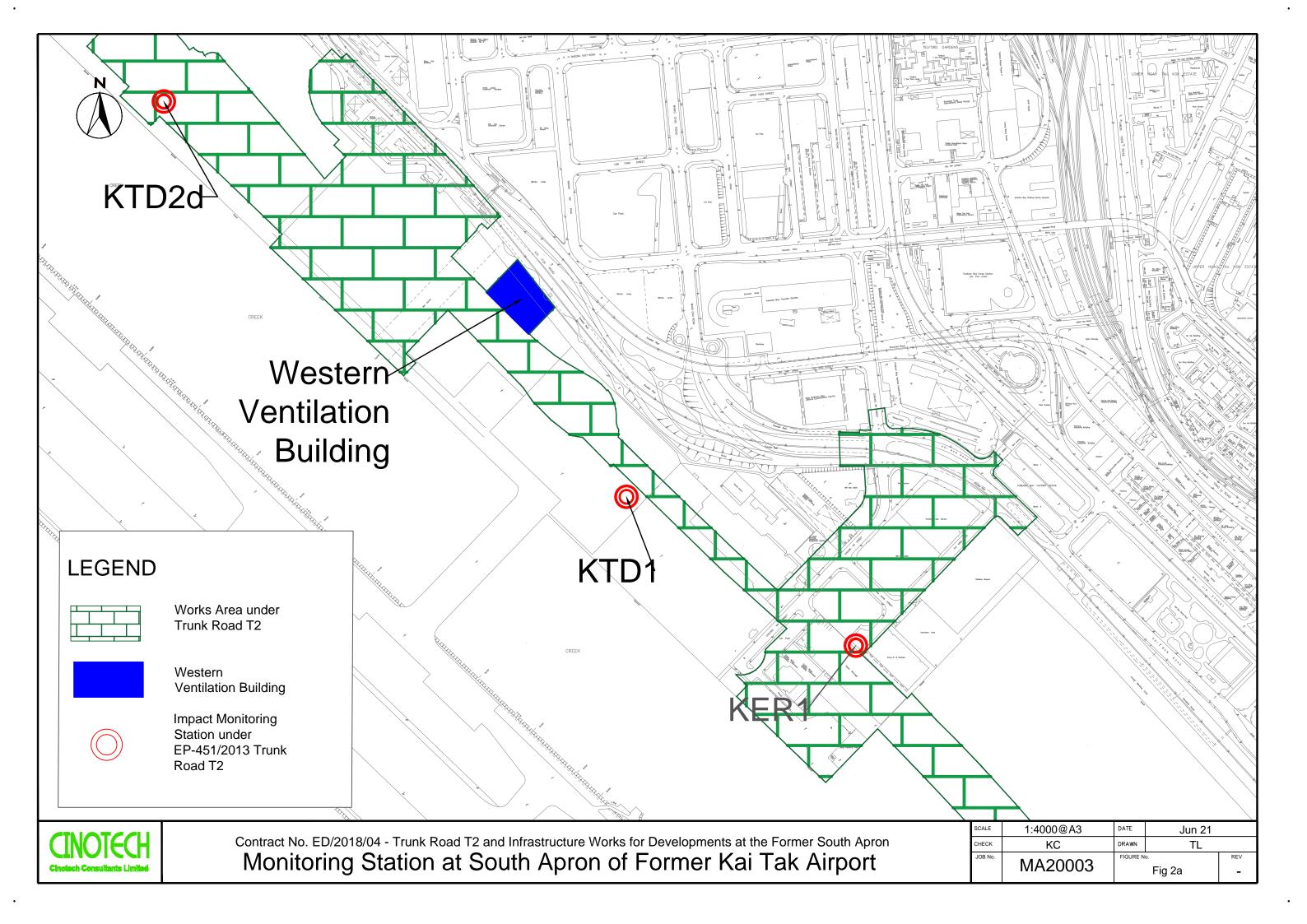
**FIGURES** 

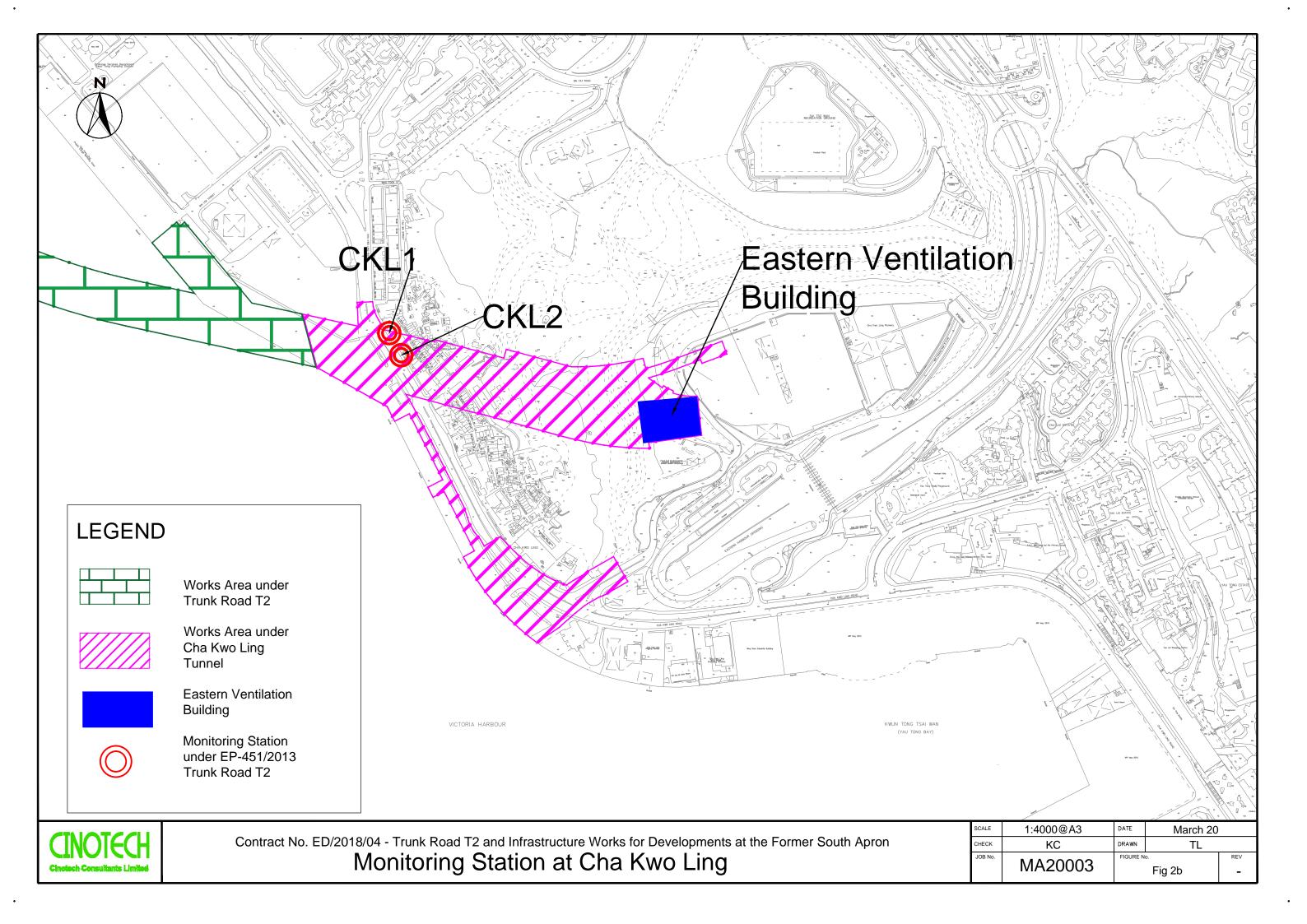












## APPENDIX A ACTION AND LIMIT LEVELS

## Appendix A - Action and Limit Levels

**Table A-1** Action and Limit Levels for 1-hour TSP (in case of complaints)

Location	Action Level, μg/m <sup>3</sup>	Limit Level, μg/m <sup>3</sup>
KTD1	285	
KTD2d	279	
KER1	295	500
CKL1	323	
CKL2	327	

Table A-2 Action and Limit Levels for 24-hour TSP

Location	Action Level, μg/m <sup>3</sup>	Limit Level, μg/m³
KTD1	177	
KTD2d	157	
KER1	172	260
CKL1	191	
CKL2	183	

Table A-3 Action and Limit Levels for Noise during Construction Period

Time Period	Action Level	Limit Level
0700-1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A) <sup>(1)</sup>

Note:

<sup>(1)</sup> If works are to be carried out during restricted hours, the conditions stipulated in the Construction Noise Permit (CNP) issued by the Noise Control Authority have to be followed.

APPENDIX B ENVIRONMENTAL MONITORING SCHEDULES

#### Trunk Road T2 and Infrastructure Works for Developments at the Former South Apron Impact Air and Noise Monitoring Schedule (October 2022)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	·		·	•		1-Oct
2-Oct	3-Oct	4-Oct	5-Oct	6-Oct	7-Oct	8-Oct
			24-hr TSP	Noise		
			24-11 151	TOISE		
9-Oct	10-Oct	11-Oct	12-Oct	13-Oct	14-Oct	15-Oct
		24-hr TSP	Noise			
		2.111.101	- 1.0.00			
16.0	15.0	10.0	10.0		41.0	
16-Oct	17-Oct	18-Oct	19-Oct	20-Oct	21-Oct	22-Oct
	24-hr TSP	Noise				24-hr TSP
23-Oct	24-Oct	25-Oct	26-Oct	27-Oct	28-Oct	29-Oct
25-001	24 000	25 000	20 000	27 000	20 000	27 000
	Noise			24-hr TSP		
30-Oct	31-Oct					

The schedule may be changed due to unforeseen circumstances (adverse weather, safety concerns, etc.)

#### Air Quality Monitoring Station

24-hr TSP

KTD1 - Centre of Excellence in Paediatrics (Children's Hospital)

KTD2d - Next to the SOR Office of Trunk Road T2 in Kai Tak Area

KER1 - Future Residential Development at Kerry Godown

CKL1 - Flat 121 Cha Kwo Ling Village

CKL2 - Flat 103 Cha Kwo Ling Village

#### Noise Monitoring Station

KTD1 - Centre of Excellence in Paediatrics (Children's Hospital)

KER1 - Future Residential Development at Kerry Godown

KTD2d - Next to the SOR Office of Trunk Road T2 in Kai Tak Area

CKL1 - Flat 121 Cha Kwo Ling Village

CKL2 - Flat 103 Cha Kwo Ling Village

The schedule may be changed due to unforeseen circumstances (adverse weather, safety concerns, etc.)

\*Noise: Noise Monitoring works in both Kai Tak and Cha Kwo Ling (KTD1, KTD2d, KER1, CKL1 and CKL2)

<sup>\*</sup>Noise: Noise Monitoring works in both Kai Tak and Cha Kwo Ling (KTD1, KTD2d, KER1, CKL1 and CKL2)

<sup>\*\*24-</sup>hr TSP:24-hr TSP Monitoring works in both Kai Tak and Cha Kwo Ling (KTD1, KTD2d, KER1, CKL1 and CKL2)

#### Trunk Road T2 and Infrastructure Works for Developments at the Former South Apron Tentative Impact Air and Noise Monitoring Schedule (November 2022)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1-Nov	2-Nov	3-Nov	4-Nov	5-Nov
			24-hr TSP	Noise		
6-Nov	7-Nov	8-Nov	9-Nov	10-Nov	11-Nov	12-Nov
		24-hr TSP	Noise			
13-Nov	14-Nov	15-Nov	16-Nov	17-Nov	18-Nov	19-Nov
	24-hr TSP	Noise				24-hr TSP
20-Nov	21-Nov	22-Nov	23-Nov	24-Nov	25-Nov	26-Nov
	Noise			24-hr TSP		
27-Nov	28-Nov	29-Nov	30-Nov			
			24-hr TSP			

The schedule may be changed due to unforeseen circumstances (adverse weather, safety concerns, etc.)

#### Air Quality Monitoring Station

24-hr TSP

KTD1 - Centre of Excellence in Paediatrics (Children's Hospital)

KTD2d - Next to the SOR Office of Trunk Road T2 in Kai Tak Area

KER1 - Future Residential Development at Kerry Godown

CKL1 - Flat 121 Cha Kwo Ling Village

CKL2 - Flat 103 Cha Kwo Ling Village

#### Noise Monitoring Station

KTD1 - Centre of Excellence in Paediatrics (Children's Hospital)

KER1 - Future Residential Development at Kerry Godown

KTD2d - Next to the SOR Office of Trunk Road T2 in Kai Tak Area  $\,$ 

CKL1 - Flat 121 Cha Kwo Ling Village

CKL2 - Flat 103 Cha Kwo Ling Village

The schedule may be changed due to unforeseen circumstances (adverse weather, safety concerns, etc.)

\*Noise: Noise Monitoring works in both Kai Tak and Cha Kwo Ling (KTD1, KTD2d, KER1, CKL1 and CKL2)

<sup>\*</sup>Noise: Noise Monitoring works in both Kai Tak and Cha Kwo Ling (KTD1, KTD2d, KER1, CKL1 and CKL2)

<sup>\*\*24-</sup>hr TSP:24-hr TSP Monitoring works in both Kai Tak and Cha Kwo Ling (KTD1, KTD2d, KER1, CKL1 and CKL2)

#### Trunk Road T2 and Infrastructure Works for Developments at the Former South Apron Tentative Impact Air and Noise Monitoring Schedule (December 2022)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1-Dec	2-Dec	3-Dec
				Noise		
4.0	5.0	( )	7.0	0.0	0.0	10.0
4-Dec	5-Dec	6-Dec	7-Dec	8-Dec	9-Dec	10-Dec
		24-hr TSP	Noise			
11-Dec	12-Dec	13-Dec	14-Dec	15-Dec	16-Dec	17-Dec
	24-hr TSP	Noise				24-hr TSP
18-Dec	19-Dec	20-Dec	21-Dec	22-Dec	23-Dec	24-Dec
				24-hr TSP	Noise	
25-Dec	26-Dec	27-Dec	28-Dec	29-Dec	30-Dec	31-Dec
			24-hr TSP	Noise		

The schedule may be changed due to unforeseen circumstances (adverse weather, safety concerns, etc.)

#### Air Quality Monitoring Station

24-hr TSP

KTD1 - Centre of Excellence in Paediatrics (Children's Hospital)

KTD2d - Next to the SOR Office of Trunk Road T2 in Kai Tak Area

KER1 - Future Residential Development at Kerry Godown

CKL1 - Flat 121 Cha Kwo Ling Village

CKL2 - Flat 103 Cha Kwo Ling Village

#### Noise Monitoring Station

KTD1 - Centre of Excellence in Paediatrics (Children's Hospital)

KER1 - Future Residential Development at Kerry Godown

KTD2d - Next to the SOR Office of Trunk Road T2 in Kai Tak Area  $\,$ 

CKL1 - Flat 121 Cha Kwo Ling Village

CKL2 - Flat 103 Cha Kwo Ling Village

The schedule may be changed due to unforeseen circumstances (adverse weather, safety concerns, etc.)

\*Noise: Noise Monitoring works in both Kai Tak and Cha Kwo Ling (KTD1, KTD2d, KER1, CKL1 and CKL2)

<sup>\*</sup>Noise: Noise Monitoring works in both Kai Tak and Cha Kwo Ling (KTD1, KTD2d, KER1, CKL1 and CKL2)

<sup>\*\*24-</sup>hr TSP:24-hr TSP Monitoring works in both Kai Tak and Cha Kwo Ling (KTD1, KTD2d, KER1, CKL1 and CKL2)

#### Trunk Road T2 and Infrastructure Works for Developments at the Former South Apron Tentative Impact Air and Noise Monitoring Schedule (January 2023)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1-Jan	2-Jan	3-Jan	4-Jan	5-Jan	6-Jan	7-Jan
		24-hr TSP	Noise			
8-Jan	9-Jan	10-Jan	11-Jan	12-Jan	13-Jan	14-Jan
	24-hr TSP	Noise				24-hr TSP
15-Jan	16-Jan	17-Jan	18-Jan	19-Jan	20-Jan	21-Jan
	Noise				24-hr TSP	
22-Jan	23-Jan	24-Jan	25-Jan	26-Jan	27-Jan	28-Jan
				24-hr TSP	Noise	
29-Jan	30-Jan	31-Jan				

The schedule may be changed due to unforeseen circumstances (adverse weather, safety concerns, etc.)

#### Air Quality Monitoring Station

24-hr TSP

KTD1 - Centre of Excellence in Paediatrics (Children's Hospital)

KTD2d - Next to the SOR Office of Trunk Road T2 in Kai Tak Area

KER1 - Future Residential Development at Kerry Godown

CKL1 - Flat 121 Cha Kwo Ling Village

CKL2 - Flat 103 Cha Kwo Ling Village

#### Noise Monitoring Station

KTD1 - Centre of Excellence in Paediatrics (Children's Hospital)

KER1 - Future Residential Development at Kerry Godown

KTD2d - Next to the SOR Office of Trunk Road T2 in Kai Tak Area  $\,$ 

CKL1 - Flat 121 Cha Kwo Ling Village

CKL2 - Flat 103 Cha Kwo Ling Village

The schedule may be changed due to unforeseen circumstances (adverse weather, safety concerns, etc.)

\*Noise: Noise Monitoring works in both Kai Tak and Cha Kwo Ling (KTD1, KTD2d, KER1, CKL1 and CKL2)

<sup>\*</sup>Noise: Noise Monitoring works in both Kai Tak and Cha Kwo Ling (KTD1, KTD2d, KER1, CKL1 and CKL2)

<sup>\*\*24-</sup>hr TSP:24-hr TSP Monitoring works in both Kai Tak and Cha Kwo Ling (KTD1, KTD2d, KER1, CKL1 and CKL2)

APPENDIX C COPIES OF CALIBRATION CERTIFICATES FOR AIR QUALITY MONITORING

#### 5-POINT CALIBRATION DATA SHEET



File No. MA20003/18/0016 CKL 1 - Flat 121 Cha Kwo Ling Village Project No. 5-Sep-22 Next Due Date: 5-Nov-22 Operator: SK Date: Model No.: <u>TE</u> 5170 Serial No. 0723 Equipment No.: A-01-18 **Ambient Condition** Temperature, Ta (K) 304.1 Pressure, Pa (mmHg) 753.4 **Orifice Transfer Standard Information** 0.05922 Intercept, bc -0.02420 Serial No. 3864 Slope, mc mc x Qstd + bc =  $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ Last Calibration Date: 31-Jan-22 Qstd =  $\{ [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} -bc \} / mc$ Next Calibration Date: 31-Jan-23 **Calibration of TSP Sampler** Orfice HVS Calibration  $[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$  **Y**- $\Delta H$  (orifice), Qstd (CFM)  $\Delta W$  (HVS), in. Point  $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ in. of water X - axis of water axis 12.7 3.51 59.72 9.7 3.07 2 10.0 3.12 53.04 7.7 2.73 3 8.3 2.84 48.36 5.5 2.31 4 6.0 2.41 41.18 3.7 1.90 1.7 5 3.3 1.79 30.64 1.29 By Linear Regression of Y on X Slope, mw = 0.0625Intercept, bw : -0.6530 0.9975 Correlation coefficient\* = \*If Correlation Coefficient < 0.990, check and recalibrate. **Set Point Calculation** From the TSP Field Calibration Curve, take Qstd = 43 CFM From the Regression Equation, the "Y" value according to mw x Ostd + bw =  $[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Therefore, Set Point;  $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$  4.26 Remarks: Signature: Date: 5-Sep-22

Signature: Date: 5-Sep-22 Conducted by: Wong Shing Kwai Checked by: Henry Leung

#### 5-POINT CALIBRATION DATA SHEET



File No. MA20003/55/0016

Project No.	CKL 2 - Flat 10	3 Cha Kwo Ling	Village				
Date:	5-Se	5-Sep-22 Next Due Date: 5-Nov-22		Nov-22	Operator:	SK	
Equipment No.:	A-0	1-55	Model No.:	TE 5170		Serial No.	1956
			Ambient C	ondition			
Temperatur	re, Ta (K)	304.1	Pressure, Pa			753.4	
•	, , , , , ,		,	· · · · · ·			
		Or	ifice Transfer Star	ndard Informa	ation		
Serial	No.	3864	Slope, mc	0.05922	Intercept		-0.02420
Last Calibra	ation Date:	31-Jan-22			$c = [\Delta H \times (Pa/760]]$		
Next Calibra	ation Date:	31-Jan-23		$Qstd = \{ [\Delta H \ x] \}$	(Pa/760) x (298/	$[\Gamma a]^{1/2}$ -bc} / m	c
		•	Calibration of	<b>ISP Sampler</b>	T	TTT	
Calibration Point	ΔH (orifice), in. of water		fice 50) x (298/Ta)] <sup>1/2</sup>	Qstd (CFM) X - axis	ΔW (HVS), in.		60) x (298/Ta)] <sup>1/2</sup> <b>Y-axis</b>
1	12.7		3.51	59.72	9.7		3.07
2	10.7		3.22	54.85	7.5		2.70
3	8.5		2.87	48.93	5.7		2.35
4	5.2		2.25	38.36	3.1		1.74
5	2.8		1.65	28.26	1.7		1.29
By Linear Regr Slope, mw = Correlation of *If Correlation C	0.0564 coefficient* =	0	.9966	Intercept, bw :	-0.368	3	
			Set Point Ca	alculation			
From the TSP Fi From the Regres Therefore, Se	sion Equation, th	mw x Q			98/Ta)] <sup>1/2</sup>		
Remarks:  Conducted by:	Wong Sh	ing Kwai	Signature:	<i>\</i> ?	<b>X</b> -	Date:	5-Sep-22
Checked by:	Henry	Leung	Signature:	-lan	men	Date:	5-Sep-22

## 5-POINT CALIBRATION DATA SHEET



File No. MA20003/04/0014

Project No.	KER 1 - Future	Residential Deve	elopment at Kerry (	Godown			
Date:	10-S	ep-22	Next Due Date: 10-Nov-22		Operator:	SK	
Equipment No.:	A-0	01-04	Model No.:	TE	TE 5170		10595
			Ambient C	ondition			
Temperatu	re, Ta (K)	301.9	Pressure, Pa			758.6	
•	•			, ,			
		Or	ifice Transfer Star	ndard Informa	tion		
Serial	l No.	3864	Slope, mc	0.05922	Intercept		-0.02420
Last Calibra	ation Date:	31-Jan-22			$c = [\Delta H \times (Pa/760)]$		
Next Calibra	ation Date:	31-Jan-23	(	$\mathbf{Qstd} = \{ [\Delta \mathbf{H} \ \mathbf{x} ] \}$	(Pa/760) x (298/7	Γa)] <sup>1/2</sup> -bc} / m	c
	ı		Calibration of	ΓSP Sampler			
Calibration		Or	fice			HVS	1 /0
Point	ΔH (orifice), in. of water	[ΔH x (Pa/76	(60) x (298/Ta)] <sup>1/2</sup>	Qstd (CFM) X - axis	ΔW (HVS), in. of water		50) x (298/Ta)] <sup>1/2</sup> - <b>axis</b>
1	13.7		3.67	62.45	10.1	3.15	
2	11.0		3.29	56.00	7.6		2.74
3	8.8		2.94	50.13	6.1		2.45
4	5.8		2.39	40.78	3.7		1.91
5	3.6		1.88	32.21	2.3		1.51
By Linear Regr Slope, mw =		_	.9 <b>988</b>	Intercept, bw :	-0.276	50	
		90, check and rec					
			Set Point Ca	alculation			
		Curve, take Qstd ne "Y" value acco	= 43 CFM				
			$\mathbf{pstd} + \mathbf{bw} = [\Delta \mathbf{W} \ \mathbf{x}]$		<b>98/Ta</b> )] <sup>1/2</sup>		
Therefore, Se	et Point; W = ( m	nw x Qstd + bw )	<sup>2</sup> x ( 760 / Pa ) x ( 7	Γa / 298 ) =	4.32		
Remarks:							
				. t.			
Conducted by:	Wong Sh	ning Kwai	Signature:		<u> </u>	Date:	10-Sep-22
Checked by:	Henry	Leung	Signature:	\-Pa.	2 Mon 7	Date:	10-Sep-22

## 5-POINT CALIBRATION DATA SHEET



File No. MA20003/44/0014

Project No.	KTD1 - Centre	of Excellence in	Paediatrics (Childr	en's Hospital)			
Date:	10-S	ep-22	Next Due Date:	ue Date: 10-Nov-22		Operator:	SK
Equipment No.:	A-0	01-44	Model No.:	TE	TE-5170		1316
			Ambient C	ondition			
Temperatu	re, Ta (K)	301.9	Pressure, Pa			758.6	
•	•						
		Or	ifice Transfer Star	ndard Informa	tion		
Serial	l No.	3864	Slope, mc	0.05922	Intercept		-0.02420
Last Calibra	ation Date:	31-Jan-22			$c = [\Delta H \times (Pa/760]]$		
Next Calibra	ation Date:	31-Jan-23	(	$Qstd = \{ [\Delta H \ x] $	(Pa/760) x (298/7	Γa)] <sup>1/2</sup> -bc} / m	c
	I		Calibration of 7	<b>ISP Sampler</b>		******	
Calibration	ΔH (orifice),		fice	Octd (CEM)	AW (IIVS) :	HVS	50) x (298/Ta)] <sup>1/2</sup>
Point	in. of water	[ΔH x (Pa/76	(60) x (298/Ta)] <sup>1/2</sup>	Qstd (CFM) <b>X - axis</b>	$\Delta$ W (HVS), in. of water		50) x (298/1a)] <b>'-axis</b>
1	13.6		3.66	62.22	10.3		3.19
2	11.4		3.35	57.00	8.0		2.81
3	9.0		2.98	50.69	6.1		2.45
4	6.2		2.47	42.14	4.0		1.99
5	3.7		1.91	32.65	2.4		1.54
By Linear Regr Slope , mw = Correlation	cession of Y on Y  0.0552  coefficient* =	_	9 <b>974</b>	Intercept, bw =	-0.306	66	
		90, check and rec		•			
			Set Point Ca	alculation			
		Curve, take Qstd ne "Y" value acco	= 43 CFM				
		mw x Q	$\mathbf{pstd} + \mathbf{bw} = [\mathbf{\Delta W} \ \mathbf{x}]$	(Pa/760) x (29	$[0.8]^{1/2}$		
Therefore, Se	et Point; W = ( m	nw x Qstd + bw)	<sup>2</sup> x (760 / Pa) x (7	Γa / 298 ) =	4.33		
Remarks:							
Conducted by:	Wong Sh	ning Kwai	Signature:	<i>X</i> ?	<u> </u>	Date:	10-Sep-22
Checked by:	Henry	Leung	Signature:	1-Pa	- X27	Date:	10-Sep-22

# **High-Volume TSP Sampler** 5-POINT CALIBRATION DATA SHEET



File No. MA20003/41/0014

Project No.	KTD 2D - Next t	to the SOR Offic	ce of Trunk Road T	2 in Kai Tak A	rea		
Date:	10-Se	p-22	Next Due Date: 10-Nov-22				SK
Equipment No.:	A-01	-41	Model No.:	TE	E 5170	Serial No.	5280
			Ambient C	ondition			
Temperatur	re, Ta (K)	301.9	Pressure, Pa			758.6	
G : 1	V.		ifice Transfer Star			1	0.02420
Serial		3864	Slope, mc	0.05922	Intercept $c = [\Delta H \times (Pa/760)]$		-0.02420
Last Calibra Next Calibra		31-Jan-22 31-Jan-23			$C = [\Delta H \times (Fa)/100]$ $(Pa/760) \times (298/7)$		
Next Callor	ation Date.				(1 a/ 100) X (200)	(a) -bcj / mc	<u> </u>
		•	Calibration of '	TSP Sampler			
Calibration		Or	fice	•		HVS	
Point	ΔH (orifice), in. of water	[ΔH x (Pa/76	(0) x (298/Ta)] <sup>1/2</sup>	Qstd (CFM) X - axis	ΔW (HVS), in. of water		0) x (298/Ta)] <sup>1/2</sup> axis
1	13.7		3.67	62.45	10.6	3	.23
2	10.9		3.28	55.75	8.8	2	.94
3	9.0		2.98	50.69	6.5	2	53
4	6.5		2.53	43.14	4.6	2	.13
5	3.7		1.91	32.65	2.4	1	.54
-	ession of Y on X						
Slope, mw =		•		Intercept, bw =	-0.363	6	
	coefficient* =	-	.9976	<u>-</u>			
*If Correlation C	Coefficient < 0.99	0, check and rec	alibrate.				
			Set Point Ca	alculation			
From the TSP Fi	eld Calibration C	urve, take Qstd	= 43 CFM				
From the Regress	sion Equation, the	e "Y" value acco	ording to				
		mw x Q	$\mathbf{pstd} + \mathbf{bw} = [\mathbf{\Delta W} \ \mathbf{x}]$	(Pa/760) x (29	$[98/Ta)]^{1/2}$		
TOIL C. C.	· D : · W · /	0.41.4	<sup>2</sup> x ( 760 / Pa ) x ( 7	E /200.)	4.61		
Therefore, Se	et Point; w = ( my	w x Qsta + bw )	x ( /60 / Pa ) x (	1a / 298 ) =	4.61		
Remarks:							
·							
				sr.			
Conducted by:	Wong Shi	ng Kwai	Signature:		<u> </u>	Date:	10-Sep-22
Checked by:	Henry 1	Leung	Signature:	\-len	y Kong	Date:	10-Sep-22





# RECALIBRATION DUE DATE:

January 31, 2023

# Certificate of Calibration

**Calibration Certification Information** 

Cal. Date: January 31, 2022

Rootsmeter S/N: 438320

**Ta:** 294 **Pa:** 752.6

°K

Operator: Jim Tisch

ım iiscn

mm Hg

Calibration Model #: TE-5025A Calibrator S/N: 3864

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4490	3.2	2.00
2	3	4	1	1.0320	6.4	4.00
3	5	6	1	0.9160	7.9	5.00
4	7	8	1	0.8730	8.8	5.50
5	9	10	1	0.7230	12.7	8.00

	Data Tabulation				
Vstd	Qstd	$\sqrt{\Delta H \left(\frac{Pa}{Pstd}\right) \left(\frac{Tstd}{Ta}\right)}$		Qa	√∆H(Ta/Pa)
(m3)	(x-axis)	(y-axis)	Va	(x-axis)	(y-axis)
0.9995	0.6898	1.4169	0.9957	0.6872	0.8839
0.9952	0.9643	2.0037	0.9915	0.9608	1.2500
0.9932	1.0843	2.2402	0.9895	1.0802	1.3976
0.9920	1.1363	2.3496	0.9883	1.1321	1.4658
0.9868	1.3649	2.8337	0.9831	1.3598	1.7678
	m=	2.09281		m=	1.31048
<b>QSTD</b>	b=	-0.02426	QA [	b=	-0.01514
	r=	0.99993	,	r=	0.99993

	Calculatio	ns	
Vstd=	ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta)	Va=	ΔVol((Pa-ΔP)/Pa)
<b>Qstd=</b> Vstd/ΔTime <b>Qa=</b> Va/ΔTime		Va/ΔTime	
	For subsequent flow ra	te calculatio	ns:
Qstd=	$1/m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right)-b\right)$	Qa=	$1/m\left(\left(\sqrt{\Delta H(Ta/Pa)}\right)-b\right)$

	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 ab	solute 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

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FAX: (513)467-9009



## **Certificate of Calibration - Wind Monitoring Station**

Description: Yau Lai Estate, Bik Lai House

Manufacturer: <u>Davis Instruments</u>

Model No.: <u>Davis7440</u>

Serial No.: <u>MC01010A44</u>

Equipment No.: SA-03-04

Date of Calibration 19-Aug-2022

Next Due Date 19-Feb-2023

#### 1. Performance check of Wind Speed

Wind Sp	peed, m/s	Difference D (m/s)
Wind Speed Reading (V1)	Anemometer Value (V2)	D = V1 - V2
0.0	0.0	0.0
1.5	1.5	0.0
2.5	2.6	-0.1
4.0	4.0	0.0

#### 2. Performance check of Wind Direction

Wind Direction (°)		Difference D (°)
Wind Direction Reading (W1)	Marine Compass Value (W2)	D = W1 - W2
0	0	0.0
90	90	0.0
180	180	0.0
270	270	0.0

#### **Test Specification:**

- 1. Performance Wind Speed Test The wind meter was on-site calibrated against the anemometer
- 2. Performance Wind Direction Test The wind meter was on-site calibrated against the marine compass at four direction

Calibrated by:

Wong Shing Kwai

Approved by:

Henry Leung

### APPENDIX D WEATHER INFORMATION

Appendix D - Weather Conditions During Impact Monitoring Period

Date	Mean Air Temperature (°C) <sup>1</sup>	Mean Relative Humidity $\left(\%\right)^2$	Precipitation (mm) <sup>3</sup>
1-Oct-22	27.7	86	2.6
2-Oct-22	28.9	81	Trace
3-Oct-22	29.5	76	0.0
4-Oct-22	29.4	76	0.0
5-Oct-22	29.1	75	Trace
6-Oct-22	28.9	74	Trace
7-Oct-22	28.3	77	22.8
8-Oct-22	27.7	71	Trace
9-Oct-22	27.1	71	4.8
10-Oct-22	24.0	51	0.0
11-Oct-22	24.1	48	0.0
12-Oct-22	25.2	50	0.0
13-Oct-22	26.0	60	0.0
14-Oct-22	26.9	66	0.0
15-Oct-22	27.5	53	0.0
16-Oct-22	28.3	46	0.0
17-Oct-22	27.2	45	Trace
18-Oct-22	20.9	67	19.7
19-Oct-22	23.0	54	0.0
20-Oct-22	24.3	64	0.0
21-Oct-22	25.2	68	0.0
22-Oct-22	26.6	67	Trace
23-Oct-22	26.5	71	0.0
24-Oct-22	25.2	68	0.0
25-Oct-22	23.8	63	0.0
26-Oct-22	23.9	66	0.0
27-Oct-22	24.6	70	0.0
28-Oct-22	25.5	68	0.0
29-Oct-22	25.7	65	0.0
30-Oct-22	25.4	57	0.0
31-Oct-22	25.4	50	0.0

(Reporting Month:October 2022)

Remarks:

Source - Hong Kong Observatory

 $<sup>^{1\</sup>text{--}3}Retrieved$  from Manned Weather Station (Hong Kong Observatory) (22°18'07" N, 114°10'27" E)

Appendix D - Weather Conditions During Impact Monitoring Period					
	Wind Speed and Directions				
Date	Time	Direction	Wind Speed m-s		
1 Oct 2022	12:00 AM	NE	0.3		
1 Oct 2022	1:00 AM	ENE	0.4		
1 Oct 2022	2:00 AM	ENE	0.4		
1 Oct 2022	3:00 AM	Е	0.2		
1 Oct 2022	4:00 AM	NE	0.2		
1 Oct 2022	5:00 AM	NNE	0.2		
1 Oct 2022	6:00 AM	NNE	0.2		
1 Oct 2022	7:00 AM	NNE	0.3		
1 Oct 2022	8:00 AM	NE	1.2		
1 Oct 2022	9:00 AM	NNE	0.4		
1 Oct 2022	10:00 AM	NE	0.5		
1 Oct 2022	11:00 AM	Е	0.4		
1 Oct 2022	12:00 PM	ESE	0.3		
1 Oct 2022	1:00 PM	NW	0.4		
1 Oct 2022	2:00 PM	NE	0.4		
1 Oct 2022	3:00 PM	NE	0.2		
1 Oct 2022	4:00 PM	ENE	0.2		
1 Oct 2022	5:00 PM	NNE	0.2		
1 Oct 2022	6:00 PM	NNE	0.2		
1 Oct 2022	7:00 PM	NNE	0.3		
1 Oct 2022	8:00 PM	ENE	0.3		
1 Oct 2022	9:00 PM	Е	0.3		
1 Oct 2022	10:00 PM	NE	0.3		
1 Oct 2022	11:00 PM	ENE	0.3		
2 Oct 2022	12:00 AM	Е	0.4		
2 Oct 2022	1:00 AM	Е	0.2		
2 Oct 2022	2:00 AM	ENE	0.2		
2 Oct 2022	3:00 AM	ENE	0.2		

Appendix D - Weather Conditions During Impact Monitoring Period				
	Wind Speed and Directions			
Date	Time	Direction	Wind Speed m-s	
2 Oct 2022	4:00 AM	ENE	0.2	
2 Oct 2022	5:00 AM	ENE	0.2	
2 Oct 2022	6:00 AM	ENE	0.2	
2 Oct 2022	7:00 AM	ENE	0.2	
2 Oct 2022	8:00 AM	ENE	0.2	
2 Oct 2022	9:00 AM	ENE	0.2	
2 Oct 2022	10:00 AM	NE	0.2	
2 Oct 2022	11:00 AM	NNW	0.2	
2 Oct 2022	12:00 PM	ENE	0.3	
2 Oct 2022	1:00 PM	ESE	0.3	
2 Oct 2022	2:00 PM	ENE	0.2	
2 Oct 2022	3:00 PM	ESE	0.2	
2 Oct 2022	4:00 PM	SE	0.1	
2 Oct 2022	5:00 PM	S	0.3	
2 Oct 2022	6:00 PM	SE	0.2	
2 Oct 2022	7:00 PM	ENE	0.3	
2 Oct 2022	8:00 PM	Е	0.6	
2 Oct 2022	9:00 PM	ENE	0.2	
2 Oct 2022	10:00 PM	ENE	0.1	
2 Oct 2022	11:00 PM	Е	0.1	
3 Oct 2022	12:00 AM	Е	0.1	
3 Oct 2022	1:00 AM	NE	0.1	
3 Oct 2022	2:00 AM	NE	0.1	
3 Oct 2022	3:00 AM	NE	0.1	
3 Oct 2022	4:00 AM	NNE	0.1	
3 Oct 2022	5:00 AM	ENE	0.1	
3 Oct 2022	6:00 AM	NE	0.1	
3 Oct 2022	7:00 AM	ENE	0.1	

Appendix D - Weather Conditions During Impact Monitoring Period					
	Wind Speed and Directions				
Date	Time	Direction	Wind Speed m-s		
3 Oct 2022	8:00 AM	NNE	0.1		
3 Oct 2022	9:00 AM	NE	0.1		
3 Oct 2022	10:00 AM	Е	0.1		
3 Oct 2022	11:00 AM	ENE	0.2		
3 Oct 2022	12:00 PM	NE	0.2		
3 Oct 2022	1:00 PM	ENE	0.2		
3 Oct 2022	2:00 PM	SW	0.3		
3 Oct 2022	3:00 PM	S	0.3		
3 Oct 2022	4:00 PM	SE	0.1		
3 Oct 2022	5:00 PM	ESE	0.1		
3 Oct 2022	6:00 PM	ESE	0.1		
3 Oct 2022	7:00 PM	NE	0.1		
3 Oct 2022	8:00 PM	NE	0.1		
3 Oct 2022	9:00 PM	NE	0.1		
3 Oct 2022	10:00 PM	ENE	0.2		
3 Oct 2022	11:00 PM	ENE	1.1		
4 Oct 2022	12:00 AM	ENE	0.8		
4 Oct 2022	1:00 AM	ENE	0.7		
4 Oct 2022	2:00 AM	ENE	0.1		
4 Oct 2022	3:00 AM	ENE	0.1		
4 Oct 2022	4:00 AM	NE	0.3		
4 Oct 2022	5:00 AM	ENE	0.2		
4 Oct 2022	6:00 AM	ENE	0.2		
4 Oct 2022	7:00 AM	ENE	0.1		
4 Oct 2022	8:00 AM	NE	0.6		
4 Oct 2022	9:00 AM	ENE	0.2		
4 Oct 2022	10:00 AM	WNW	0.7		
4 Oct 2022	11:00 AM	W	0.1		

Appendix D - Weather Conditions During Impact Monitoring Period					
	Wind Speed and Directions				
Date	Time	Direction	Wind Speed m-s		
4 Oct 2022	12:00 PM	SE	0.1		
4 Oct 2022	1:00 PM	WSW	0.7		
4 Oct 2022	2:00 PM	SW	0.3		
4 Oct 2022	3:00 PM	SW	0.5		
4 Oct 2022	4:00 PM	W	0.1		
4 Oct 2022	5:00 PM	W	0.1		
4 Oct 2022	6:00 PM	SW	0.1		
4 Oct 2022	7:00 PM	SSW	0.1		
4 Oct 2022	8:00 PM	Е	0.1		
4 Oct 2022	9:00 PM	WSW	0.1		
4 Oct 2022	10:00 PM	SW	0.1		
4 Oct 2022	11:00 PM	SW	0.1		
5 Oct 2022	12:00 AM	NNE	0.1		
5 Oct 2022	1:00 AM	NE	0.1		
5 Oct 2022	2:00 AM	NE	0.1		
5 Oct 2022	3:00 AM	NE	0.1		
5 Oct 2022	4:00 AM	NE	0.1		
5 Oct 2022	5:00 AM	N	0.1		
5 Oct 2022	6:00 AM	SSW	0.1		
5 Oct 2022	7:00 AM	NE	0.1		
5 Oct 2022	8:00 AM	S	0.1		
5 Oct 2022	9:00 AM	NE	0.1		
5 Oct 2022	10:00 AM	SSE	0.1		
5 Oct 2022	11:00 AM	ESE	0.2		
5 Oct 2022	12:00 PM	NE	0.3		
5 Oct 2022	1:00 PM	ENE	0.2		
5 Oct 2022	2:00 PM	ENE	0.3		
5 Oct 2022	3:00 PM	ENE	0.2		

Appendix D - Weather Conditions During Impact Monitoring Period				
Wind Speed and Directions				
Date	Time	Direction	Wind Speed m-s	
5 Oct 2022	4:00 PM	Е	0.1	
5 Oct 2022	5:00 PM	ENE	0.1	
5 Oct 2022	6:00 PM	Е	0.2	
5 Oct 2022	7:00 PM	ENE	0.1	
5 Oct 2022	8:00 PM	ESE	0.1	
5 Oct 2022	9:00 PM	NE	0.1	
5 Oct 2022	10:00 PM	ENE	0.1	
5 Oct 2022	11:00 PM	ENE	0.1	
6 Oct 2022	12:00 AM	Е	0.1	
6 Oct 2022	1:00 AM	NE	0.1	
6 Oct 2022	2:00 AM	NNE	0.1	
6 Oct 2022	3:00 AM	NNE	0.1	
6 Oct 2022	4:00 AM	NNE	0.4	
6 Oct 2022	5:00 AM	NE	0.1	
6 Oct 2022	6:00 AM	NNE	0.2	
6 Oct 2022	7:00 AM	NE	0.9	
6 Oct 2022	8:00 AM	Е	0.1	
6 Oct 2022	9:00 AM	ESE	0.2	
6 Oct 2022	10:00 AM	NW	0.3	
6 Oct 2022	11:00 AM	NE	0.3	
6 Oct 2022	12:00 PM	NE	0.1	
6 Oct 2022	1:00 PM	ENE	0.1	
6 Oct 2022	2:00 PM	NNE	0.1	
6 Oct 2022	3:00 PM	NNE	0.1	
6 Oct 2022	4:00 PM	NNE	0.2	
6 Oct 2022	5:00 PM	ENE	0.1	
6 Oct 2022	6:00 PM	Е	0.4	
6 Oct 2022	7:00 PM	NE	0.2	

Appendix D - Weather Conditions During Impact Monitoring Period					
	Wind Speed and Directions				
Date	Time	Direction	Wind Speed m-s		
6 Oct 2022	8:00 PM	NE	0.2		
6 Oct 2022	9:00 PM	N	0.2		
6 Oct 2022	10:00 PM	Е	0.8		
6 Oct 2022	11:00 PM	NE	0.2		
7 Oct 2022	12:00 AM	N	0.5		
7 Oct 2022	1:00 AM	ENE	0.9		
7 Oct 2022	2:00 AM	NE	0.4		
7 Oct 2022	3:00 AM	NNE	0.2		
7 Oct 2022	4:00 AM	ENE	0.3		
7 Oct 2022	5:00 AM	N	0.2		
7 Oct 2022	6:00 AM	NE	0.2		
7 Oct 2022	7:00 AM	N	1.8		
7 Oct 2022	8:00 AM	NNE	0.8		
7 Oct 2022	9:00 AM	NE	0.7		
7 Oct 2022	10:00 AM	N	0.1		
7 Oct 2022	11:00 AM	ENE	0.1		
7 Oct 2022	12:00 PM	ENE	0.3		
7 Oct 2022	1:00 PM	N	0.2		
7 Oct 2022	2:00 PM	NW	0.2		
7 Oct 2022	3:00 PM	NNE	0.1		
7 Oct 2022	4:00 PM	NNE	0.6		
7 Oct 2022	5:00 PM	NNE	0.2		
7 Oct 2022	6:00 PM	ENE	0.7		
7 Oct 2022	7:00 PM	NE	0.4		
7 Oct 2022	8:00 PM	N	0.7		
7 Oct 2022	9:00 PM	NNE	0.2		
7 Oct 2022	10:00 PM	NNE	0.1		
7 Oct 2022	11:00 PM	ENE	0.1		

Appendix D - Weather Conditions During Impact Monitoring Period			
Wind Speed and Directions			
Date	Time	Direction	Wind Speed m-s
8 Oct 2022	12:00 AM	NE	0.1
8 Oct 2022	1:00 AM	NNE	0.2
8 Oct 2022	2:00 AM	ENE	1.5
8 Oct 2022	3:00 AM	ENE	0.1
8 Oct 2022	4:00 AM	NE	1.5
8 Oct 2022	5:00 AM	N	0.9
8 Oct 2022	6:00 AM	NE	0.1
8 Oct 2022	7:00 AM	NE	0.2
8 Oct 2022	8:00 AM	SE	0.2
8 Oct 2022	9:00 AM	Е	0.2
8 Oct 2022	10:00 AM	ENE	0.3
8 Oct 2022	11:00 AM	ENE	0.7
8 Oct 2022	12:00 PM	NNW	2.5
8 Oct 2022	1:00 PM	NNE	0.8
8 Oct 2022	2:00 PM	ENE	0.2
8 Oct 2022	3:00 PM	NNE	0.1
8 Oct 2022	4:00 PM	NE	0.3
8 Oct 2022	5:00 PM	NE	0.2
8 Oct 2022	6:00 PM	ENE	1.8
8 Oct 2022	7:00 PM	ENE	0.8
8 Oct 2022	8:00 PM	NNE	0.7
8 Oct 2022	9:00 PM	ENE	0.1
8 Oct 2022	10:00 PM	N	0.1
8 Oct 2022	11:00 PM	NNE	0.3
9 Oct 2022	12:00 AM	Е	0.2
9 Oct 2022	1:00 AM	N	0.2
9 Oct 2022	2:00 AM	ESE	0.1
9 Oct 2022	3:00 AM	NE	0.6

Appendix D - Weather Conditions During Impact Monitoring Period			
Wind Speed and Directions			
Date	Time	Direction	Wind Speed m-s
9 Oct 2022	4:00 AM	ENE	0.2
9 Oct 2022	5:00 AM	ENE	0.7
9 Oct 2022	6:00 AM	Е	0.1
9 Oct 2022	7:00 AM	NE	1.0
9 Oct 2022	8:00 AM	NNE	0.1
9 Oct 2022	9:00 AM	NNE	1.4
9 Oct 2022	10:00 AM	NNE	0.1
9 Oct 2022	11:00 AM	NE	0.3
9 Oct 2022	12:00 PM	NNE	0.3
9 Oct 2022	1:00 PM	NE	0.4
9 Oct 2022	2:00 PM	Е	0.1
9 Oct 2022	3:00 PM	ESE	0.2
9 Oct 2022	4:00 PM	NW	0.1
9 Oct 2022	5:00 PM	NE	0.1
9 Oct 2022	6:00 PM	NE	0.1
9 Oct 2022	7:00 PM	ENE	0.1
9 Oct 2022	8:00 PM	NNE	0.3
9 Oct 2022	9:00 PM	NNE	0.2
9 Oct 2022	10:00 PM	NNE	0.1
9 Oct 2022	11:00 PM	ENE	0.2
10 Oct 2022	12:00 AM	Е	0.1
10 Oct 2022	1:00 AM	NE	0.1
10 Oct 2022	2:00 AM	NNE	0.1
10 Oct 2022	3:00 AM	NE	0.1
10 Oct 2022	4:00 AM	NNE	0.1
10 Oct 2022	5:00 AM	NNE	0.2
10 Oct 2022	6:00 AM	NNE	0.1
10 Oct 2022	7:00 AM	NE	0.1

Appendix D - Weather Conditions During Impact Monitoring Period			
Wind Speed and Directions			
Date	Time	Direction	Wind Speed m-s
10 Oct 2022	8:00 AM	NE	0.1
10 Oct 2022	9:00 AM	N	0.4
10 Oct 2022	10:00 AM	ENE	0.1
10 Oct 2022	11:00 AM	NE	0.1
10 Oct 2022	12:00 PM	NNE	0.1
10 Oct 2022	1:00 PM	WNW	0.3
10 Oct 2022	2:00 PM	NE	0.1
10 Oct 2022	3:00 PM	NE	0.1
10 Oct 2022	4:00 PM	ENE	0.1
10 Oct 2022	5:00 PM	ENE	0.1
10 Oct 2022	6:00 PM	ENE	0.1
10 Oct 2022	7:00 PM	ENE	0.2
10 Oct 2022	8:00 PM	NE	1.8
10 Oct 2022	9:00 PM	Е	0.8
10 Oct 2022	10:00 PM	ENE	0.7
10 Oct 2022	11:00 PM	ENE	0.1
11 Oct 2022	12:00 AM	ENE	0.1
11 Oct 2022	1:00 AM	NE	0.3
11 Oct 2022	2:00 AM	SSW	0.2
11 Oct 2022	3:00 AM	NE	0.2
11 Oct 2022	4:00 AM	NE	0.1
11 Oct 2022	5:00 AM	NE	0.6
11 Oct 2022	6:00 AM	ENE	0.2
11 Oct 2022	7:00 AM	ENE	0.7
11 Oct 2022	8:00 AM	Е	0.2
11 Oct 2022	9:00 AM	N	0.5
11 Oct 2022	10:00 AM	ESE	0.1
11 Oct 2022	11:00 AM	ENE	0.2

Appendix D - Weather Conditions During Impact Monitoring Period			
Wind Speed and Directions			
Date	Time	Direction	Wind Speed m-s
11 Oct 2022	12:00 PM	N	0.3
11 Oct 2022	1:00 PM	NE	0.1
11 Oct 2022	2:00 PM	ENE	0.1
11 Oct 2022	3:00 PM	SSE	0.1
11 Oct 2022	4:00 PM	E	0.1
11 Oct 2022	5:00 PM	ENE	0.3
11 Oct 2022	6:00 PM	ENE	0.1
11 Oct 2022	7:00 PM	NE	0.1
11 Oct 2022	8:00 PM	ENE	0.1
11 Oct 2022	9:00 PM	NE	0.1
11 Oct 2022	10:00 PM	ENE	0.1
11 Oct 2022	11:00 PM	ENE	0.1
12 Oct 2022	12:00 AM	ENE	0.1
12 Oct 2022	1:00 AM	ENE	0.1
12 Oct 2022	2:00 AM	NE	0.1
12 Oct 2022	3:00 AM	Е	0.1
12 Oct 2022	4:00 AM	E	0.1
12 Oct 2022	5:00 AM	NNE	0.1
12 Oct 2022	6:00 AM	ENE	0.1
12 Oct 2022	7:00 AM	NE	0.1
12 Oct 2022	8:00 AM	NE	0.1
12 Oct 2022	9:00 AM	NNE	0.3
12 Oct 2022	10:00 AM	ENE	0.2
12 Oct 2022	11:00 AM	NE	0.1
12 Oct 2022	12:00 PM	ENE	0.1
12 Oct 2022	1:00 PM	ENE	0.2
12 Oct 2022	2:00 PM	ENE	0.1
12 Oct 2022	3:00 PM	Е	0.1

Appendix D - Weather Conditions During Impact Monitoring Period			
Wind Speed and Directions			
Date	Time	Direction	Wind Speed m-s
12 Oct 2022	4:00 PM	Е	0.3
12 Oct 2022	5:00 PM	ENE	0.5
12 Oct 2022	6:00 PM	ENE	0.1
12 Oct 2022	7:00 PM	NE	0.1
12 Oct 2022	8:00 PM	NE	0.1
12 Oct 2022	9:00 PM	ENE	0.1
12 Oct 2022	10:00 PM	Е	0.1
12 Oct 2022	11:00 PM	ESE	0.2
13 Oct 2022	12:00 AM	NE	1.8
13 Oct 2022	1:00 AM	ENE	0.8
13 Oct 2022	2:00 AM	ENE	0.7
13 Oct 2022	3:00 AM	NE	0.1
13 Oct 2022	4:00 AM	NE	0.1
13 Oct 2022	5:00 AM	NNE	0.3
13 Oct 2022	6:00 AM	ENE	0.2
13 Oct 2022	7:00 AM	Е	0.2
13 Oct 2022	8:00 AM	ENE	0.1
13 Oct 2022	9:00 AM	Е	0.6
13 Oct 2022	10:00 AM	ENE	0.2
13 Oct 2022	11:00 AM	NE	0.7
13 Oct 2022	12:00 PM	ESE	1.2
13 Oct 2022	1:00 PM	SE	1.3
13 Oct 2022	2:00 PM	NE	1.1
13 Oct 2022	3:00 PM	ENE	0.9
13 Oct 2022	4:00 PM	NE	1.1
13 Oct 2022	5:00 PM	NE	0.8
13 Oct 2022	6:00 PM	Е	1.7
13 Oct 2022	7:00 PM	ESE	1.9

Appendix D - Weather Conditions During Impact Monitoring Period			
Wind Speed and Directions			
Date	Time	Direction	Wind Speed m-s
13 Oct 2022	8:00 PM	ENE	1.2
13 Oct 2022	9:00 PM	ENE	1.6
13 Oct 2022	10:00 PM	S	1.5
13 Oct 2022	11:00 PM	SE	0.3
14 Oct 2022	12:00 AM	ESE	0.5
14 Oct 2022	1:00 AM	SSE	0.8
14 Oct 2022	2:00 AM	ENE	0.3
14 Oct 2022	3:00 AM	ESE	0.3
14 Oct 2022	4:00 AM	ENE	0.3
14 Oct 2022	5:00 AM	Е	0.4
14 Oct 2022	6:00 AM	NE	1.5
14 Oct 2022	7:00 AM	Е	0.6
14 Oct 2022	8:00 AM	ESE	0.8
14 Oct 2022	9:00 AM	ENE	0.9
14 Oct 2022	10:00 AM	ESE	0.4
14 Oct 2022	11:00 AM	ENE	1.2
14 Oct 2022	12:00 PM	ENE	0.2
14 Oct 2022	1:00 PM	SE	1.8
14 Oct 2022	2:00 PM	Е	0.8
14 Oct 2022	3:00 PM	ESE	0.7
14 Oct 2022	4:00 PM	NE	0.1
14 Oct 2022	5:00 PM	ENE	0.1
14 Oct 2022	6:00 PM	Е	0.3
14 Oct 2022	7:00 PM	NNW	0.2
14 Oct 2022	8:00 PM	ENE	0.2
14 Oct 2022	9:00 PM	N	0.1
14 Oct 2022	10:00 PM	ENE	0.6
14 Oct 2022	11:00 PM	Е	0.2

Appendix D - Weather Conditions During Impact Monitoring Period			
Wind Speed and Directions			
Date	Time	Direction	Wind Speed m-s
15 Oct 2022	12:00 AM	Е	0.7
15 Oct 2022	1:00 AM	Е	0.1
15 Oct 2022	2:00 AM	ENE	0.8
15 Oct 2022	3:00 AM	ENE	0.1
15 Oct 2022	4:00 AM	Е	0.1
15 Oct 2022	5:00 AM	NNE	0.2
15 Oct 2022	6:00 AM	ENE	0.2
15 Oct 2022	7:00 AM	ENE	0.2
15 Oct 2022	8:00 AM	ENE	0.1
15 Oct 2022	9:00 AM	ESE	0.1
15 Oct 2022	10:00 AM	NE	0.4
15 Oct 2022	11:00 AM	ENE	1.5
15 Oct 2022	12:00 PM	ENE	0.2
15 Oct 2022	1:00 PM	Е	1.2
15 Oct 2022	2:00 PM	WSW	0.2
15 Oct 2022	3:00 PM	N	0.2
15 Oct 2022	4:00 PM	SW	0.1
15 Oct 2022	5:00 PM	NE	0.6
15 Oct 2022	6:00 PM	NE	0.2
15 Oct 2022	7:00 PM	SE	0.2
15 Oct 2022	8:00 PM	NE	0.1
15 Oct 2022	9:00 PM	NE	0.2
15 Oct 2022	10:00 PM	NE	1.8
15 Oct 2022	11:00 PM	ENE	0.8
16 Oct 2022	12:00 AM	NE	0.7
16 Oct 2022	1:00 AM	ENE	0.1
16 Oct 2022	2:00 AM	Е	0.1
16 Oct 2022	3:00 AM	Е	0.3

Appendix D - Weather Conditions During Impact Monitoring Period			
Wind Speed and Directions			
Date	Time	Direction	Wind Speed m-s
16 Oct 2022	4:00 AM	NE	0.2
16 Oct 2022	5:00 AM	Е	0.2
16 Oct 2022	6:00 AM	NNE	0.1
16 Oct 2022	7:00 AM	ENE	0.6
16 Oct 2022	8:00 AM	NE	0.2
16 Oct 2022	9:00 AM	ESE	0.7
16 Oct 2022	10:00 AM	NNE	0.2
16 Oct 2022	11:00 AM	SSE	0.1
16 Oct 2022	12:00 PM	ENE	0.1
16 Oct 2022	1:00 PM	ENE	0.2
16 Oct 2022	2:00 PM	Е	0.1
16 Oct 2022	3:00 PM	ENE	0.1
16 Oct 2022	4:00 PM	ENE	0.1
16 Oct 2022	5:00 PM	ENE	0.1
16 Oct 2022	6:00 PM	ESE	0.1
16 Oct 2022	7:00 PM	SE	0.1
16 Oct 2022	8:00 PM	Е	0.1
16 Oct 2022	9:00 PM	ESE	0.1
16 Oct 2022	10:00 PM	ENE	0.1
16 Oct 2022	11:00 PM	NE	0.1
17 Oct 2022	12:00 AM	ENE	0.2
17 Oct 2022	1:00 AM	NE	0.4
17 Oct 2022	2:00 AM	NE	2.8
17 Oct 2022	3:00 AM	NE	0.5
17 Oct 2022	4:00 AM	NNE	0.1
17 Oct 2022	5:00 AM	NNE	0.1
17 Oct 2022	6:00 AM	NNE	0.1
17 Oct 2022	7:00 AM	Е	0.4

Appendix D - Weather Conditions During Impact Monitoring Period				
	Wind Speed and Directions			
Date	Time	Direction	Wind Speed m-s	
17 Oct 2022	8:00 AM	NNE	0.2	
17 Oct 2022	9:00 AM	NNE	0.6	
17 Oct 2022	10:00 AM	Е	0.2	
17 Oct 2022	11:00 AM	NNE	1.8	
17 Oct 2022	12:00 PM	NNW	0.8	
17 Oct 2022	1:00 PM	NE	0.7	
17 Oct 2022	2:00 PM	NE	0.1	
17 Oct 2022	3:00 PM	WNW	0.1	
17 Oct 2022	4:00 PM	NE	0.3	
17 Oct 2022	5:00 PM	ENE	0.2	
17 Oct 2022	6:00 PM	ENE	0.2	
17 Oct 2022	7:00 PM	Е	0.1	
17 Oct 2022	8:00 PM	NE	0.6	
17 Oct 2022	9:00 PM	NNE	0.2	
17 Oct 2022	10:00 PM	N	0.7	
17 Oct 2022	11:00 PM	ENE	0.2	
18 Oct 2022	12:00 AM	NE	0.2	
18 Oct 2022	1:00 AM	N	1.6	
18 Oct 2022	2:00 AM	Е	0.4	
18 Oct 2022	3:00 AM	ENE	0.3	
18 Oct 2022	4:00 AM	NE	0.4	
18 Oct 2022	5:00 AM	Е	0.3	
18 Oct 2022	6:00 AM	NE	0.3	
18 Oct 2022	7:00 AM	NE	0.2	
18 Oct 2022	8:00 AM	ENE	0.1	
18 Oct 2022	9:00 AM	NE	0.2	
18 Oct 2022	10:00 AM	Е	0.2	
18 Oct 2022	11:00 AM	ENE	0.7	

Appendix D - Weather Conditions During Impact Monitoring Period				
	Wind Speed and Directions			
Date	Time	Direction	Wind Speed m-s	
18 Oct 2022	12:00 PM	NNW	0.1	
18 Oct 2022	1:00 PM	NE	0.2	
18 Oct 2022	2:00 PM	NE	0.2	
18 Oct 2022	3:00 PM	NNE	0.4	
18 Oct 2022	4:00 PM	ENE	0.2	
18 Oct 2022	5:00 PM	ENE	0.2	
18 Oct 2022	6:00 PM	ESE	0.2	
18 Oct 2022	7:00 PM	ENE	0.1	
18 Oct 2022	8:00 PM	ESE	0.2	
18 Oct 2022	9:00 PM	NNE	1.8	
18 Oct 2022	10:00 PM	NE	0.8	
18 Oct 2022	11:00 PM	NNE	0.7	
19 Oct 2022	12:00 AM	NE	0.1	
19 Oct 2022	1:00 AM	NE	0.1	
19 Oct 2022	2:00 AM	NE	0.3	
19 Oct 2022	3:00 AM	ENE	0.2	
19 Oct 2022	4:00 AM	ESE	0.2	
19 Oct 2022	5:00 AM	SSE	0.1	
19 Oct 2022	6:00 AM	NE	0.6	
19 Oct 2022	7:00 AM	NE	0.2	
19 Oct 2022	8:00 AM	ENE	0.7	
19 Oct 2022	9:00 AM	ENE	0.4	
19 Oct 2022	10:00 AM	ESE	1.5	
19 Oct 2022	11:00 AM	NE	0.1	
19 Oct 2022	12:00 PM	N	0.4	
19 Oct 2022	1:00 PM	NE	0.1	
19 Oct 2022	2:00 PM	NW	0.1	
19 Oct 2022	3:00 PM	NE	0.1	

Appendix D - Weather Conditions During Impact Monitoring Period				
	Wind Speed and Directions			
Date	Time	Direction	Wind Speed m-s	
19 Oct 2022	4:00 PM	ENE	0.6	
19 Oct 2022	5:00 PM	NW	0.2	
19 Oct 2022	6:00 PM	ENE	0.4	
19 Oct 2022	7:00 PM	NNW	0.1	
19 Oct 2022	8:00 PM	NE	0.1	
19 Oct 2022	9:00 PM	NE	0.3	
19 Oct 2022	10:00 PM	ENE	0.6	
19 Oct 2022	11:00 PM	NNE	0.1	
20 Oct 2022	12:00 AM	Е	0.1	
20 Oct 2022	1:00 AM	NE	0.1	
20 Oct 2022	2:00 AM	NE	0.1	
20 Oct 2022	3:00 AM	NNE	0.1	
20 Oct 2022	4:00 AM	NE	0.1	
20 Oct 2022	5:00 AM	N	0.2	
20 Oct 2022	6:00 AM	NE	0.1	
20 Oct 2022	7:00 AM	NNW	0.1	
20 Oct 2022	8:00 AM	ENE	0.2	
20 Oct 2022	9:00 AM	NNE	0.1	
20 Oct 2022	10:00 AM	NW	0.1	
20 Oct 2022	11:00 AM	NNE	0.1	
20 Oct 2022	12:00 PM	NE	0.1	
20 Oct 2022	1:00 PM	Е	0.1	
20 Oct 2022	2:00 PM	NNW	0.2	
20 Oct 2022	3:00 PM	N	0.1	
20 Oct 2022	4:00 PM	NNE	0.1	
20 Oct 2022	5:00 PM	N	0.1	
20 Oct 2022	6:00 PM	N	0.5	
20 Oct 2022	7:00 PM	W	0.6	

Appendix D - Weather Conditions During Impact Monitoring Period				
Wind Speed and Directions				
Date	Time	Direction	Wind Speed m-s	
20 Oct 2022	8:00 PM	NE	0.3	
20 Oct 2022	9:00 PM	ENE	1.7	
20 Oct 2022	10:00 PM	NE	0.1	
20 Oct 2022	11:00 PM	NE	0.2	
21 Oct 2022	12:00 AM	ENE	0.1	
21 Oct 2022	1:00 AM	NE	0.2	
21 Oct 2022	2:00 AM	NE	0.3	
21 Oct 2022	3:00 AM	N	0.4	
21 Oct 2022	4:00 AM	NE	0.3	
21 Oct 2022	5:00 AM	NNE	0.1	
21 Oct 2022	6:00 AM	ESE	0.2	
21 Oct 2022	7:00 AM	ENE	0.2	
21 Oct 2022	8:00 AM	NNE	0.1	
21 Oct 2022	9:00 AM	Е	1.4	
21 Oct 2022	10:00 AM	N	0.4	
21 Oct 2022	11:00 AM	ENE	1.0	
21 Oct 2022	12:00 PM	ENE	0.1	
21 Oct 2022	1:00 PM	NNE	0.2	
21 Oct 2022	2:00 PM	NE	1.6	
21 Oct 2022	3:00 PM	N	0.5	
21 Oct 2022	4:00 PM	NE	0.2	
21 Oct 2022	5:00 PM	NNE	0.2	
21 Oct 2022	6:00 PM	ENE	0.1	
21 Oct 2022	7:00 PM	N	0.1	
21 Oct 2022	8:00 PM	NW	0.1	
21 Oct 2022	9:00 PM	N	0.1	
21 Oct 2022	10:00 PM	NNE	0.2	
21 Oct 2022	11:00 PM	NE	0.2	

Appendix D - Weather Conditions During Impact Monitoring Period				
	Wind Speed and Directions			
Date	Time	Direction	Wind Speed m-s	
22 Oct 2022	12:00 AM	ENE	0.3	
22 Oct 2022	1:00 AM	NE	0.1	
22 Oct 2022	2:00 AM	NNE	1.2	
22 Oct 2022	3:00 AM	NNE	0.1	
22 Oct 2022	4:00 AM	NNE	0.1	
22 Oct 2022	5:00 AM	NE	1.2	
22 Oct 2022	6:00 AM	SE	0.1	
22 Oct 2022	7:00 AM	NE	0.1	
22 Oct 2022	8:00 AM	S	0.3	
22 Oct 2022	9:00 AM	ENE	0.2	
22 Oct 2022	10:00 AM	NE	1.0	
22 Oct 2022	11:00 AM	Е	1.4	
22 Oct 2022	12:00 PM	NNE	0.9	
22 Oct 2022	1:00 PM	NNW	4.2	
22 Oct 2022	2:00 PM	NE	0.9	
22 Oct 2022	3:00 PM	ENE	0.9	
22 Oct 2022	4:00 PM	NNE	1.4	
22 Oct 2022	5:00 PM	N	0.7	
22 Oct 2022	6:00 PM	ENE	0.7	
22 Oct 2022	7:00 PM	N	0.1	
22 Oct 2022	8:00 PM	ENE	0.1	
22 Oct 2022	9:00 PM	Е	0.1	
22 Oct 2022	10:00 PM	NNE	0.1	
22 Oct 2022	11:00 PM	N	0.1	
23 Oct 2022	12:00 AM	NNE	0.1	
23 Oct 2022	1:00 AM	ENE	0.1	
23 Oct 2022	2:00 AM	Е	0.2	
23 Oct 2022	3:00 AM	NE	0.1	

Appendix D - Weather Conditions During Impact Monitoring Period				
Wind Speed and Directions				
Date	Time	Direction	Wind Speed m-s	
23 Oct 2022	4:00 AM	ENE	0.1	
23 Oct 2022	5:00 AM	Е	0.2	
23 Oct 2022	6:00 AM	NE	0.1	
23 Oct 2022	7:00 AM	ENE	0.1	
23 Oct 2022	8:00 AM	NE	0.1	
23 Oct 2022	9:00 AM	Е	0.1	
23 Oct 2022	10:00 AM	NE	0.1	
23 Oct 2022	11:00 AM	NE	0.2	
23 Oct 2022	12:00 PM	ENE	0.1	
23 Oct 2022	1:00 PM	NE	0.1	
23 Oct 2022	2:00 PM	Е	0.1	
23 Oct 2022	3:00 PM	NE	0.5	
23 Oct 2022	4:00 PM	Е	0.8	
23 Oct 2022	5:00 PM	Е	0.4	
23 Oct 2022	6:00 PM	NNE	0.2	
23 Oct 2022	7:00 PM	NNE	1.3	
23 Oct 2022	8:00 PM	ESE	0.2	
23 Oct 2022	9:00 PM	ENE	0.1	
23 Oct 2022	10:00 PM	NNE	0.1	
23 Oct 2022	11:00 PM	NE	0.1	
24 Oct 2022	12:00 AM	ENE	0.1	
24 Oct 2022	1:00 AM	NE	0.1	
24 Oct 2022	2:00 AM	NW	0.1	
24 Oct 2022	3:00 AM	NE	0.2	
24 Oct 2022	4:00 AM	NE	0.1	
24 Oct 2022	5:00 AM	ENE	0.3	
24 Oct 2022	6:00 AM	ENE	0.3	
24 Oct 2022	7:00 AM	NE	0.1	

Appendix D - Weather Conditions During Impact Monitoring Period				
	Wind Speed and Directions			
Date	Time	Direction	Wind Speed m-s	
24 Oct 2022	8:00 AM	ENE	0.1	
24 Oct 2022	9:00 AM	ESE	0.1	
24 Oct 2022	10:00 AM	NE	0.1	
24 Oct 2022	11:00 AM	ENE	0.1	
24 Oct 2022	12:00 PM	ENE	0.1	
24 Oct 2022	1:00 PM	NNE	0.1	
24 Oct 2022	2:00 PM	ENE	0.2	
24 Oct 2022	3:00 PM	ENE	0.1	
24 Oct 2022	4:00 PM	ENE	0.1	
24 Oct 2022	5:00 PM	NE	0.2	
24 Oct 2022	6:00 PM	ENE	0.1	
24 Oct 2022	7:00 PM	ENE	0.1	
24 Oct 2022	8:00 PM	N	0.1	
24 Oct 2022	9:00 PM	NE	0.1	
24 Oct 2022	10:00 PM	NNE	0.1	
24 Oct 2022	11:00 PM	Е	0.2	
25 Oct 2022	12:00 AM	ENE	0.1	
25 Oct 2022	1:00 AM	ENE	0.1	
25 Oct 2022	2:00 AM	Е	0.1	
25 Oct 2022	3:00 AM	Е	0.1	
25 Oct 2022	4:00 AM	ENE	0.1	
25 Oct 2022	5:00 AM	ENE	0.1	
25 Oct 2022	6:00 AM	NE	0.1	
25 Oct 2022	7:00 AM	NE	0.1	
25 Oct 2022	8:00 AM	Е	0.1	
25 Oct 2022	9:00 AM	Е	0.1	
25 Oct 2022	10:00 AM	ENE	0.4	
25 Oct 2022	11:00 AM	ENE	0.3	

Appendix D - Weather Conditions During Impact Monitoring Period			
Wind Speed and Directions			
Date	Time	Direction	Wind Speed m-s
25 Oct 2022	12:00 PM	ENE	0.6
25 Oct 2022	1:00 PM	ESE	0.1
25 Oct 2022	2:00 PM	ENE	0.1
25 Oct 2022	3:00 PM	SE	0.4
25 Oct 2022	4:00 PM	ENE	0.4
25 Oct 2022	5:00 PM	ENE	0.1
25 Oct 2022	6:00 PM	ENE	0.1
25 Oct 2022	7:00 PM	S	0.1
25 Oct 2022	8:00 PM	Е	0.1
25 Oct 2022	9:00 PM	Е	0.1
25 Oct 2022	10:00 PM	Е	0.1
25 Oct 2022	11:00 PM	ESE	0.1
26 Oct 2022	12:00 AM	Е	0.1
26 Oct 2022	1:00 AM	ENE	0.1
26 Oct 2022	2:00 AM	ENE	0.1
26 Oct 2022	3:00 AM	ENE	0.1
26 Oct 2022	4:00 AM	ENE	0.1
26 Oct 2022	5:00 AM	NE	0.1
26 Oct 2022	6:00 AM	Е	0.1
26 Oct 2022	7:00 AM	NE	0.1
26 Oct 2022	8:00 AM	ENE	0.2
26 Oct 2022	9:00 AM	ENE	0.1
26 Oct 2022	10:00 AM	NE	0.1
26 Oct 2022	11:00 AM	ENE	0.3
26 Oct 2022	12:00 PM	ESE	0.1
26 Oct 2022	1:00 PM	NE	0.1
26 Oct 2022	2:00 PM	ENE	0.5
26 Oct 2022	3:00 PM	ENE	0.1

Appendix D - Weather Conditions During Impact Monitoring Period				
Wind Speed and Directions				
Date	Time	Direction	Wind Speed m-s	
26 Oct 2022	4:00 PM	NNE	0.1	
26 Oct 2022	5:00 PM	ENE	0.1	
26 Oct 2022	6:00 PM	ENE	0.1	
26 Oct 2022	7:00 PM	ENE	0.1	
26 Oct 2022	8:00 PM	NE	0.1	
26 Oct 2022	9:00 PM	ENE	0.1	
26 Oct 2022	10:00 PM	ENE	0.1	
26 Oct 2022	11:00 PM	Е	0.1	
27 Oct 2022	12:00 AM	ENE	0.1	
27 Oct 2022	1:00 AM	Е	0.1	
27 Oct 2022	2:00 AM	ENE	0.1	
27 Oct 2022	3:00 AM	NE	0.2	
27 Oct 2022	4:00 AM	Е	0.1	
27 Oct 2022	5:00 AM	NNE	0.1	
27 Oct 2022	6:00 AM	NNE	0.1	
27 Oct 2022	7:00 AM	Е	0.2	
27 Oct 2022	8:00 AM	ESE	0.1	
27 Oct 2022	9:00 AM	ENE	0.1	
27 Oct 2022	10:00 AM	ENE	0.1	
27 Oct 2022	11:00 AM	NE	0.1	
27 Oct 2022	12:00 PM	WSW	0.1	
27 Oct 2022	1:00 PM	SE	0.1	
27 Oct 2022	2:00 PM	ENE	0.1	
27 Oct 2022	3:00 PM	ENE	0.2	
27 Oct 2022	4:00 PM	ENE	0.1	
27 Oct 2022	5:00 PM	Е	0.1	
27 Oct 2022	6:00 PM	Е	0.2	
27 Oct 2022	7:00 PM	ENE	0.1	

Appendix D - Weather Conditions

Appendix D - Weather Conditions During Impact Monitoring Period					
	Wind Speed and Directions				
Date	Time	Direction	Wind Speed m-s		
27 Oct 2022	8:00 PM	SSE	0.1		
27 Oct 2022	9:00 PM	ENE	0.1		
27 Oct 2022	10:00 PM	ENE	0.1		
27 Oct 2022	11:00 PM	SSE	0.1		
28 Oct 2022	12:00 AM	ENE	0.2		
28 Oct 2022	1:00 AM	Е	0.1		
28 Oct 2022	2:00 AM	NE	0.1		
28 Oct 2022	3:00 AM	ENE	0.1		
28 Oct 2022	4:00 AM	NE	0.1		
28 Oct 2022	5:00 AM	ENE	0.1		
28 Oct 2022	6:00 AM	NNE	0.1		
28 Oct 2022	7:00 AM	ENE	0.1		
28 Oct 2022	8:00 AM	NE	0.1		
28 Oct 2022	9:00 AM	NE	0.1		
28 Oct 2022	10:00 AM	ENE	0.2		
28 Oct 2022	11:00 AM	ENE	0.1		
28 Oct 2022	12:00 PM	Е	0.1		
28 Oct 2022	1:00 PM	N	0.3		
28 Oct 2022	2:00 PM	Е	0.1		

Appendix D - Weather Conditions During Impact Monitoring Period				
Wind Speed and Directions				
Date	Time	Direction	Wind Speed m-s	
28 Oct 2022	3:00 PM	ENE	0.1	
28 Oct 2022	4:00 PM	ENE	0.5	
28 Oct 2022	5:00 PM	ENE	0.1	
28 Oct 2022	6:00 PM	NE	0.1	
28 Oct 2022	7:00 PM	ENE	0.1	
28 Oct 2022	8:00 PM	ESE	0.1	
28 Oct 2022	9:00 PM	NE	0.2	
28 Oct 2022	10:00 PM	ENE	0.1	
28 Oct 2022	11:00 PM	ENE	0.2	
29 Oct 2022	12:00 AM	NNE	0.2	
29 Oct 2022	1:00 AM	ENE	0.2	
29 Oct 2022	2:00 AM	ENE	0.2	
29 Oct 2022	3:00 AM	ENE	0.2	
29 Oct 2022	4:00 AM	NE	0.2	
29 Oct 2022	5:00 AM	ENE	0.2	
29 Oct 2022	6:00 AM	NE	0.2	
29 Oct 2022	7:00 AM	Е	0.3	
29 Oct 2022	8:00 AM	ENE	0.2	
29 Oct 2022	9:00 AM	Е	0.2	
29 Oct 2022	10:00 AM	NNE	0.2	
29 Oct 2022	11:00 AM	Е	0.2	
29 Oct 2022	12:00 PM	WSW	0.1	
29 Oct 2022	1:00 PM	NNE	0.1	
29 Oct 2022	2:00 PM	NNE	0.1	
29 Oct 2022	3:00 PM	ENE	0.1	
29 Oct 2022	4:00 PM	N	0.1	
29 Oct 2022	5:00 PM	NE	0.1	
29 Oct 2022	6:00 PM	ENE	0.1	

Appendix D - Weather Conditions During Impact Monitoring Period				
	Wind Speed and Directions			
Date	Time	Direction	Wind Speed m-s	
29 Oct 2022	7:00 PM	N	0.1	
29 Oct 2022	8:00 PM	NE	0.2	
29 Oct 2022	9:00 PM	NE	0.1	
29 Oct 2022	10:00 PM	N	0.1	
29 Oct 2022	11:00 PM	NNW	0.3	
30 Oct 2022	12:00 AM	NNE	0.1	
30 Oct 2022	1:00 AM	NE	0.1	
30 Oct 2022	2:00 AM	NNE	0.5	
30 Oct 2022	3:00 AM	ENE	0.1	
30 Oct 2022	4:00 AM	NE	0.1	
30 Oct 2022	5:00 AM	ENE	0.1	
30 Oct 2022	6:00 AM	NE	0.1	
30 Oct 2022	7:00 AM	NNE	0.1	
30 Oct 2022	8:00 AM	NE	0.1	
30 Oct 2022	9:00 AM	NNE	0.1	
30 Oct 2022	10:00 AM	Е	0.2	
30 Oct 2022	11:00 AM	NE	0.2	
30 Oct 2022	12:00 PM	ENE	0.2	
30 Oct 2022	1:00 PM	Е	0.1	
30 Oct 2022	2:00 PM	Е	0.1	
30 Oct 2022	3:00 PM	NNE	0.1	
30 Oct 2022	4:00 PM	Е	0.2	
30 Oct 2022	5:00 PM	ENE	0.1	
30 Oct 2022	6:00 PM	ENE	0.1	
30 Oct 2022	7:00 PM	ENE	0.1	
30 Oct 2022	8:00 PM	ENE	0.1	
30 Oct 2022	9:00 PM	ENE	0.1	
30 Oct 2022	10:00 PM	NE	0.1	

Appendix D - Wo	Appendix D - Weather Conditions During Impact Monitoring Period									
	Wind Speed a	and Directions								
Date	Time	Direction	Wind Speed m-s							
30 Oct 2022	11:00 PM	ENE	0.1							
31 Oct 2022	12:00 AM	ESE	0.1							
31 Oct 2022	1:00 AM	NE	0.1							
31 Oct 2022	2:00 AM	ENE	0.1							
31 Oct 2022	3:00 AM	ENE	0.1							
31 Oct 2022	4:00 AM	NNE	0.1							
31 Oct 2022	5:00 AM	ENE	0.1							
31 Oct 2022	6:00 AM	ENE	0.1							
31 Oct 2022	7:00 AM	ENE	0.1							
31 Oct 2022	8:00 AM	NE	0.1							
31 Oct 2022	9:00 AM	NE	0.2							
31 Oct 2022	10:00 AM	NNE	0.1							
31 Oct 2022	11:00 AM	Е	0.1							
31 Oct 2022	12:00 PM	Е	0.3							
31 Oct 2022	1:00 PM	SE	0.1							
31 Oct 2022	2:00 PM	S	0.1							
31 Oct 2022	3:00 PM	SE	0.5							
31 Oct 2022	4:00 PM	ENE	0.1							
31 Oct 2022	5:00 PM	Е	0.1							
31 Oct 2022	6:00 PM	ESE	0.1							
31 Oct 2022	7:00 PM	ENE	0.1							
31 Oct 2022	8:00 PM	Е	0.1							
31 Oct 2022	9:00 PM	ESE	0.1							
31 Oct 2022	10:00 PM	ENE	0.1							
31 Oct 2022	11:00 PM	NNE	0.1							

APPENDIX F 24-HOUR TSP MONITORING RESULTS AND GRAPHICAL PRESENTATIONS

# **Appendix F - 24-hour TSP Impact Monitoring Results**

### Location CKL1 - Flat 121 Cha Kwo Ling Village

	Weather	Air Tomp	Atmoonharia Draggura	Filter W	eight (g)	Dortiouloto	Elapse	e Time	Compling	Flow Rate	e (m³/min.)	Av Elow	Total vol.	Conc.	Action	Limit
Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Initial	Final	Particulate weight (g)	Initial	Final	Sampling Time (hrs.)	Initial	Final	(m <sup>3</sup> /min)	(m <sup>3</sup> )	(µg/m <sup>3</sup> )	Level (µg/m3)	Level (µg/m3)
5-Oct-22	Sunny	302.0	762.0	3.3118	3.5457	0.2339	4923.1	4947.1	24.0	1.22	1.22	1.22	1762.8	132.7		
11-Oct-22	Sunny	297.7	763.1	3.3607	3.4584	0.0977	4947.1	4971.1	24.1	1.23	1.23	1.23	1778.7	54.9		
17-Oct-22	Fine	297.1	759.3	3.3780	3.6752	0.2971	4971.1	4995.1	24.0	1.22	1.24	1.23	1771.6	167.7	191.0	260.0
22-Oct-22	Sunny	299.6	762.4	3.6892	3.8560	0.1668	4995.1	5019.1	24.0	1.23	1.23	1.23	1768.6	94.3		
27-Oct-22	Sunny	298.1	762.7	3.2814	3.6445	0.3631	4971.4	4995.4	24.0	1.23	1.23	1.23	1772.3	204.9		
Note:	Bold Italic means A	ction Level excee	edance										Min	54.9		
	Bold Italic with und	<i>lerline</i> means L	imit Level exceedance										Max	204.9		
													Average	130.9		

### Location CKL2 - Flat 103 Cha Kwo Ling Village

	Weather	Air Temp.	Atmospheric Pressure,	Filter W	eight (g)	Particulate	Elapse	e Time	Sampling	Flow Rate	e (m³/min.)	Av Flow	Total vol.	Conc.	Action	Limit
Start Date	Condition	(K)	Pa (mmHg)	Initial	Final	weight (g)	Initial	Final	Time (hrs.)	Initial	Final	(m <sup>3</sup> /min)	(m <sup>3</sup> )	(μg/m <sup>3</sup> )	Level (µg/m3)	Level (µg/m3)
5-Oct-22	Sunny	302.0	762.0	3.3000	3.5186	0.2186	17127.9	17151.9	24.0	1.23	1.23	1.23	1766.8	123.7		
11-Oct-22	Sunny	297.7	763.1	3.3109	3.5296	0.2187	17151.9	17175.9	24.0	1.24	1.23	1.24	1778.8	122.9		
17-Oct-22	Fine	297.1	759.3	3.3010	3.6672	0.3662	17175.9	17199.9	24.0	1.23	1.24	1.23	1776.7	206.1	183.0	260.0
22-Oct-22	Cloudy	299.6	762.4	3.3239	3.5050	0.1811	17199.9	17223.9	24.0	1.23	1.23	1.23	1773.3	102.1		
27-Oct-22	Sunny	298.1	762.7	3.3725	3.5640	0.1915	17223.9	17247.9	24.0	1.24	1.23	1.23	1777.4	107.7		
Note:	Bold Italic means A	ction Level excee	edance										Min	102.1		
	Bold Italic with und	<u>derline</u> means L	imit Level exceedance										Max	206.1		
													Average	132.5		

## Location KTD1 - Centre of Excellence in Paediatrics (Children's Hospital)

	Weather	Air Temp.	Atmospheric Pressure,	Filter W	eight (g)	Particulate	Elapse	e Time	Sampling	Flow Rate (m <sup>3</sup> /min.)	Av. Flow	Total vol	Conc.	Action	Limit	
Start Date	Condition	(K)	Pa (mmHg)	Initial	Final	weight (g)	Initial	Final	Time (hrs.)	Initial	Final	(m <sup>3</sup> /min)	(m <sup>3</sup> )	(µg/m <sup>3</sup> )	Level (µg/m3)	Level (µg/m3)
5-Oct-22	Sunny	302.0	762.0	3.3139	3.3567	0.0429	16403.0	16427.0	24.0	1.22	1.22	1.22	1754.4	24.4		
11-Oct-22	Sunny	297.7	763.1	3.3129	3.3992	0.0863	16427.0	16451.0	24.1	1.23	1.23	1.23	1772.5	48.7		
17-Oct-22	Cloudy	297.1	759.3	3.3270	3.4639	0.1369	16451.0	16475.0	24.0	1.22	1.23	1.23	1764.4	77.6	177.0	260.0
22-Oct-22	Sunny	299.6	762.4	3.3552	3.4477	0.0925	16475.1	16499.1	24.0	1.22	1.22	1.22	1761.0	52.6		
27-Oct-22	Windy	298.1	762.7	3.4123	3.4695	0.0572	16499.1	16523.0	24.0	1.23	1.22	1.23	1764.5	32.4		
Note:	Bold Italic means Action Level exceedance										Min	24.4				
	Bold Italic with und	<i>lerline</i> means Li	imit Level exceedance										Max	77.6		

Average 47.1

Average 211.6

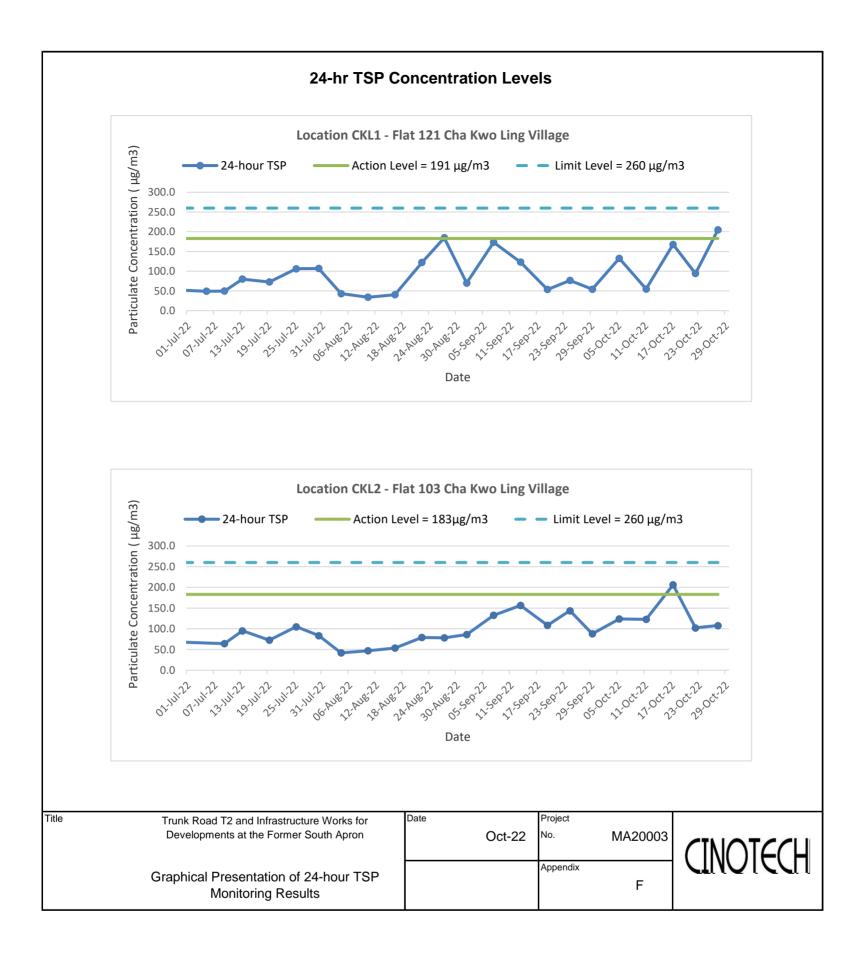
## Location KER1 - Future Residential Development at Kerry Godown

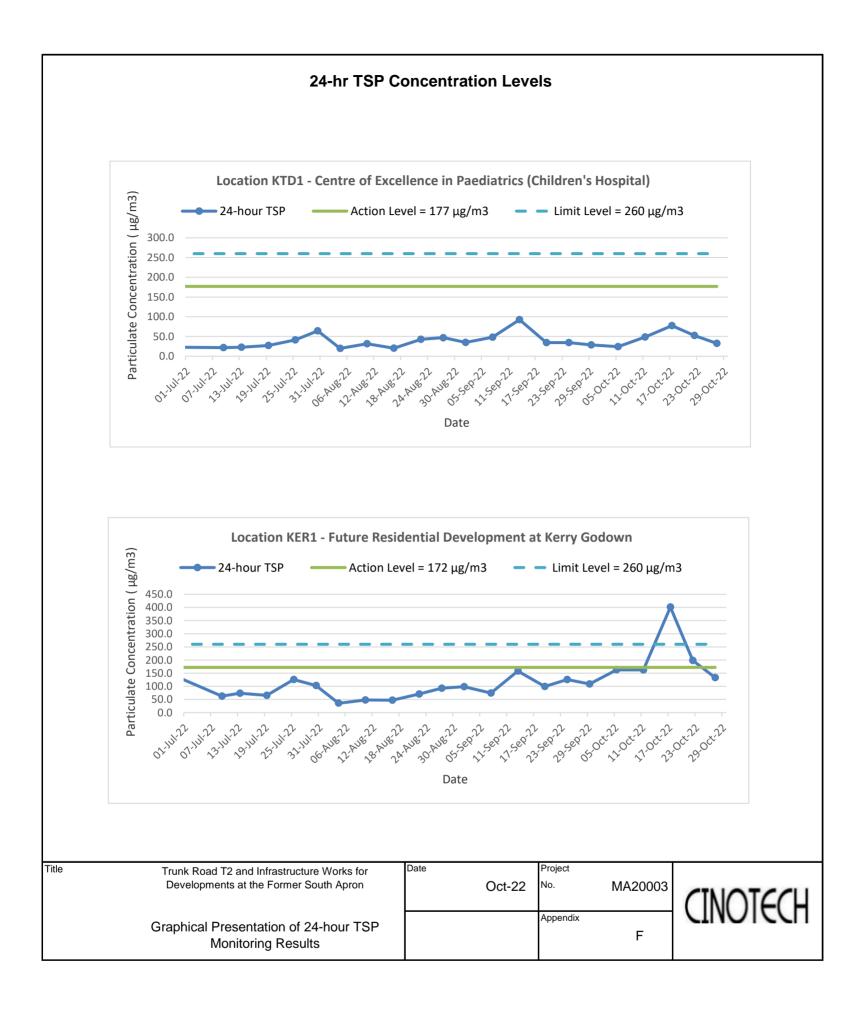
	Weather	Air Temp.	Atmospheric Pressure,	Filter W	eight (g)	Particulate	Elapse	e Time	Sampling	Flow Rate	e (m³/min.)	Δν Flow	Total vol.	Conc.	Action	Limit
Start Date	Condition	(K)	Pa (mmHg)	Initial	Final	weight (g)	Initial	Final	Time (hrs.)	Initial	Final	(m <sup>3</sup> /min)	(m <sup>3</sup> )	(μg/m <sup>3</sup> )	Level (µg/m3)	Level (µg/m3)
5-Oct-22	Fine	302.0	762.0	3.3631	3.6490	0.2859	14064.0	14088.0	24.0	1.22	1.22	1.22	1755.5	162.9		
11-Oct-22	Sunny	297.7	763.1	3.3309	3.6178	0.2869	14088.0	14112.0	24.0	1.23	1.23	1.23	1767.8	162.3		
17-Oct-22	Cloudy	297.1	759.3	3.3667	4.0751	0.7084	14112.0	14136.0	24.0	1.22	1.23	1.23	1765.6	<u>401.2</u>	172.0	260.0
22-Oct-22	Sunny	299.6	762.4	3.3758	3.7256	0.3498	14136.0	14160.0	24.0	1.22	1.22	1.22	1762.2	198.5		
27-Oct-22	Sunny	298.1	762.7	3.6757	3.9106	0.2349	14183.0	14207.0	24.0	1.23	1.23	1.23	1766.4	133.0		
Note:	Bold Italic means Action Level exceedance										Min	133.0				
	Bold Italic with und	<i>lerline</i> means L	imit Level exceedance										Max	401.2		

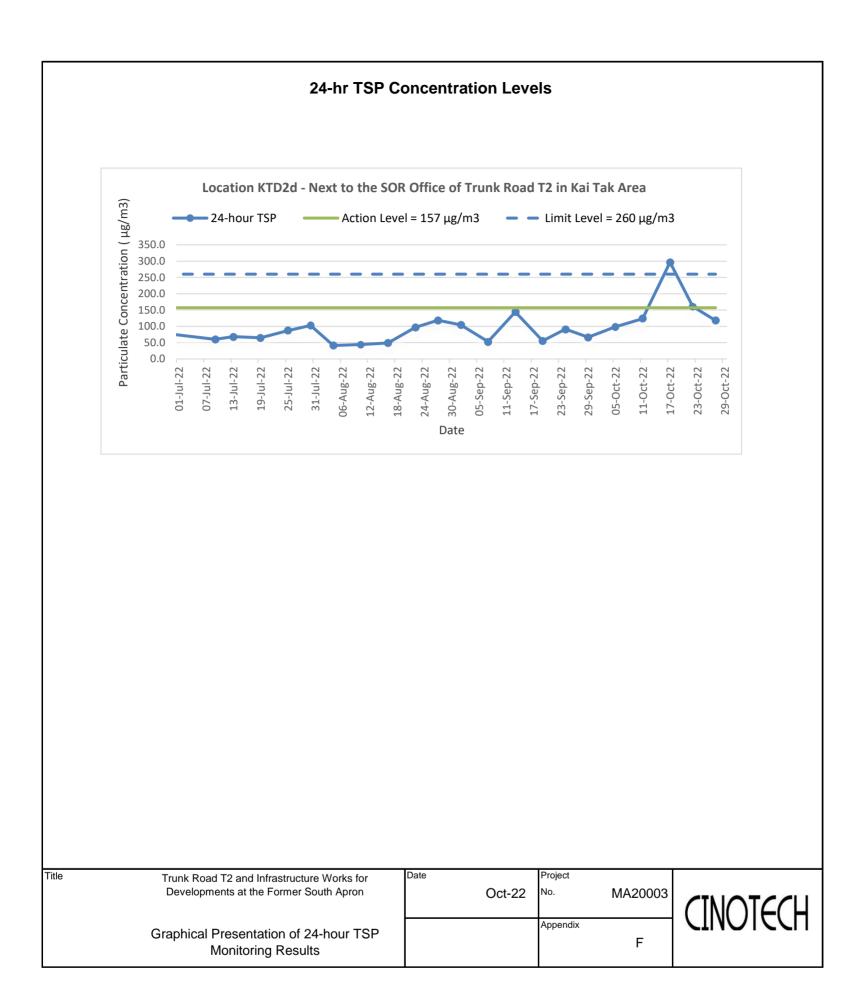
# Location KTD2d - Next to the SOR Office of Trunk Road T2 in Kai Tak Area

	\\/oothor	Air Tomp	Atmospharia Drossura	Filter W	eight (g)	Dortiouloto	Elapse	e Time	Compling	Flow Rate (m <sup>3</sup> /min.)		Av. Flow	Total vol	Conc.	Action	Limit
Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Initial	Final	Particulate weight (g)	Initial	Final	Sampling Time (hrs.)	Initial	Final	(m <sup>3</sup> /min)	(m <sup>3</sup> )	(μg/m <sup>3</sup> )	Level (µg/m3)	Level (µg/m3)
5-Oct-22	Sunny	302.0	762.0	3.3488	3.5219	0.1731	14848.1	14872.1	24.0	1.22	1.22	1.22	1756.0	98.6		
11-Oct-22	Sunny	297.7	763.1	3.3657	3.5843	0.2187	14872.1	14896.1	24.0	1.23	1.23	1.23	1769.5	123.6		
17-Oct-22	Cloudy	297.1	759.3	3.3593	3.8828	0.5235	14896.1	14920.1	24.0	1.22	1.23	1.23	1765.9	<u> 296.5</u>	157.0	260.0
22-Oct-22	Sunny	299.6	762.4	3.3500	3.6334	0.2834	14920.1	14944.1	24.0	1.22	1.22	1.22	1762.5	160.8		
27-Oct-22	Rainy	298.1	762.7	3.7079	3.9166	0.2087	14968.1	14992.1	24.0	1.23	1.23	1.23	1766.7	118.1		
Note:	Bold Italic means A	ction Level excee	edance										Min	98.6		

 $\underline{\textit{Bold Italic with underline}}\ \ \text{means Limit Level exceedance}$ 296.5 Average 159.5







APPENDIX G COPIES OF CALIBRATION CERTIFICATES FOR NOISE MONITORING

Rm 1904, Technology Park 18 On Lai Street, Shatin

NT, Hong Kong

Tel: +852 3841 4388 Website: https://www.hpct.com.hk



Report No. : 00168 Issue Date : 25 Jan 2022

Application No. : HP00044

**Certificate of Calibration** 

Applicant : Cinotech Consultants Limited

RM 1710, Technology Park,

18 On Lai Street,

Shatin, N.T., Hong Kong

Sample Description : Submitted equipment stated to be Integrating Sound Level Meter.

Equipment No.: : N-08-11

Manufacturer: : SVANTEK

Other information : | N

Model No.	SVAN 957
Serial No.	23852
Microphone No.	22454

Date Received : 20 Jan 2022

Test Period : 21 Jan 2022 to 21 Jan 2022

Test Requested : Performance checking for Sound Level Meter

Test Method : The Sound Level Calibrator has been calibrated in accordance with the

documented procedures and using standard and instrument which are

recommended by the manufacturer, or equivalent.

Test conditions : Room Temperature: 22-25 degree Celsius

Relative Humidity: 35-70%

Test Result : Refer to the test result(s) on page 2.

Remark: 1. Information of the sample description provided by the Applicant.

2. The result(s) relate only to the items tested or calibrated.

For and on behalf of HIGH PRECISION CHEMICAL TESTING LIMITED

Rm 1904, Technology Park 18 On Lai Street, Shatin

NT, Hong Kong

Tel: +852 3841 4388 Website: https://www.hpct.com.hk



Report No. : 00168 | Issue Date : 25 Jan 2022

Application No. : HP00044

## **Certificate of Calibration**

Measuring equipment

Description	Sound Calibrator
Manufacturer	Brüel & Kjær
Model No.	TYPE 4231
Serial No.	2326353
Equipment No.	N-02-01

Test Result :

Reference value, dB	Indication value, dB	Deviation, dB	Allowed deviation, dB
94.0	94.1	+0.1	± 1.5
114.0	114.2	+0.2	± 1.5

Note

- : 1. "Instrument Readings" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.
  - 2. The indication value was obtained from the average of ten replicated measurement.

Rm 1904, Technology Park 18 On Lai Street, Shatin

NT, Hong Kong

Tel: +852 3841 4388 Website: https://www.hpct.com.hk



Report No. : 00164 Issue Date : 25 Jan 2022

Application No. : HP00042

**Certificate of Calibration** 

Applicant : Cinotech Consultants Limited

RM 1710, Technology Park,

18 On Lai Street,

Shatin, N.T., Hong Kong

Sample Description : Submitted equipment stated to be Integrating Sound Level Meter.

Equipment No.: : N-08-12

Manufacturer: : SVANTEK

Other information

Model No.	SVAN 957
Serial No.	23851
Microphone No.	17204

Date Received : 19 Jan 2022

Test Period : 21 Jan 2022 to 21 Jan 2022

Test Requested : Performance checking for Sound Level Meter

Test Method : The Sound Level Calibrator has been calibrated in accordance with the

documented procedures and using standard and instrument which are

recommended by the manufacturer, or equivalent.

Test conditions : Room Temperature: 22-25 degree Celsius

Relative Humidity: 35-70%

Test Result : Refer to the test result(s) on page 2.

Remark: 1. Information of the sample description provided by the Applicant.

2. The result(s) relate only to the items tested or calibrated.

For and on behalf of HIGH PRECISION CHEMICAL TESTING LIMITED

Rm 1904, Technology Park 18 On Lai Street, Shatin

NT, Hong Kong

Tel: +852 3841 4388 Website: https://www.hpct.com.hk



Report No. : 00164 | Issue Date : 25 Jan 2022

Application No. : HP00042

## **Certificate of Calibration**

Measuring equipment

Description	Sound Calibrator
Manufacturer	Brüel & Kjær
Model No.	TYPE 4231
Serial No.	2326353
Equipment No.	N-02-01

Test Result :

Reference value, dB	Indication value, dB	Deviation, dB	Allowed deviation, dB
94.0	94.1	+0.1	± 1.5
114.0	114.2	+0.2	± 1.5

Note

- : 1. "Instrument Readings" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.
  - 2. The indication value was obtained from the average of ten replicated measurement.

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NT, Hong Kong

Tel: +852 3841 4388 Website: https://www.hpct.com.hk



Report No. : 00159 | Issue Date : 30 Dec 2021

Application No. : HP00039

**Certificate of Calibration** 

Applicant : Cinotech Consultants Limited

RM 1710, Technology Park,

18 On Lai Street,

Shatin, N.T., Hong Kong

Sample Description : Submitted equipment stated to be Integrating Sound Level Meter.

Equipment No.: : N-12-02

Manufacturer: : BSWA Technology

Other information :

Model No.	BSWA 308
Serial No.	570187
Microphone No.	570610

Date Received : 29 Dec 2021

Test Period : 30 Dec 2021 to 30 Dec 2021

Test Requested : Performance checking for Sound Level Meter

Test Method : The Sound Level Calibrator has been calibrated in accordance with the

documented procedures and using standard and instrument which are

recommended by the manufacturer, or equivalent.

Test conditions : Room Temperature: 22-25 degree Celsius

Relative Humidity: 35-70%

Test Result : Refer to the test result(s) on page 2.

Remark: 1. Information of the sample description provided by the Applicant.

2. The result(s) relate only to the items tested or calibrated.

For and on behalf of HIGH PRECISION CHEMICAL TESTING LIMITED

Rm 1904, Technology Park 18 On Lai Street, Shatin

NT, Hong Kong

Tel: +852 3841 4388 Website: https://www.hpct.com.hk



Report No. : 00159 | Issue Date : 30 Dec 2021

Application No. : HP00039

## **Certificate of Calibration**

Measuring equipment

Description	Sound Calibrator
Manufacturer	Brüel & Kjær
Model No.	TYPE 4231
Serial No.	2326353
Equipment No.	N-02-01

Test Result

Reference value, dB	Indication value, dB	Deviation, dB	Allowed deviation, dB
94.0	94.0	0.0	± 1.5
114.0	114.1	0.0	± 1.5

Note

- : 1. "Instrument Readings" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.
  - 2. The indication value was obtained from the average of ten replicated measurement.

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NT, Hong Kong

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Report No. : 00181 Issue Date : 24 May 2022

Application No. : HP00060

**Certificate of Calibration** 

Applicant : Cinotech Consultants Limited

RM 1710, Technology Park,

18 On Lai Street,

Shatin, N.T., Hong Kong

Sample Description : Submitted equipment stated to be Integrating Sound Level Meter.

Equipment No.: : N-12-06

Manufacturer: : BSWA Technology

Other information :

Model No.	BSWA 308
Serial No.	580156
Microphone No.	580804

Date Received : 16 May 2022

Test Period : 24 May 2022 to 24 May 2022

Test Requested : Performance checking for Sound Level Meter

Test Method : The Sound Level Calibrator has been calibrated in accordance with the

documented procedures and using standard and instrument which are

recommended by the manufacturer, or equivalent.

Test conditions : Room Temperature: 22-25 degree Celsius

Relative Humidity: 35-70%

Test Result : Refer to the test result(s) on page 2.

Remark: 1. Information of the sample description provided by the Applicant.

2. The result(s) relate only to the items tested or calibrated.

For and on behalf of HIGH PRECISION CHEMICAL TESTING LIMITED

Rm 1904, Technology Park 18 On Lai Street, Shatin

NT, Hong Kong

Tel: +852 3841 4388 Website: https://www.hpct.com.hk



Report No. : 00181 Issue Date : 24 May 2022

Application No. : HP00060

## **Certificate of Calibration**

Measuring equipment

Description	Sound Calibrator
Manufacturer	Brüel & Kjær
Model No.	TYPE 4231
Serial No.	2326353
Equipment No.	N-02-01

Test Result

Reference value, dB	Indication value, dB	Deviation, dB	Allowed deviation, dB
94.0	93.9	-0.1	± 1.5
114.0	114.1	+0.1	± 1.5

Note

- : 1. "Instrument Readings" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.
  - 2. The indication value was obtained from the average of ten replicated measurement.

Rm 1904, Technology Park 18 On Lai Street, Shatin

NT, Hong Kong

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Report No. : 00150 Issue Date : 16 Nov 2021

Application No. : HP00032

**Certificate of Calibration** 

Applicant : Cinotech Consultants Limited

RM 1710, Technology Park,

18 On Lai Street,

Shatin, N.T., Hong Kong

Sample Description : Submitted equipment stated to be Sound Level Calibrator.

Equipment No.: : N-13-01

Manufacturer: : SOUNDTEK

Other information : Model No. ST-120

Serial No. 181001608

Date Received : 05 Nov 2021

Test Period : 08 Nov 2021 to 12 Nov 2021

Test Requested : Performance checking for Sound Level Calibrator

Test Method : The Sound Level Meter and Calibrator has been calibrated in accordance with

the documented procedures and using standard and instrument which are

recommended by the manufacturer, or equivalent.

Test conditions : Room Temperature: 22-25 degree Celsius

Relative Humidity: 35-70%

Test Result : Refer to the test result(s) on page 2.

Remark : 1. Information of the sample description provided by the Applicant.

2. The result(s) relate only to the items tested or calibrated.

For and on behalf of HIGH PRECISION CHEMICAL TESTING LIMITED

Rm 1904, Technology Park 18 On Lai Street, Shatin

NT, Hong Kong

Tel: +852 3841 4388 Website: https://www.hpct.com.hk



Report No. : 00150 | Issue Date : 16 Nov 2021

Application No. : HP00032

## **Certificate of Calibration**

Measuring equipment

Description	Sound Calibrator
Manufacturer	Brüel & Kjær
Model No.	TYPE 4231
Serial No.	2326353
Equipment No.	N-02-01

Description	Sound Meter
Manufacturer	BSWA Technology
Model No.	BSWA 308
Serial No.	570188
Microphone No.	570608
Equipment No.	N-12-03

Test Result

Reference value, dB	Indication value, dB	Deviation, dB	Allowed deviation, dB
94.0	94.1	+0.1	± 0.3
114.0	114.0	0.0	± 0.5

#### Note

- : 1. "Instrument Readings" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.
  - 2. The indication value was obtained from the average of ten replicated measurement.

Rm 1904, Technology Park 18 On Lai Street, Shatin

NT, Hong Kong

Tel: +852 3841 4388 Website: https://www.hpct.com.hk



Report No. : 00152 | Issue Date : 19 Nov 2021

Application No. : HP00034

**Certificate of Calibration** 

Applicant : Cinotech Consultants Limited

RM 1710, Technology Park,

18 On Lai Street,

Shatin, N.T., Hong Kong

Sample Description : Submitted equipment stated to be Integrating Sound Level Meter.

Equipment No.: : N-12-01

Manufacturer: : BSWA Technology

Other information :

Model No.	BSWA 308
Serial No.	570183
Microphone No.	570605

Date Received : 10 Nov 2021

Test Period : 10 Nov 2021 to 17 Nov 2021

Test Requested : Performance checking for Sound Level Meter

Test Method : The Sound Level Calibrator has been calibrated in accordance with the

documented procedures and using standard and instrument which are

recommended by the manufacturer, or equivalent.

Test conditions : Room Temperature: 22-25 degree Celsius

Relative Humidity: 35-70%

Test Result : Refer to the test result(s) on page 2.

Remark: 1. Information of the sample description provided by the Applicant.

2. The result(s) relate only to the items tested or calibrated.

For and on behalf of HIGH PRECISION CHEMICAL TESTING LIMITED

Rm 1904, Technology Park 18 On Lai Street, Shatin

NT, Hong Kong

Tel: +852 3841 4388 Website: https://www.hpct.com.hk



Report No. : 00152 Issue Date : 19 Nov 2021

Application No. : HP00034

## **Certificate of Calibration**

Measuring equipment

Description	Sound Calibrator
Manufacturer	Brüel & Kjær
Model No.	TYPE 4231
Serial No.	2326353
Equipment No.	N-02-01

Test Result :

Reference value, dB	Indication value, dB	Deviation, dB	Allowed deviation, dB
94.0	94.1	+0.1	± 1.5
114.0	114.0	0.0	± 1.5

Note

- : 1. "Instrument Readings" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.
  - 2. The indication value was obtained from the average of ten replicated measurement.

APPENDIX H NOISE MONITORING RESULTS AND GRAPHICAL PRESENTATIONS

### Appendix H - Noise Monitoring Results

#### (0700-1900 hrs on Normal Weekdays)

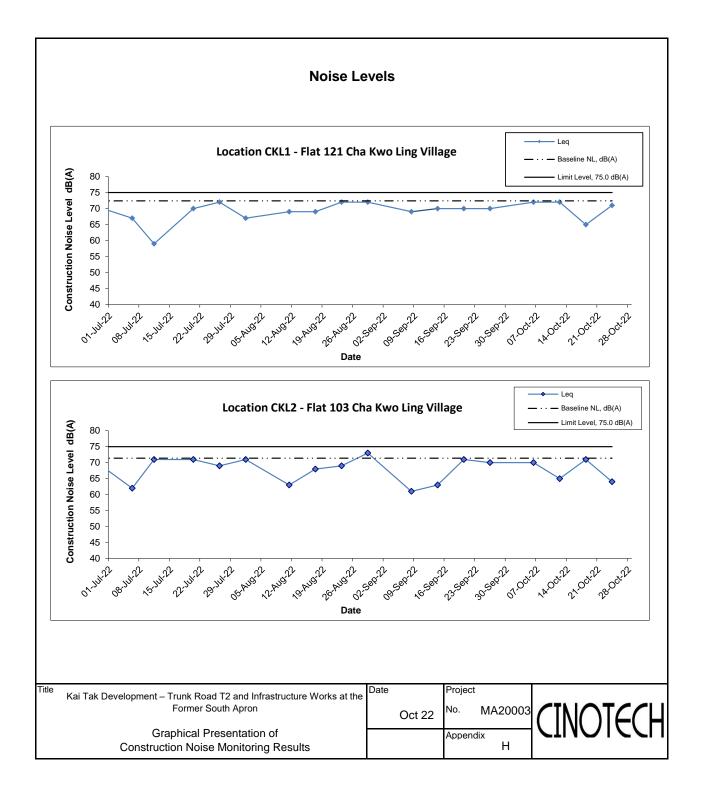
Location CKL1 - Flat 121 Cha Kwo Ling Village									
				Unit: dB					
Date	Time	Weather	Meas	sured Noise	Level	Baseline Level	Construction Noise Level		
Date			L <sub>eq</sub>	L <sub>10</sub>	L 90	L <sub>eq</sub>	L <sub>eq</sub>		
6-Oct-22	10:00	Sunny	72.3	75.0	67.1	72.4	72.3 Measured ≦ Baseline		
12-Oct-22	10:51	Sunny	71.9	75.1	63.5	72.4	71.9 Measured ≦ Baseline		
18-Oct-22	11:00	Cloudy	73.1	74.6	63.0	72.4	65		
24-Oct-22	15:11	Sunny	71.0	75.2	59.5	72.4	71 Measured ≦ Baseline		

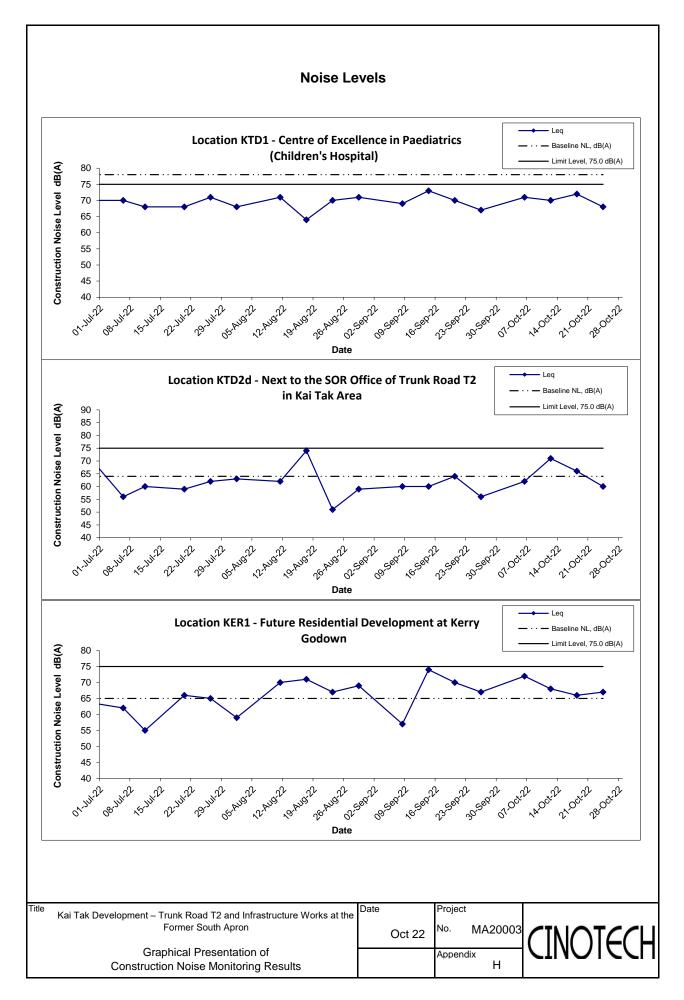
Location CKL2 - Flat 103 Cha Kwo Ling Village										
		Weather		Unit: dB						
Date	Time		Meas	sured Noise	Level	Baseline Level	Construction Noise Level			
			L <sub>eq</sub>	L <sub>10</sub>	L 90	L <sub>eq</sub>	L <sub>eq</sub>			
6-Oct-22	11:30	Sunny	73.6	75.7	70.8	71.4	70			
12-Oct-22	13:19	Sunny	72.3	75.5	64.7	71.4	65			
18-Oct-22	10:29	Cloudy	71.0	74.5	61.4	71.4	71 Measured ≦ Baseline			
24-Oct-22	14:33	Sunny	72.1	75.8	61.4	71.4	64			

<b>Location KTD1</b>	Location KTD1 - Centre of Excellence in Paediatrics (Rooftop of Children's Hospital)									
	Time	Weather	Unit: dB (A) (30-min)							
Date			Meas	sured Noise	_evel	Baseline Level	Construction Noise Level			
Bato										
			L <sub>eq</sub>	L <sub>10</sub>	L 90	L <sub>eq</sub>	∟ <sub>eq</sub>			
6-Oct-22	17:31	Fine	70.6	72.5	68.2	78.0	70.6 Measured ≦ Baseline			
12-Oct-22	17:28	Sunny	70.0	71.7	67.9	78.0	70 Measured ≦ Baseline			
18-Oct-22	17:03	Cloudy	71.8	72.8	70.6	78.0	71.8 Measured ≦ Baseline			
24-Oct-22	17:22	Sunny	68.0	69.8	66.0	78.0	68 Measured ≦ Baseline			

Location KER1	Location KER1 - Future Residential Development at Kerry Godown									
	Time	Weather	Unit: dB (A) (30-min)							
Date			Measured Noise Level			Baseline Level	Construction Noise Level			
Date										
			L <sub>eq</sub>	L <sub>10</sub>	L 90	L <sub>eq</sub>	L <sub>eq</sub>			
6-Oct-22	16:06	Sunny	72.7	73.7	69.4	65.0	72			
12-Oct-22	16:09	Sunny	69.8	71.5	65.6	65.0	68			
18-Oct-22	15:29	Cloudy	68.5	70.0	64.7	65.0	66			
24-Oct-22	16:15	Sunny	68.9	70.9	62.9	65.0	67			

Location KTD2d - Next to the SOR Office of Trunk Road T2 in Kai Tak Area									
	Time	Weather	Unit: dB (A) (30-min)						
Date			Measured Noise Level			Baseline Level	Construction Noise Level		
			L <sub>eq</sub>	L <sub>10</sub>	L 90	L <sub>eq</sub>	L <sub>eq</sub>		
6-Oct-22	14:57	Sunny	66.3	68.0	61.5	64.0	62		
12-Oct-22	15:01	Sunny	71.4	74.2	63.1	64.0	71		
18-Oct-22	14:02	Cloudy	68.1	70.3	63.7	64.0	66		
24-Oct-22	12:21	Sunny	60.2	61.0	57.6	64.0	60 Measured ≦ Baseline		





#### APPENDIX I SITE AUDIT SUMMARY

## Environmental Team for Trunk Road T2 and Infrastructure Works at the Former South Apron

# Weekly Site Inspection Record Summary Inspection Information

Checklist Reference Number	221006
Date	6 October 2022 (Thursday)
Time	09:20 – 12:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
	B. Water Quality	
	No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	No environmental deficiency was identified during site inspection.	
	D. Construction Noise Impact	
	No environmental deficiency was identified during site inspection.	
	E. Waste/Chemical Management	
	No environmental deficiency was identified during site inspection.	
	F. Visual and Landscape	
	No environmental deficiency was identified during site inspection.	
	G. Permits/Licences	
	No environmental deficiency was identified during site inspection.	
	H. Marine Ecology	
	No environmental deficiency was identified during site inspection.	
	I. Others	
	• Follow up on the previous session (Ref No.:220929), all item has been rectified.	

	Name	Signature	Date
Recorded by	Alex Ng	Alex Ng	6 October 2022
Checked by	Karina Chan	Zalle	7 October 2022

### Environmental Team for Trunk Road T2 and Infrastructure Works at the Former South Apron

# Weekly Site Inspection Record Summary Inspection Information

Checklist Reference Number	221013
Date	13 October 2022 (Thursday)
Time	09:20 – 12:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
	<ul> <li>B. Water Quality</li> <li>No environmental deficiency was identified during site inspection.</li> </ul>	Tem 100
	<ul> <li>C. Air Quality</li> <li>No environmental deficiency was identified during site inspection.</li> </ul>	
	<ul> <li>D. Construction Noise Impact</li> <li>No environmental deficiency was identified during site inspection.</li> </ul>	
	E. Waste/Chemical Management	
221013 - R1	Drip tray should be provided to prevent leaked oil from entering drainage system.	E9
	<ul> <li>F. Visual and Landscape</li> <li>No environmental deficiency was identified during site inspection.</li> </ul>	
	<ul> <li>G. Permits/Licences</li> <li>No environmental deficiency was identified during site inspection.</li> </ul>	
	<ul> <li>H. Marine Ecology</li> <li>No environmental deficiency was identified during site inspection.</li> </ul>	
	<ul> <li>I. Others</li> <li>Follow up on the previous session (Ref No.:221006), all item has been rectified.</li> </ul>	

	Name	Signature	Date
Recorded by	Alex Ng	Alex Ng	13 October 2022
Checked by	Karina Chan	Zalle	14 October 2022

#### **Weekly Site Inspection Record Summary**

## Environmental Team for Trunk Road T2 and Infrastructure Works at the Former South Apron

**Inspection Information** 

Checklist Reference Number	221020
Date	20 October 2022 (Thursday)
Time	09:20 – 12:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
	<ul> <li>B. Water Quality</li> <li>No environmental deficiency was identified during site inspection.</li> </ul>	
	<ul> <li>C. Air Quality</li> <li>No environmental deficiency was identified during site inspection.</li> </ul>	
	<ul> <li>D. Construction Noise Impact</li> <li>No environmental deficiency was identified during site inspection.</li> </ul>	
	E. Waste/Chemical Management	
221020 - R1	Drip tray should be provided to prevent leaked oil from entering drainage system.	E9
	<ul> <li>F. Visual and Landscape</li> <li>No environmental deficiency was identified during site inspection.</li> </ul>	
	<ul> <li>G. Permits/Licences</li> <li>No environmental deficiency was identified during site inspection.</li> </ul>	
	<ul> <li>H. Marine Ecology</li> <li>No environmental deficiency was identified during site inspection.</li> </ul>	
	<ul> <li>I. Others</li> <li>Follow up on the previous session (Ref No.:221013), all item has been rectified.</li> </ul>	

	Name	Signature	Date
Recorded by	Alex Ng	Alex Ng	20 October 2022
Checked by	Karina Chan	Jalle	21 October 2022

## Environmental Team for Trunk Road T2 and Infrastructure Works at the Former South Apron

# Weekly Site Inspection Record Summary Inspection Information

Checklist Reference Number	221027
Date	27 October 2022 (Thursday)
Time	09:20 – 12:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
	<ul> <li>B. Water Quality</li> <li>No environmental deficiency was identified during site inspection.</li> </ul>	
221027 – R2	<ul><li>C. Air Quality</li><li>The damaged NRMM label was observed.</li></ul>	C21
	<ul> <li>D. Construction Noise Impact</li> <li>No environmental deficiency was identified during site inspection.</li> </ul>	
	E. Waste/Chemical Management	
221027 – R1	The C&D material were observed in the tunnel area, the waste should be cleaned regularly.	EI
	<ul> <li>F. Visual and Landscape</li> <li>No environmental deficiency was identified during site inspection.</li> </ul>	
	<ul> <li>G. Permits/Licences</li> <li>No environmental deficiency was identified during site inspection.</li> </ul>	
	<ul> <li>H. Marine Ecology</li> <li>No environmental deficiency was identified during site inspection.</li> </ul>	
	<ul> <li>I. Others</li> <li>Follow up on the previous session (Ref No.:221020), all item has been rectified.</li> </ul>	

	Name	Signature	Date
Recorded by	Alex Ng	Alex Ng	27 October 2022
Checked by	Karina Chan	Zalle	28 October 2022

## Environmental Team for Trunk Road T2 – Traffic Control and Surveillance System (TCSS) and **Associated Works**

# Site Inspection Record Summary Inspection Information

Checklist Reference Number	221028
Date	28 October 2022 (Friday)
Time	09:30 – 12:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
	B. Water Quality	
	No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	No environmental deficiency was identified during site inspection.	
	D. Construction Noise Impact	
	No environmental deficiency was identified during site inspection.	
	E. Waste/Chemical Management	
	No environmental deficiency was identified during site inspection.	
	F. Visual and Landscape	
	• No environmental deficiency was identified during site inspection.	
	G. Permits/Licences	
	No environmental deficiency was identified during site inspection.	
	I. Others	
	• Follow up on the previous session (Ref No.:220923), no major environmental deficiency was	
	identified during site inspection.	

	Name	Signature	Date
Recorded by	Alex Ng	Alex NG	28 October 2022
Checked by	Karina Chan	Zalle	29 October 2022

### APPENDIX J EVENT AND ACTION PLANS

**Table J-1** Event/Action Plan for Air Construction Dust Monitoring

Table J-1	Event/Action Fign for All Construction Dust Monitoring			
Event		Ac	tion	
Event	ET	IEC	ER	Contractor
<b>Action Level</b>				
1. Exceedance for	1. Identify source, investigate	Check monitoring data	1. Notify Contractor.	1. Rectify any unacceptable
one sample	the causes of complaint and	submitted by ET;		practice;
	propose remedial measures;	2. Check Contractor's working		2. Amend working methods
	2. Inform IEC and ER;	method.		agreed with the ER as
	3. Repeat measurement to			appropriate.
	confirm finding;			
	4. Increase monitoring			
	frequency.			
2. Exceedance by	1. Identify source;	Check monitoring data	1. Notify Contractor;	1. Submit proposals for
two or more	2. Inform IEC and ER;	submitted by ET;	2. Ensure remedial measures	remedial actions to IEC
consecutive	3. Advise the ER on the	2. Check Contractor's working	properly implemented.	within three working days of
samples	effectiveness of the proposed	method;		notification;
	remedial measures;	3. Discuss with ET, ER and		2. Implement the agreed
	4. Repeat measurements to	Contractor on possible		proposals;
	confirm findings;	remedial measures if		3. Amend proposal if
	5. Increase monitoring	required;		appropriate.
	frequency to daily;	4. Advise the ER on the		
	6. Discuss with IEC, ER and	effectiveness of the proposed		
	Contractor on remedial	remedial measures;		
	actions required;			

Ewant	Action			
Event	ET	IEC	ER	Contractor
	<ul><li>7. If exceedance continues, arrange meeting with IEC, Contractor and ER;</li><li>8. If exceedance stops, cease</li></ul>			
	additional monitoring.			
Limit level				
Exceedance for one sample	<ol> <li>Identify source, investigate         the causes of exceedance and         propose remedial measures;</li> <li>Inform the IEC, ER, and         Contractor;</li> <li>Repeat measurement to         confirm finding;</li> <li>Increase monitoring         frequency to daily;</li> <li>Assess effectiveness of         Contractor's remedial actions         and keep IEC and ER         informed of the results.</li> </ol>	<ol> <li>Check monitoring data submitted by ET;</li> <li>Check Contractor's working method;</li> <li>Discuss with ET, ER and Contractor on possible remedial measures;</li> <li>Advise the ER and ET on the effectiveness of the proposed remedial measures;</li> <li>Supervise implementation of remedial measures.</li> </ol>	<ol> <li>Confirm receipt of notification of exceedance in writing;</li> <li>Notify Contractor;</li> <li>Ensure remedial measures properly implemented.</li> </ol>	<ol> <li>Take immediate action to avoid further exceedance;</li> <li>Submit proposals for remedial actions to the ER and copy to the ET and IEC within three working days of notification;</li> <li>Implement the agreed proposals;</li> <li>Amend proposal if appropriate.</li> </ol>
Exceedance for two or more consecutive	<ol> <li>Notify IEC, ER and Contractor;</li> <li>Identify source;</li> </ol>	Discuss amongst ER, ET, and     Contractor on the potential     remedial actions;	Confirm receipt of     notification of exceedance in     writing;	<ol> <li>Take immediate action to avoid further exceedance;</li> <li>Submit proposals for remedial</li> </ol>

Errord	Action					
Event	ET	IEC ER	Contractor			
samples	3. Repeat measurement to	2. Review Contractor's 2. Notify Contractor;	actions to ER and copy to the			
	confirm findings;	remedial actions whenever 3. In consolidation with the IEC	IEC and ET within three			
	4. Increase monitoring	necessary to assure their and ET, agree with the	working days of notification;			
	frequency to daily;	effectiveness and advise the Contractor on the remedial	3. Implement the agreed			
	5. Carry out analysis of	ER and ET accordingly; measures to be implemented;	proposals;			
	Contractor's working	3. Supervise the 4. Ensure remedial measures	4. Resubmit proposals if			
	procedures with the ER to	implementation of remedial properly implemented;	problem still not under			
	determine possible mitigation	measures. 5. If exceedance continues,	control;			
	to be implemented;	consider what portion of the	5. Stop the relevant portion of			
	6. Arrange meeting with IEC	work is responsible and	works as determined by the			
	and ER to discuss the	instruct the Contractor to	ER until the exceedance is			
	remedial actions to be taken;	stop that portion of work	abated.			
	7. Assess effectiveness of	until the exceedance is				
	Contractor's remedial actions	abated.				
	and keep IEC, EPD and ER					
	informed of the results;					
	8. If exceedance stops, cease					
	additional monitoring.					

**Table J-2 Event/Action Plan for Construction Noise Monitoring** 

TO 4	Action					
Event	ET	IEC ER	Contractor			
Action Level	1. Notify IEC, ER and	1. Review the monitoring data 1. Notify Contractor;	1. Submit noise mitigation			
	Contractor;	submitted by the ET;  2. Require Contractor to propose	proposals to the ER and copy			
	2. Carry out investigation;	2. Review the construction remedial measures for	to the IEC and ET;			
	3. Report the results of	methods and proposed redial implementation if required.	2. Implement noise mitigation			
	investigation to the IEC and	measures by the Contractor,	proposals.			
	Contractor;	and advise the ET and ER if				
	4. Discuss jointly with the ER	the proposed remedial				
	and formulate remedial	measures would be				
	measures;	sufficient.				
	5. Increase monitoring					
	frequency to check					
	mitigation effectiveness.					
Limit Level	1. Notify IEC, ER and	1. Discuss amongst ER, ET, and 1. Confirm receipt of	1. Take immediate action to			
	Contractor;	Contractor on the potential notification of failure in	avoid further exceedance;			
	2. Identify source;	remedial actions; writing;	2. Submit proposals for			
	3. Repeat measurements to	2. Review the Contractor's 2. Notify Contractor;	remedial actions to the ER			
	confirm findings;	remedial actions whenever 3. Require Contractor to	and copy to the ET and IEC			
	4. Carry out analysis of	necessary to assure their propose remedial measures	within 3 working days of			
	Contractor's working	effectiveness and advise the for the analysed noise	notification;			

E4		Act	tion	
Event	ET	IEC	ER	Contractor
	procedures to determine	ER accordingly;	problem;	3. Implement the agreed
	possible mitigation to be	3. Supervise the	4. Ensure remedial measures	proposals;
	implemented;	implementation of remedial	properly implemented;	4. Resubmit proposals if
	5. Record the causes and action	measures.	5. If exceedance continues,	problem still not under
	taken for the exceedances;		consider what portion of the	control;
	6. Increase the monitoring		work is responsible and	5. Stop the relevant portion of
	frequency;		instruct the Contractor to stop	works as determined by the
	7. Assess the effectiveness of		that portion of work until the	ER until the exceedance is
	the Contractor's remedial		exceedance is abated.	abated.
	action with the ER and keep			
	the IEC informed of the			
	results;			
	8. If exceedance stops, cease			
	additional monitoring.			

Table J-3 Event/Action Plan for Landscape and Visual

Event			Action	
	ET	IEC	ER	Contractor
Non-conformity	1. Identify Source;	1. Check report;	1. Notify Contractor;	1. Amend working methods;
on one occasion	2. Inform the IEC and the ER;	2. Check Contractor's working	2. Ensure remedial measures	2. Rectify damage and undertake
	3. Discuss remedial actions with	method;	are properly implemented.	any necessary replacement.
	IEC, ER and Contractor	3. Discuss with ET and the		
	4. Monitor remedial actions until	Contractor on possible		
	rectification has been	remedial measures;		
	completed.	4. Advise ER on effectiveness		
		of proposed remedial		
		measures;		
		5. Check implementation of		
		remedial measures		

Event		Action	
	ET	IEC ER	Contractor
Repeated	1. Identify source;	1. Check monitoring report; 1. Notify Contra	actor; 1. Amend working methods;
Non-conformity	2. Inform the IEC and the ER;	2. Check Contractor's working 2. Ensure remed	dial measures 2. Rectify damage and undertake
	3. Increase monitoring frequency;	method; are properly i	mplemented. any necessary replacement.
	4. Discuss remedial actions with	3. Discuss with ET and the	
	the IEC, the ER and the	Contractor on possible	
	Contractor;	remedial measures;	
	5. Monitor remedial actions until	4. Advise ER on effectiveness	
	rectification has been	of proposed remedial	
	completed;	measures;	
	6. If exceedance stops, cease	5. Check implementation of	
	additional monitoring.	remedial measures	

APPENDIX K ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE (EMIS)

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Location/Timing	Implementation Agent	Relevant Standard or Requirement	Impler	nentatio	n Stages	Status
						D	С	0	
Air Quality Impa	act		•						
S2.3.1.1	The specific mitigation comprises the following: watering of the construction areas 12 times per day to reduce dust emissions by	To minimize dust emission during construction works	All relevant works sites, conveyor belts and stockpiles	Contractor and Sub- contractors	APCO / EIAO	Y	Y		۸
	91.7%, with reference to the "Control of Open Fugitive Dust Sources" (USEPA	construction works	stockpiles						
	AP-42). The amount of water to be applied would be $0.91 L/m^2$ for the respective watering frequency;								
	Dust enclosures with watering would be provided along the loading ramps and conveyor belts for unloading the C&D materials to the barge for dust suppression; and								N/A(1)
	3-sided barriers around the stockpiling areas WA3 and WA4.								^
S2.3.1.2	The dust control measures detailed below shall also be incorporated into the Contract Specification where practicable as an integral part of good construction practice:	To minimize dust emission during construction works	All relevant works sites	Contractor and Sub- contractors	APCO / EIAO	Y	Y		۸
	Use of regular watering to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather;								
	Use of frequent watering for particularly dusty construction areas and areas close to ASRs;								۸
	Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines;								۸

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Location/Timing	Implementation Agent	Relevant Standard or Requirement	Implen	nentatio	n Stages	Status
						D	С	0	
	Open stockpiles shall be avoided or covered. Prevent placing dusty material storage piles near ASRs;								۸
	Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations;								۸
	Establishment and use of vehicle wheel and body washing facilities at the exit points of the site;								۸
	Imposition of speed controls for vehicles on unpaved site roads, 8 km per hour is the recommended limit;								N/A(1)
	Routing of vehicles and position of construction plant should be at the maximum possible distance from ASRs;								۸
	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;								۸
	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; and								N/A(1)
	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(1)

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Location/Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages		Implementation Stages		Implementation Stages	
						D	С	0			
Noise Impact		1	1		1	1	1	1			
S3.4.1.1	The use of quieter plant, including Quality Powered Mechanical Equipment (QPME) is specified for the list of equipment:  - Concrete lorry mixer  - Dump Truck, 5.5 tonne < gross vehicle weight ≤ 38 tonne  - Generator, Super Silenced, 70 dB(A) at 7m  - Poker, vibratory, Hand-held (electric)  - Water Pump, Submersible (Electric)  - Mobile Crane - KOBELCO CKS900  - Excavator, wheeled/tracked - HYUNDAI R80CR-9	To minimise airborne noise impacts	All relevant works sites	Contractor and Sub- contractors	NCO / EIAO		Y		۸		
S3.4.1.1	Use of temporary or fixed noise barriers with a surface density of at least $10 \text{kg/m}^2$ to screen noise from movable and stationary plant.	To minimise air- borne noise impacts	All relevant works sites	Contractor and Sub- contractors	NCO / EIAO		Y		۸		
S3.4.1.1	Use of enclosures with covers at top and three sides and a surface density of at least 10kg/m <sup>2</sup> to screen noise from generally static noisy plant such as air compressors.	To minimise air- borne noise impacts	All relevant works sites	Contractor and Sub- contractors	NCO / EIAO		Y		N/A(1)		
S3.4.1.1	Use of acoustic fabric for the silent piling system, drill rigs, rock drills etc.	To minimise air- borne noise impacts	All relevant works sites	Contractor and Sub-contractors	NCO / EIAO		Y		۸		
S3.4.1.1	Proper fitting of silencers and mufflers on the ventilation fans.	To minimise air- borne noise impacts	All relevant works sites	Contractor and Sub-contractors	NCO / EIAO		Y		N/A(1)		
S3.4.1.1	Implementation of good site practice:  Only well-maintained plant should be operated on-site and plants should be serviced regularly during the construction period;  Mobile plant, if any, should be sited as far from NSRs as possible;  Plant known to emit noise strongly in one direction should, wherever possible, be properly orientated so that the noise is directed away from the nearby NSRs;	To minimise airborne noise impacts	All relevant works sites	Contractor and Sub- contractors	NCO / EIAO		Y		^		

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Location/Timing	Implementation Agent	Relevant Standard or Requirement	Impler	nentatio	n Stages	Status
						D	С	0	
	Use of site hoarding as a noise barrier to screen noise at low level NSRs;								۸
	Machines and plant that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum; and								۸
	Any material stockpiles and other structures should be effectively utilised, wherever practicable, to screen the noise from on-site construction activities.								۸
	The advancing speed of the TBM should be restricted to 2m/hr in order to ensure compliance with the daytime ground-borne noise limits.								N/A
Water Quality									
S4.2.1.1	In accordance with the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN 1/94), construction phase mitigation measures shall include the following:  Surface run-off from the construction site, including all Works Areas, will be discharged into storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sedimentation basins. At the establishment of works sites and works areas including the barging point, 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 to divert the storm water to the silt removal facilities. The design of the temporary on-site drainage system will be undertaken by the Contractor prior to the commencement of construction and the catch-pits and perimeter channels would be constructed in advance of site formation works and earthworks;	To control water quality impact from construction site runoff and general construction activities	All works sites	Contractor and Sub- contractors	Water Pollution Control Ordinance / ProPECC PN 1/94		Y		^
	Dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas and Works Areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a site/sediment trap;								۸

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Location/Timing	Implementation Agent	Relevant Standard or Requirement	Implen	nentatio	n Stages	Status
						D	С	0	
	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. The sizes may vary depending upon the flow rate, but for a flow rate of $0.1 \text{m}^3$ /s, a sedimentation basin of $30 \text{m}^3$ would be required and for a flow rate of $0.5 \text{m}^3$ /s the basin would be $150 \text{m}^3$ . All effluent discharged from the construction site should comply with the standards stipulated in the TM-DSS. The detailed design of the sand/silt traps shall be undertaken by the Contractor prior to the commencement of construction;								N/A(1)
	In accordance with ProPECC PN 1/94, the construction works should be programmed to minimise surface excavation works during rainy seasons (April to September), as far as practicable. All exposed earth areas should be completed and vegetated as soon as possible after the earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means;								۸
	The overall slope of works sites should be kept to a minimum to reduce the erosive potential of surface water flows, and all trafficked areas and access roads should be protected by coarse stone ballast. An additional advantage accruing from the use of crushed stone is the positive traction gained during the prolonged periods of inclement weather and the reduction of surface sheet flows;								۸
	All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure their proper and efficient operation at all times particularly following rainstorms. Deposited silts and grits should be removed regularly and disposed of by spreading evenly over stable, vegetated areas;								۸
	Measures should be taken to minimise the ingress of site drainage into excavations. If the excavation of trenches in wet season is inevitable, they should be dug and backfilled in short sections wherever practicable. The water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities;								۸

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Location/Timing	Implementation Agent	Relevant Standard or Requirement	Impler	nentatio	n Stages	Status
						D	С	0	
	Open stockpiles of construction materials (for example, aggregates, sand and fill material) should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system;								۸
	Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers;								۸
	Precautions to be taken at any time of the year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted and during or after rainstorms, are summarised in Appendix A2 of ProPECC PN 1/94.  Particular attention should be paid to the control of silty surface runoff during storm events;								N/A(1)
	All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at the exit of every construction site 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-washing bay to public roads should be paved with sufficient backfall toward the wheel- washing bay to prevent vehicle tracking of soil and silty water to public roads and drains;								۸
	Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources, specifically Works Areas WA1, WA2, WA4 and WA5 where plant maintenance is proposed. 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 oil interceptors to prevent flushing during heavy rain;								N/A(1)
	The construction solid waste, debris and rubbish on-site should be collected, handled and disposed of properly to avoid causing any water quality impacts. The requirements for solid waste management are detailed in Section 11 Waste Management of this EIA report; and								۸
	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 the nearby WSRs.								۸

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	ded Main	ning Implementation Agent	Relevant Standard or Requirement	Impler	nentatio	n Stages	Status
						D	С	0	
\$4.2.1.1 and 4.3.1.5	There is a need to apply to the EPD for a discharge licence for discharge of effluent from the construction site under the WPCO. The discharge quality must meet the requirements specified in the discharge licence. All the runoff and wastewater generated from the works areas should be treated so that it satisfies all the standards listed in the TM-DSS. Minimum distances of 100m should be maintained between the discharge points of construction site effluent and the existing seawater intakes. The beneficial uses of the treated effluent for other onsite activities such as dust suppression, wheel washing and general cleaning etc, can minimise water consumption and reduce the effluent discharge volume. If monitoring of the treated effluent quality from the works areas is required during the construction phase of the Project, the monitoring should be carried out in accordance with the WPCO license	To control water quality impact from effluent discharge from construction site	All works sites	Contractor and Sub- contractors	Water Pollution Control Ordinance		Y		N/A(1)
S4.2.1.1	Specific mitigation measures for the tunnelling works using TBM, soft ground and mechanical excavation techniques should include the following:  The cut-and-cover tunnelling works should be conducted sequentially as far as practicable to limit the amount of construction wastewater generated from the exposed areas during the wet season (April to September);	To minimize construction water quality impact from tunnelling and excavation works	All tunnelling and excavation portion	Contractor and Sub- contractors	TMEIA TMwater ProPECC PN 1/94 WPCO		Y		N/A
	Uncontaminated discharge should pass through settlement tanks prior to discharge;  If contaminated groundwater is found during the course of the works, no direct discharge of groundwater from contaminated areas should be adopted. Any contaminated groundwater should be properly treated in compliance with the requirements of the TM-DSS. If wastewater treatment is to be deployed for treating the contaminated groundwater, the wastewater treatment unit should deploy suitable treatment processes (e.g. oil interceptor/activated carbon) to reduce the pollution level to an acceptable standard and remove any prohibited substances (such as TPH) to an undetectable range;								N/A N/A
	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;								N/A

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Location/Timing	Implementation Agent	Relevant Standard or Requirement	Impler	nentatio	n Stages	Status
						D	С	0	
	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
	The wastewater with high concentrations of SS should be treated such as by settlement in 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
S4.2.1.1	In order to prevent any accidental release of bentonite slurry from getting into the surrounding environment, the following specific control measures shall be followed to reduce the risk and impacts of accidental spillage:  All bentonite slurry should be stored in a container that resistant to corrosion, maintained in good conditions and securely closed;  The container should be labelled in English and Chinese and note that the container is for storage of bentonite slurry only;  The storage container should be placed on an area of impermeable flooring and bunded with capacity to accommodate 110% of the volume of the container size	To control water quality impact from bentonite slurry	All relevant works sites	Contractor and Sub- contractors	WPCO		Y		^ N/A(1)
	or 20% by volume stored in the area and enclosed with at least 3 sides;  The storage container should be sufficiently covered to prevent rainfall entering the container or bunded area (water collected within the bund must be tested and disposed of as chemical waste, if necessary);  An emergency clean up kit shall be readily available where bentonite fluid will be stored or used; and								N/A(1)

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Location/Timing	Implementation Agent	Relevant Standard or Requirement	Implen	nentation	n Stages	Status
						D	С	0	
	The handling and disposal of bentonite slurries should be undertaken in accordance within ProPECC PN 1/94. Surplus bentonite slurries used in construction works shall be reconditioned and reused wherever practicable. Residual bentonite slurry shall be disposed of from the site as soon as possible as stipulated in Clause 8.56 of the General Specification for Civil Engineering Works. The Contractor should explore alternative disposal outlets for the residual bentonite slurry (dewatered bentonite slurry to be disposed to a public filling area and liquid bentonite slurry, if mixed with inert fill material, to be disposed to a public filling area) and disposal at landfill should be the last resort.								N/A(1)
S4.2.1.1		To minimize construction water quality impact from barging point	Barging Point	Contractor and Sub- contractors	EIAO-TM WPCO		Y		N/A(1)
	All hopper barges should be fitted with tight fitting seals to their bottom openings to prevent leakage of material;  Construction activities should not cause foam, oil, grease, scum, litter or other								^ N/A(1)
	objectionable matter to be present on the water within the site; and								IV/A(1)
	Loading of barges and hoppers should be controlled to prevent splashing of material into the surrounding water. Barges or hoppers should not be filled to a level that will cause the overflow of materials or polluted water during loading or transportation.								N/A
S4.2.1.1	If chemical toilets and sewage holding tanks are required for handling sewage generated by the construction workforce, a licensed contractor should be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance.	To minimize construction water quality impact from sewage and effluent	All works sites	Contractor	WPCO		Y		۸

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Agent Agent	Relevant Standard or Requirement	Impler	nentatio	n Stages	Status	
						D	С	0	
S4.2.1.1	In order to protect against impacts to the surrounding marine waters of the KTTS and Victoria Harbour in the event of an accidental spillage of fuel or oil, the Contractor will be required to prepare a spill response plan to the satisfaction of AFCD, EPD, FSD, Police, TD and WSD to define procedures for the control, containment and clean-up of any spillage that could occur on the construction site.	To control water quality impact from accidental chemical spillage	All works sites	Contractor	EIAO-TM WPCO WDO		Y		N/A(1)
S4.2.1.1	The Contractor must, also, register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.	To control water quality impact from accidental chemical spillage	All works sites	Contractor	EIAO-TM WPCO WDO		Y		N/A(1)
S4.2.1.1	Any service shop and maintenance facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided.  Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.	To control water quality impact from accidental chemical spillage	All works sites	Contractor	EIAO-TM WPCO WDO		Y		N/A(1)
S4.2.1.1	Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows:	To control water quality impact from accidental chemical spillage	All works sites	Contractor	EIAO-TM WPCO WDO		Y		۸
	Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport;								
	Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents; and								N/A(1)
	Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area.								۸

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Location/Timing	Implementation Agent	Relevant Standard or Requirement	Implem	nentatio	n Stages	Status
						D	С	0	
S4.2.1.1	The road drainage in the tunnel should pass through oil interceptors to remove oil, and grease before being discharged into the public storm water drainage system;	To mitigate runoff from tunnel during the operational phase	Tunnel	CEDD	WPCO			Y	N/A
	Silt traps and oil interceptors should be cleaned and maintained regularly; and								N/A
	The oily contents of oil interceptors should be transferred to an appropriate disposal facility, or to be collected for reuse, if possible.								N/A
Marine Ecology									
S5.3.1.1	Good construction practice measures have been recommended to be implemented as follows:	Minimize waste generation during construction	Contractor	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3		Y		N/A(1)
	Avoid damage and disturbance to the remaining and surrounding natural habitat;								
	Placement of equipment in designated areas within the existing disturbed land;								N/A(1)
	Spoil heaps should be covered at all times;	]							N/A(1)
	Construction activities should be restricted to the designated works areas; and								N/A(1)
	Disturbed areas to be reinstated immediately after completion of the works.								N/A(1)
Fisheries									
S6.2.1.2	No fisheries specific mitigation measures.								

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	d ain	Location/Timing Implementation Agent Relevant Standard or Requirement						n Stages	Status
						D	С	0			
Landscape and	Visual	•		•	•						
\$7.2.1.2	All works shall be carefully designed to minimize impacts on existing landscape resources and visually sensitive receivers. Existing trees within works area shall be retained and protected.	To minimise impact on existing trees	All relevant works sites	CEDD's Contractor	EIAO TM	Y	Y		۸		
S7.2.1.2	Existing trees of good quality and condition that are unavoidably affected by the works should be transplanted.	To minimise impact on existing trees	All relevant works sites	CEDD's Contractor	EIAO TM	Y	Y		N/A		
\$7.2.1.2	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.	To prevent unnecessary dust and dirt contaminating the air and adjacent areas.	All relevant works sites	CEDD's Contractor	EIAO TM		Y		۸		
\$7.2.1.2	Construction plant and building material shall be orderly and carefully stored in order to create a neat and tidy visual appearance.	To mitigate potential visually obtrusive areas	All relevant works sites	CEDD's Contractor	EIAO TM		Y		۸		
\$7.2.1.2	Erection of decorative screen hoarding should be designed to be compatible with the existing urban context.	To mitigate and screen any potential visually obtrusive areas and enhance urban environment	All relevant works sites	CEDD's Contractor	EIAO TM		Y		۸		
\$7.2.1.2	All lighting in construction site shall be carefully controlled to minimize light pollution and night-time glare to nearby residences and GIC user. The contractor shall consider other security measures, which shall minimize the visual impacts.	To mitigate light pollution and adverse visual impacts on surrounding environment	All relevant works sites	CEDD's Contractor	EIAO TM		Y		۸		
S7.2.1.2	Compensatory tree planting shall be incorporated along all roadside amenity areas affected by the construction works. The required numbers and locations of compensatory trees shall be determined and agreed with the Government during Tree Removal Application process under ETWB TCW No. 3/2006.	To reinstate and maximise compensatory tree numbers to equal or greater conditions	All relevant works sites	CEDD's Contractor	EIAO TM		Y		N/A(1)		

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Location/Timing	Implementation Agent	Relevant Standard or Requirement	Implei	nentatio	n Stages	Status
						D	С	0	
\$7.2.1.2	Compensatory tree planting shall be incorporated by the Project. The required numbers of compensatory trees shall follow the requirements of ETWB TCW No. 3/2006. Loss of amenity area adjacent to the Kwun Tong By-pass and planting areas in KTD South Apron will be mitigated by the creation of the Kai Tak South Apron: Amenity Area, which will be equal to or larger than the current provision.	To reinstate and maximise compensatory tree	All relevant works sites	CEDD's Contractor	EIAO TM		Y		N/A(1)
\$7.2.1.2	Trees and shrubs and climbers etc. shall be planted to soften and screen proposed roads, central strip and associated structure, and to enhance streetscape greening effect where appropriate.	To mitigate hard surfaces and hard standing landscape areas and to soften and enhance proposed design features	All relevant works sites	CEDD's Contractor	EIAO TM	Y		Y	N/A
S7.2.1.2	All works area, excavated area and disturbed area 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.	To reinstate and maximise hard and soft landscape areas to equal or greater conditions	All relevant works sites	CEDD's Contractor	EIAO TM	Y		Y	N/A
S7.2.1.2	Tunnel portals and all above ground structures shall be sensitively designed to ensure the element with colour, texture and tonal quality being compatible to the existing urban context. Trees and shrub planting to minimize the potential adverse landscape and visual impacts shall be included where space permits. Roof top greening and vertical greening shall also be provided.	To mitigate hard surfaces and hard standing landscape areas and to soften and enhance proposed design features	All relevant works sites	CEDD's Contractor	EIAO TM	Y		Y	N/A
\$7.2.1.2	All works shall be carefully designed to minimize impacts on existing landscape resources and visually sensitive receivers. Existing trees within works area shall be retained and protected.	To minimise impact on existing trees	All relevant works sites	CEDD's Contractor	EIAO TM	Y		Y	N/A
S7.2.1.2	Existing trees of good quality and condition that are unavoidably affected by the works should be transplanted.	To minimise impact on existing trees	All relevant works sites	CEDD's Contractor	EIAO TM	Y		Y	N/A
Cultural Heritag	ge			•				<u> </u>	
S8.2.1.1 and 8.2.1.2	No culture heritage specific mitigation measures								

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Location/Timing	Implementation Agent	Relevant Standard or Requirement	Impler	mentatio	n Stages	Status
						D	С	0	
Waste Managem	ent Implication		l .		1				
S9.2.1.2	The requirements as stipulated in the ETWB TC(W) No.19/2005 Environmental Management on Construction Sites and the other relevant guidelines should be included in the Particular Specification for the future contractor as appropriate.	To keep trace of the generation, minimization, reuse and disposal of C&D materials	All areas / throughout construction period	Contractor	ETWB TC(W) No.19/2005		Y		N/A
S9.2.1.2	The future contractor should be requested to submit an outline Waste Management Plan (WMP) prior to the commencement of construction work, in accordance with the ETWB TC(W) No.19/2005 so as to provide an overall framework of waste management and reduction. The WMP should include:  - Waste management policy; - Record of generated waste; - Waste reduction target; - Waste reduction programme; - Role and responsibility of waste management team; - Benefit of waste management; - Analysis of waste materials; - Reuse, recycling and disposal plans; - Transportation process of waste products; and - Monitoring and action plan.	To keep trace of the generation, minimization, reuse and disposal of C&D	All areas / throughout construction period	Contractor	ETWB TC(W) No.19/2005		Y		N/A(1)
S9.2.1.2	The waste management hierarchy should be strictly followed. This hierarchy should be adopted to evaluate the waste management options in order to maximise the extent of waste reduction and cost reduction. The records of quantities of waste generated, recycled and disposed (locations) should be properly documented.	To keep trace of the generation, minimization, reuse and disposal of C&D	All areas / throughout construction period	Contractor	ETWB TC(W) No.19/2005		Y		N/A(1)
\$9.2.1.2	A trip-ticket system should be established in accordance with DevB TC(W) No. 6/2010 and Waste Disposal (Charges for Disposal of Construction Waste) Regulation to monitor the disposal of public fill and solid wastes at public filling facilities and landfills, and to control fly-tipping. A trip-ticket system would be included as one of the contractual requirements for the future contractor to strictly implement. The Engineer would also regularly audit the effectiveness of the system.	To monitor disposal of waste and control fly-tipping	All areas / throughout construction period	Contractor	DEVB TC(W) No. 6/2010		Y		N/A(1)

EM&A Ref.	Recommended Mitigation Measures		Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status	
						D	С	0	
S9.2.1.2	A recording system for the amount of waste generated, recycled and disposed (locations) should be established. The future contractor should also provide proper training to workers regarding the appropriate concepts of site cleanliness and waste management procedures, e.g. waste reduction, reuse and recycling all the time.	To monitor disposal of waste and control fly-tipping	All areas / throughout construction period	Contractor	DEVB TC(W) No. 6/2010		Y		N/A(1)
S9.2.1.2	The CEDD should be timely notified of the estimated spoil volumes to be generated and the PFC should be notified and agreement sort on the disposal of surplus inert C&D materials e.g. good quality rock during detailed design of the Trunk Road T2 Project. Wherever practicable, C&D materials should be segregated from other wastes to avoid contamination and to ensure acceptability at public filling areas or reclamation sites.	To monitor disposal of waste and control fly-tipping	All areas / throughout construction period	Contractor	DEVB TC(W) No. 6/2010		Y		N/A(1)
S9.2.1.2	The extent of cutting operation should be optimised where possible. Earth retaining structures and bored pile walls should be proposed to minimise the extent of cutting.	To minimize, reuse and disposal of C&D materials	_	Contractor	DevB TC(W) No.6/2010		Y		N/A(1)
S9.2.1.2	Inert C&D materials from road pavement would be reused for backfilling where possible	To minimize, reuse and disposal of C&D materials	_	Contractor	DevB TC(W) No.6/2010		Y		N/A(1)
S9.2.1.2	TBM generated alluvium and other C&D materials should be treated at a slurry treatment plant prior to transferring to Public Fill Reception Facilities.	To minimize, reuse and disposal of C&D materials	TMB works area / during TBM works	Contractor	DevB TC(W) No.6/2010		Y		N/A
S9.2.1.2	The site and surroundings should be kept tidy and litter free.	To implement good site practice for handling, sorting reuse and recycling of wastes	All areas / throughout construction period	Contractor	WDO, Land (Miscellaneous Provisions) Ordinance, DevB TC(W) No. 6/2010		Y		*

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	1	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
						D	C	0	
S9.2.1.2	No waste is allowed to be burnt on site.	To implement good site practice for handling, sorting reuse and recycling of wastes	All areas / throughout construction period	Contractor	WDO, Land (Miscellaneous Provisions) Ordinance, DevB TC(W) No. 6/2010		Y		^
\$9.2.1.2	Make provisions in contract documents to allow and promote the use of recycled aggregates where appropriate.	To implement good site practice for handling, sorting reuse and recycling of wastes	Detailed Design	Design Consultant	WDO, Land (Miscellaneous Provisions) Ordinance, DevB TC(W) No. 6/2010	Y			N/A(1)
S9.2.1.2	Prohibit the future contractor to dispose of C&D materials at any sensitive locations e.g. natural habitat, etc. The future contractor should propose the final disposal sites in the WMP for approval before implementation.	To implement good site practice for handling, sorting reuse and recycling of wastes	All areas / throughout construction period	Contractor	WDO, Land (Miscellaneous Provisions) Ordinance, DevB TC(W) No. 6/2010		Y		N/A(1)
S9.2.1.2	Stockpiled C&D materials should be covered by tarpaulin and/or watered as appropriate to prevent windblown dust and surface run off.	To implement good site practice for handling, sorting reuse and recycling of wastes	All areas / throughout construction period	Contractor	WDO, Land (Miscellaneous Provisions) Ordinance, DevB TC(W) No. 6/2010		Y		۸
S9.2.1.2	Excavated C&D materials in trucks should be covered by tarpaulins to reduce the potential for spillage and dust generation.	To implement good site practice for handling, sorting reuse and recycling of wastes	All areas / throughout construction period	Contractor	WDO, Land (Miscellaneous Provisions) Ordinance, DevB TC(W) No. 6/2010		Y		۸
\$9.2.1.2	Wheel washing facilities should be used by all trucks leaving the site to prevent transferring mud trails onto public roads.	To implement good site practice for handling, sorting reuse and recycling of wastes	All areas / throughout construction period	Contractor	WDO, Land (Miscellaneous Provisions) Ordinance, DevB TC(W) No. 6/2010		Y		۸
S9.2.1.2	Excavated marine deposit (sediment) should be disposed of in a gazetted marine disposal ground under the requirements of the DASO or treated for backfilling.	To ensure proper disposal of marine sediment	All areas / throughout construction period	Contractor	ETWB TC(W) No.34/2002		Y		N/A(1)

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Location/Timing	Implementation Relevant Standard or Requirement		Implementation Stages			Status
						D	С	0	
S9.2.1.2	Standard formwork or pre-fabrication should be used as far as practicable to minimise the C&D materials arising. The use of more durable formwork or plastic facing for construction works should also be considered. The use of wooden hoardings should be avoided and metal hoarding should be used to facilitate recycling. Purchasing of construction materials should be carefully planned in order to avoid over-ordering and wastage.	To minimize, reuse and disposal of C&D materials	All areas / throughout construction period	Contractor	WDO, Land (Miscellaneous Provisions) Ordinance, DevB TC(W) No. 6/2010		Y		N/A(1)
\$9.2.1.2	The future contractor should recycle as many C&D materials as possible on-site. The public fill and C&D waste should be segregated and stored in separate containers or skips to facilitate the reuse or recycling of materials and proper disposal. Where practicable, the concrete and masonry should be crushed and used as fill materials. Steel reinforcement bar should be collected for use by scrap steel mills. Different areas of the sites should be considered for segregation and storage activities.	To minimize, reuse and disposal of C&D materials	All areas / throughout construction period	Contractor	WDO, Land (Miscellaneous Provisions) Ordinance, DevB TC(W) No. 6/2010		Y		^
\$9.2.1.2	All falsework should be steel instead of wood as far as practicable.	To minimize, reuse and disposal of C&D materials	All areas / throughout construction period	Contractor	DevB TC(W) No.6/2010		Y		N/A(1)

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Location/Timing	Implementation   Relevant Standard   Agent   or Requirement		Impler	nentatio	n Stages	Status
						D	С	0	
S9.2.1.2	Chemical waste producers should register with the EPD and chemical waste should be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes as follows:  - Suitable for the substance to be held, resistant to corrosion, maintained in good conditions and securely closed; - Having a capacity of <450L unless the specifications have been approved by the EPD; and - Displaying a label in English and Chinese according to the instructions prescribed in Schedule 2 of the Regulations Clearly labelled and used solely for the storage of chemical wastes; - Enclosed with at least 3 sides; - Impermeable floor and bund with capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in the area, whichever is greatest; - Adequate ventilation; - Sufficiently covered to prevent rainfall entering (water collected within the bund must be tested and disposed of as chemical waste, if necessary); and - Incompatible materials are adequately separated.	chemical waste within works sites and works areas	All areas / throughout construction period	Contractor	Code of Practice on the Packaging, Handling and Storage of Chemical Wastes		Y		A
S9.2.1.2	Waste oils, chemicals or solvents should not be disposed of to drain.	To implement good site practice for handling, sorting reuse and recycling of wastes	All areas / throughout construction period	Contractor	EIAO TM		Y		۸

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Location/Timing	Implementation Agent	Relevant Standard or Requirement	Implei	nentatio	Status	
						D	С	0	
S9.2.1.2	Adequate numbers of portable toilets should be provided for on-site workers. Portable toilets should be maintained in reasonable states, which will not deter the workers from utilising them. Night soil should be regularly collected by licensed collectors.	To ensure proper disposal of sewage sludge	All areas / throughout construction period	Contractor	WDO, Land (Miscellaneous Provisions) Ordinance, DevB TC(W) No. 6/2010		Y		N/A(1)
S9.2.1.2	General refuse arising on-site should be stored in enclosed bins or compaction units separately from C&D and chemical wastes. Sufficient dustbins should be provided for storage of waste as required under the Public Cleansing and Prevention of Nuisances By- laws. In addition, general refuse should be cleared daily and disposed of to the nearest licensed landfill. Burning of refuse on construction sites is prohibited.	To separate the general refuse from other waste types and proper disposal of the refuse	All areas / throughout construction period	Contractor	WDO, Land (Miscellaneous Provisions) Ordinance		Y		۸
S9.2.1.2	All waste containers should be in a secure area on hardstanding.	To implement good site practice for handling, sorting reuse and recycling of wastes	All areas / throughout construction period	Contractor	WDO, Land (Miscellaneous Provisions) Ordinance		Y		۸
S9.2.1.2	Aluminium cans should be collected and recovered from the waste stream by reputable collectors if they are segregated and easily accessible. Separately labelled bins for their deposition should be provided as far as practicable.	To implement on-site sorting facilitating reuse and recycling of materials as well as proper disposal of waste	All areas / throughout construction period	Contractor	WDO, Land (Miscellaneous Provisions) Ordinance		Y		N/A(1)
S9.2.1.2	Office wastes can be reduced by recycling of paper if such volume is sufficiently large to warrant collection. Participation in a local collection scheme by the future contractor should be advocated. Waste separation facilities for paper, aluminium cans, plastic bottles, etc should be provided on-site.	To separate the general refuse from other waste types and proper disposal of the refuse	Site Offices / throughout construction period	Contractor	WDO, Land (Miscellaneous Provisions) Ordinance		Y		N/A(1)

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Location/Timing	Implementation Agent	Relevant Standard or Requirement	Implen	Implementation Stages		Status
						D	С	0	
S9.2.1.2	Training should be provided to workers about the concepts of site cleanliness and appropriate waste management procedure, including waste reduction, reuse and recycling.	To implement good site practice for handling, sorting reuse and recycling of wastes	Contract Mobilisation	Contractor	WDO, Land (Miscellaneous Provisions) Ordinance		Y		N/A(1)
S9.2.1.2	During construction phase, regular site inspections and supervision of the waste management procedures shall be undertaken as part of the EM&A procedures.	To ensure proper control, all waste is removed from site areas as appropriate and illegal disposal of waste is not being undertaken	All areas / throughout construction period	Contractor	EIAO TM		Y		۸

Remarks: EM&	&A Programme under EP-451/2013
D	Design
С	Construction
Y	Yes
О	Operation
^	Compliance of mitigation measure;
N/A	Not applicable at this stage;
N/A(1)	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 L SUMMARIES OF ENVIRONMENTAL COMPLAINT, WARNING, SUMMON AND NOTIFICATION OF SUCCESSFUL PROSECUTION

# **Environmental Permit No.: EP-451/2013 Environmental Team for Trunk Road T2**

**Reporting Month**: October 2022

Log Ref	Location	Received Date	Details of Complaint/war ning/summon and prosecution	Investigation/Mitigation Action	Status
-	-	_	-	-	-

#### Remarks:

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

## APPENDIX M SUMMARY OF EXCEEDANCE

# **Appendix M – Summary of Exceedance**

**Reporting Month:** October 2022

#### (A) Exceedance Report for Air Quality

Four (4) Action Level and Two (2) Limit Level exceedance of 24hr TSP monitoring was recorded in this reporting month.

<b>Monitoring Station</b>	Start Date	Conc. (µg/m³)	Level exceeded
CKL2	17 October 2022	206.1	Action Level
KER1	17 October 2022	401.2	Limit Level
KTD2d	17 October 2022	<u>296.5</u>	Limit Level
KER1	22 October 2022	198.5	Action Level
KTD2d	22 October 2022	160.8	Action Level
CKL1	27 October 2022	204.9	Action Level

## (B) Exceedance Report for Construction Noise

#### **Action Level for Construction Noise**

No Action Level exceedance was recorded due to the documented complaint received in this reporting month.

#### **Limit Level for Construction Noise**

No exceedance for daytime construction noise monitoring was recorded in the reporting month.

# (C) Summary of Landscape and Visual Non-Conformity (NIL in the reporting month)

#### - Notification of Exceedances

**NOE No.** 221017\_24hrTSP (CKL2) **Exceedance Level**: Action

Date of Air Quality Monitoring: 17 October 2022

#### Part A – Exceedance Summary Tables

**Table I:** Parameter(s) – 24-hour TSP

Station	Location	Starting Time	Weather Condition	Conc. (µg/m³)	Action Level (µg/m³)	Limit Level (µg/m³)	Level exceeded
CKL2	Flat 103 Cha Kwo Ling Village	09:00	Fine	206.1	183.0	260.0	Action

Note: **Bold Italic** means Action Level exceedance

**Bold Italic with underline** means Limit Level exceedance

#### Part B – Major Source of Parameter Monitored

#### Field Observation(s) and Finding(s)

(a) Statement of exceedance(s)

24-hour TSP monitoring measured at CKL2 on 17 October 2022 exceeded the action level.

(b) Cause of exceedance(s)

According to the observation of our field staff and the information provided by ER and Contractor, the major dust source(s) and/or reason(s) for exceedance identified at CKL1 is/are as follow:

- 1. No major project related construction activity was observed during monitoring at CKL2. However, it observed that construction work of DSD was being conducted along the Cha Kwo Ling Road. (See Photo 1)
- 2. Fluctuation of road traffic along the Cha Kwo Ling Road. (Photo 2)

# - Notification of Exceedances





Photo 1

Photo 2

### - Notification of Exceedances

#### Part C – Conclusion

Based on the finding(s) and observation(s) above, we deduce the Action Level exceedance of 24-hour TSP recorded at station CKL2 on 17 October 2022 is due to fluctuation of road traffic and the construction activity from DSD, therefore, the exceedance is considered as **non-project related**.

#### Part D - Recommendation

Although the exceedance is considered as non-project related, contractor is reminded that the following construction dust mitigation measures shall always to be implemented on site to reduce/ minimize the generation of dust due to the construction activities.

- 1. Watering of the construction areas 12 times per day to reduce dust emissions.
- 2. Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions.
- 3. Open stockpiles shall be avoided or covered.
- 4. Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations.
- 5. Establishment and use of vehicle wheel and body washing facilities at the exit points of the site.
- 6. Imposition of speed controls for vehicles on unpaved site roads, 8 km per hour is the recommended limit.
- 7. Use of regular watering to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather.

#### Part E – Follow-up Action Taken

According to the Event and Action Plan of the EM&A Manual of Trunk Road T2 project under EP-451/2013, the follow-up action of this exceedance is/are taken by ET as follow:

- 1. Informed the investigation result to other parties (i.e., IEC and ER).
- 2. ET will always pay attention to the implementation of mitigation measures by Contractor and advise the ER on the effectiveness of such measures.

## - Notification of Exceedances

NOE No. 221017\_24hrTSP (KER1) Exceedance Level: Limit

Date of Air Quality Monitoring: 17 October 2022

### Part A – Exceedance Summary Tables

**Table I:** Parameter(s) – 24-hour TSP

Station	Location	Starting Time	Weather Condition	Conc. (µg/m³)	Action Level (μg/m³)	Limit Level (µg/m³)	Level exceeded
KER1	Future Residential Development at Kerry Godown	09:00	Cloudy	<u>401.2</u>	172.0	260.0	Limit

Note:

**Bold Italic** means Action Level exceedance

**Bold Italic with underline** means Limit Level exceedance

### Part B – Major Source of Parameter Monitored

#### Field Observation(s) and Finding(s)

(a) Statement of exceedance(s)

24-hour TSP monitoring measured at KER1 on 17 October 2022 exceeded the Limit level.

(b) Cause of exceedance(s)

According to the observation of our field staff, the major dust source(s) and/or reason(s) for exceedance identified at KER1 is/are as follow:

- 1. Observable dust sources, such as wind erosion, loading and unloading of material, and vehicle movement on site, were identified. (See Photo 1)
- 2. Dust reduction measure, i.e. Wheel washing facility was observed and operated normally. (See Photo 2). However, sand and tiny gravel were observed at the site entrance. (See Photo 3)

# - Notification of Exceedances

Photo Record (Photo Taken by ET)





Photo 1 Photo 2



Photo 3

## - Notification of Exceedances

#### Part C - Conclusion

Based on the finding(s) and observation(s) above, we deduce the Limit Level exceedance of 24-hour TSP recorded at station KER1 on 17 October 2022 is due to the insufficient dust reduction measure was carried out to reduce emissions (i.e watering in the site entrance). Therefore, the exceedance is considered as **project related**.

#### Part D - Recommendation

The following construction dust mitigation measures shall always to be implemented on site to reduce/ minimize the generation of dust due to the construction activities.

- 1. Watering of the construction areas 12 times per day to reduce dust emissions.
- 2. Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions.
- 3. Open stockpiles shall be avoided or covered.
- 4. Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations
- 5. Establishment and use of vehicle wheel and body washing facilities at the exit points of the site.
- 6. Imposition of speed controls for vehicles on unpaved site roads, 8 km per hour is the recommended limit

7.

### Part E – Follow-up Action Taken

According to the Event and Action Plan of the EM&A Manual of Trunk Road T2 project under EP-451/2013, the follow-up action of this exceedance is/are taken by ET as follow:

1. An addition air quality monitoring has been carried out on 31 October 2022, and no action and limit level exceedance was recorded. The monitoring results is tabulated as below:

	\\\\ 4\	Air	Atmospheric	Filter \	Weight g)	Darkinsdaka	Elapse	e Time	0	Flow (m3/ı		۸ تاء	Total	0	Action	Limit
Start Date	Weather Condition	Temp . (K)	Pressure, Pa (mmHg)	Initial	Final	Particulate weight (g)	Initial	Final	Sampling Time (hrs.)	Initial	Final	Av. Flow (m3/min)	vol. (m3)	Conc. (µg/m3)	Level (µg/m3)	Level (µg/m3)
31-Oct-22	Rainy	296.7	757.3	3.2764	3.7166	0.4402	14207	14231	24	1.22	1.23	1.23	1764.5	249.5	172	260

2. The remedial measures proposed by the contractor was reviewed during site audit and ET has no adverse comments on the proposed remedial measures. The photo records provided by contractor are shown as below:

# - Notification of Exceedances

**Photo Record (Provided by Contractor)** 







Photo 4 – Wheel Washing Facilities

Photo 5 – Wheel Washing Facilities

Photo 6 – Watering on the main haul road



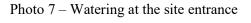




Photo 8 – Watering on the main haul road

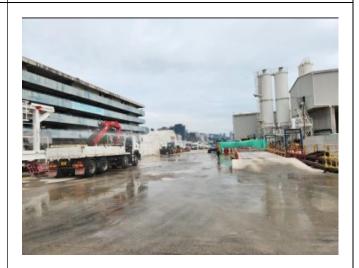


Photo 10 – Watering on the main haul road

## - Notification of Exceedances

NOE No. 221017\_24hrTSP (KTD2d) Exceedance Level: Limit

**Date of Air Quality Monitoring:** 17 October 2022

#### Part A – Exceedance Summary Tables

**Table I:** Parameter(s) – 24-hour TSP

Station	n	Location	Starting Time	Weather Condition	Conc. (µg/m³)	Action Level (µg/m³)	Limit Level (µg/m³)	Level exceeded
KTD2	d N	Next to the SOR Office of Trunk Road T2 in Kai Tak Area	09:00	Cloudy	296.5	157.0	260.0	Limit

Note: **Bold Italic** means Action Level exceedance

**Bold Italic with underline** means Limit Level exceedance

### Part B – Major Source of Parameter Monitored

## Field Observation(s) and Finding(s)

(a) Statement of exceedance(s)

24-hour TSP monitoring measured at KTD2d on 17 October 2022 exceeded the Limit level.

(b) Cause of exceedance(s)

According to the observation of our field staff, the major dust source(s) and/or reason(s) for exceedance identified at KTD2d is/are as follow:

1. It observed that a stockpile of excavated dusty material with impervious sheet was not covered thoroughly from the construction site which does not belong to BTP. (See Photo 1&2)

# - <u>Notification of Exceedances</u>

Photo Record (Photo Taken by ET)



### - Notification of Exceedances

#### Part C - Conclusion

Based on the finding(s) and observation(s) above, we deduce the Limit Level exceedance of 24-hour TSP recorded at station KTD2d on 17 October 2022 is due to the construction activities which does not belong to BTP Therefore, the exceedance is considered as **non-project related**.

#### Part D – Recommendation

The following construction dust mitigation measures shall always to be implemented on site to reduce/ minimize the generation of dust due to the construction activities.

- 1. Watering of the construction areas 12 times per day to reduce dust emissions.
- 2. Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions.
- 3. Open stockpiles shall be avoided or covered.
- 4. Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations
- 5. Establishment and use of vehicle wheel and body washing facilities at the exit points of the site.
- 6. Imposition of speed controls for vehicles on unpaved site roads, 8 km per hour is the recommended limit

## Part E – Follow-up Action Taken

According to the Event and Action Plan of the EM&A Manual of Trunk Road T2 project under EP-451/2013, the follow-up action of this exceedance is/are taken by ET as follow:

- 1. Informed the investigation result to other parties (i.e., IEC and ER).
- 2. ET will always pay attention to the implementation of mitigation measures by Contractor and advise the ER on the effectiveness of such measures.

## - Notification of Exceedances

NOE No. 221022\_24hrTSP (KER1) Exceedance Level: Action

Date of Air Quality Monitoring: 22 October 2022

#### Part A – Exceedance Summary Tables

**Table I:** Parameter(s) – 24-hour TSP

Station	Location	Starting Time	Weather Condition	Conc. (µg/m³)	Action Level (µg/m³)	Limit Level (µg/m³)	Level exceeded
KER1	Future Residential Development at Kerry Godown	09:00	Sunny	198.5	172.0	260.0	Action

Note: **Bold Italic** means Action Level exceedance

**Bold Italic with underline** means Limit Level exceedance

#### Part B – Major Source of Parameter Monitored

## Field Observation(s) and Finding(s)

(a) Statement of exceedance(s)

24-hour TSP monitoring measured at KER1 on 22 October 2022 exceeded the Action level.

(b) Cause of exceedance(s)

According to the observation of our field staff and the site audit on 3 November 2022, the major dust source(s) and/or reason(s) for exceedance identified at KER1 is/are as follow:

- 1. The open stockpiles were not covered with impervious materials which closed with the HVS. (See Photo 1)
- 2. Dry weather
- 3. Observable dust sources, such as wind erosion, loading and unloading of material, and vehicle movement on site, were identified. (See Photo 2)

## - Notification of Exceedances

Photo Record (Photo Taken by ET)





Photo 1 Photo 2

### - Notification of Exceedances

#### Part C - Conclusion

Based on the finding(s) and observation(s) above, we deduce the Action Level exceedance of 24-hour TSP recorded at station KER1 on 22 October 2022 is due to the uncovered stockpiles which was very close to the HVS. Therefore, the exceedance is considered as **project related**.

#### Part D – Recommendation

The following construction dust mitigation measures shall always to be implemented on site to reduce/ minimize the generation of dust due to the construction activities.

- 1. Watering of the construction areas 12 times per day to reduce dust emissions.
- 2. Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions.
- 3. Open stockpiles shall be avoided or covered.
- 4. Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations
- 5. Establishment and use of vehicle wheel and body washing facilities at the exit points of the site.
- 6. Imposition of speed controls for vehicles on unpaved site roads, 8 km per hour is the recommended limit

#### Part E – Follow-up Action Taken

According to the Event and Action Plan of the EM&A Manual of Trunk Road T2 project under EP-451/2013, the follow-up action of this exceedance is/are taken by ET as follow:

1. An addition air quality monitoring at KER1 has been carried out on 31 October 2022, and the One (1) action exceedance was recorded. The monitoring results is tabulated as below:

Start	Weather	Air Temp	Atmospheric Pressure, Pa	Filter \	Weight g)	Particulate	Elapse	Time	Sampling	Flow (m3/r	Rate min.)	Av. Flow	Total vol.	Conc.	Action Level	Limit Level
Date	Condition	. (K)	(mmHg)	Initial	Final	weight (g)	Initial	Final	Time (hrs.)	Initial	Final	(m3/min)	(m3)	(µg/m3)	(µg/m3)	(µg/m3)
31-Oct-																
22	Rainy	296.7	757.3	3.2764	3.7166	0.4402	14207	14231	24	1.22	1.23	1.23	1764.5	249.5	172	260

2. The addition air quality monitoring at KER1 will be adopted until there are no action / limit level exceedance of 24-hour TSP.

### - Notification of Exceedances

NOE No. 221022 24hrTSP (KTD2d) Exceedance Level: Action

Date of Air Quality Monitoring: 22 October 2022

#### Part A – Exceedance Summary Tables

**Table I:** Parameter(s) – 24-hour TSP

Station	Location	Starting Time	Weather Condition	Conc. (µg/m³)	Action Level (µg/m³)	Limit Level (µg/m³)	Level exceeded
KTD2d	Next to the SOR Office of Trunk Road T2 in Kai Tak Area	09:00	Sunny	160.8	157.0	260.0	Action

Note: **Bold Italic** means Action Level exceedance

**Bold Italic with underline** means Limit Level exceedance

#### Part B – Major Source of Parameter Monitored

## Field Observation(s) and Finding(s)

(a) Statement of exceedance(s)

24-hour TSP monitoring measured at KTD2d on 22 October 2022 exceeded the Action level.

(b) Cause of exceedance(s)

According to the observation of our field staff and the site audit on 3 November 2022, the major dust source(s) and/or reason(s) for exceedance identified at KER1 is/are as follow:

- 1. It observed that a stockpile of excavated dusty material with impervious sheet was not covered thoroughly from the construction site which did not belong to BTP. (See Photo 1)
- 2. Dry weather
- 3. The loading and unloading of material and vehicle movement were observed from the construction site which did not belong to BTP (See Photo 2)

## - Notification of Exceedances

Photo Record (Photo Taken by ET)



### - Notification of Exceedances

#### Part C - Conclusion

Based on the finding(s) and observation(s) above, we deduce the Action Level exceedance of 24-hour TSP recorded at station KTD2d on 22 October 2022 is due to the construction activities which does not belong to BTP Therefore, the exceedance is considered as **non-project related**.

#### Part D – Recommendation

The following construction dust mitigation measures shall always to be implemented on site to reduce/ minimize the generation of dust due to the construction activities.

- 1. Watering of the construction areas 12 times per day to reduce dust emissions.
- 2. Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions.
- 3. Open stockpiles shall be avoided or covered.
- 4. Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations
- 5. Establishment and use of vehicle wheel and body washing facilities at the exit points of the site.
- 6. Imposition of speed controls for vehicles on unpaved site roads, 8 km per hour is the recommended limit

## Part E – Follow-up Action Taken

According to the Event and Action Plan of the EM&A Manual of Trunk Road T2 project under EP-451/2013, the follow-up action of this exceedance is/are taken by ET as follow:

- 1. Informed the investigation result to other parties (i.e., IEC and ER).
- 2. ET will always pay attention to the implementation of mitigation measures by Contractor and advise the ER on the effectiveness of such measures.

#### - Notification of Exceedances

**NOE No.** 221027\_24hrTSP (CKL1) **Exceedance Level**: Action

Date of Air Quality Monitoring: 27 October 2022

#### Part A – Exceedance Summary Tables

**Table I:** Parameter(s) – 24-hour TSP

Station	Location	Starting Time	Weather Condition	Conc. (µg/m³)	Action Level (μg/m³)	Limit Level (µg/m³)	Level exceeded
CKL1	Flat 121 Cha Kwo Ling Village	09:00	Sunny	204.9	191.0	260.0	Action

Note: **Bold Italic** means Action Level exceedance

**Bold Italic with underline** means Limit Level exceedance

#### Part B – Major Source of Parameter Monitored

#### Field Observation(s) and Finding(s)

(a) Statement of exceedance(s)

24-hour TSP monitoring measured at CKL1 on 27 October 2022 exceeded the action level.

(b) Cause of exceedance(s)

According to the observation of our field staff and the information provided by ER and Contractor, the major dust source(s) and/or reason(s) for exceedance identified at CKL1 is/are as follow:

- 1. No major project related construction activity was observed during monitoring at CKL1. However, it observed that construction work of DSD was being conducted along the Cha Kwo Ling Road (See Photo 1-2).
- 2. Fluctuation of road traffic along the Cha Kwo Ling Road.

#### - Notification of Exceedances



#### Part C – Conclusion

Based on the finding(s) and observation(s) above, we deduce the Action Level exceedance of 24-hour TSP recorded at station CKL1 on 27 October 2022 is due to fluctuation of road traffic and the construction activity from DSD, therefore, the exceedance is considered as **non-project related**.

#### **Part D – Recommendation**

Although the exceedance is considered as non-project related, contractor is reminded that the following construction dust mitigation measures shall always to be implemented on site to reduce/minimize the generation of dust due to the construction activities.

- 1. Watering of the construction areas 12 times per day to reduce dust emissions.
- 2. Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions.
- 3. Open stockpiles shall be avoided or covered.
- 4. Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations.
- 5. Establishment and use of vehicle wheel and body washing facilities at the exit points of the site.
- 6. Imposition of speed controls for vehicles on unpaved site roads, 8 km per hour is the recommended limit.
- 7. Use of regular watering to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather.

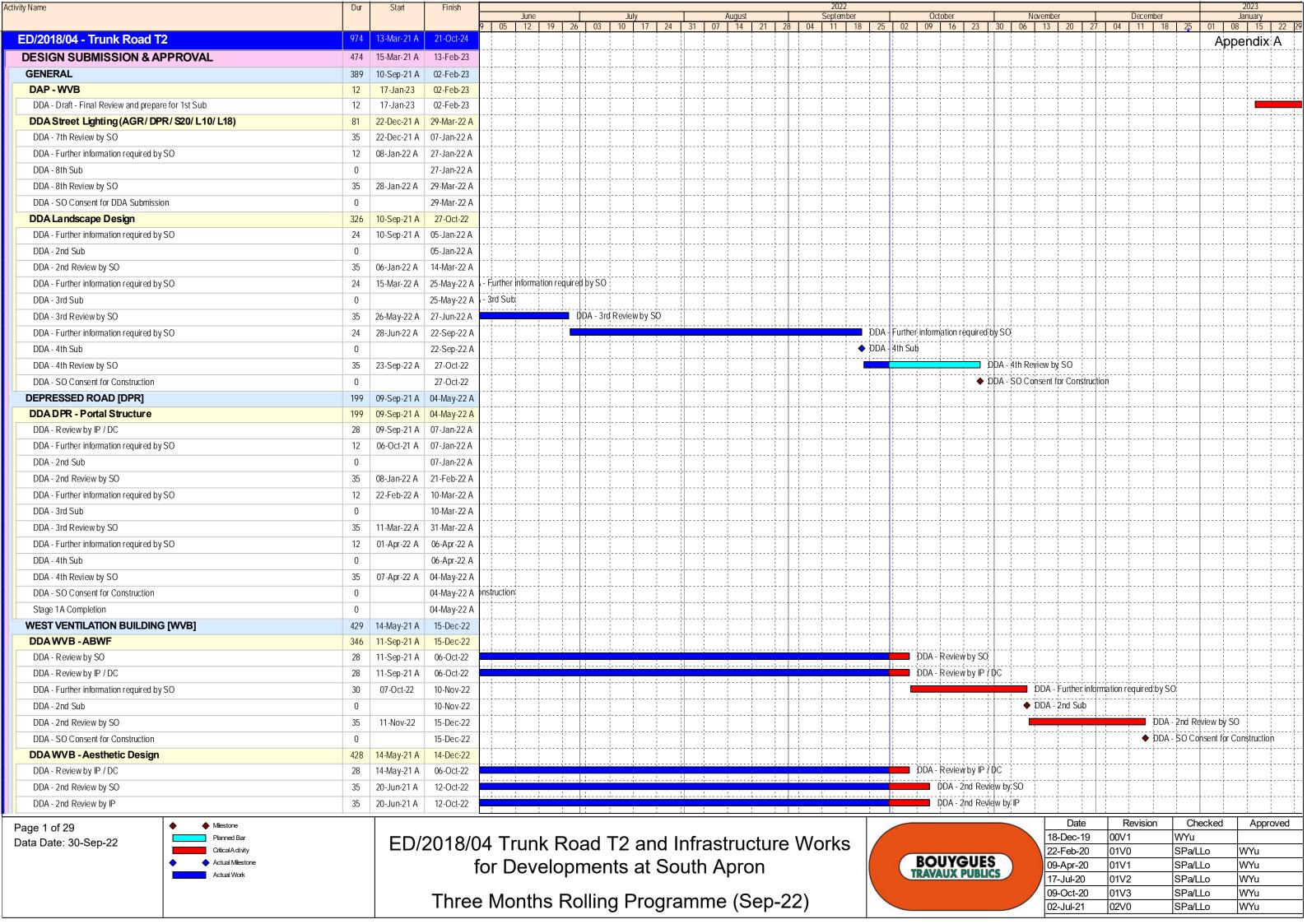
# - Notification of Exceedances

## Part E – Follow-up Action Taken

According to the Event and Action Plan of the EM&A Manual of Trunk Road T2 project under EP-451/2013, the follow-up action of this exceedance is/are taken by ET as follow:

- 1. Informed the investigation result to other parties (i.e., IEC and ER).
- 2. ET will always pay attention to the implementation of mitigation measures by Contractor and advise the ER on the effectiveness of such measures.

APPENDIX N TENTATIVE CONSTRUCTION PROGRAMME

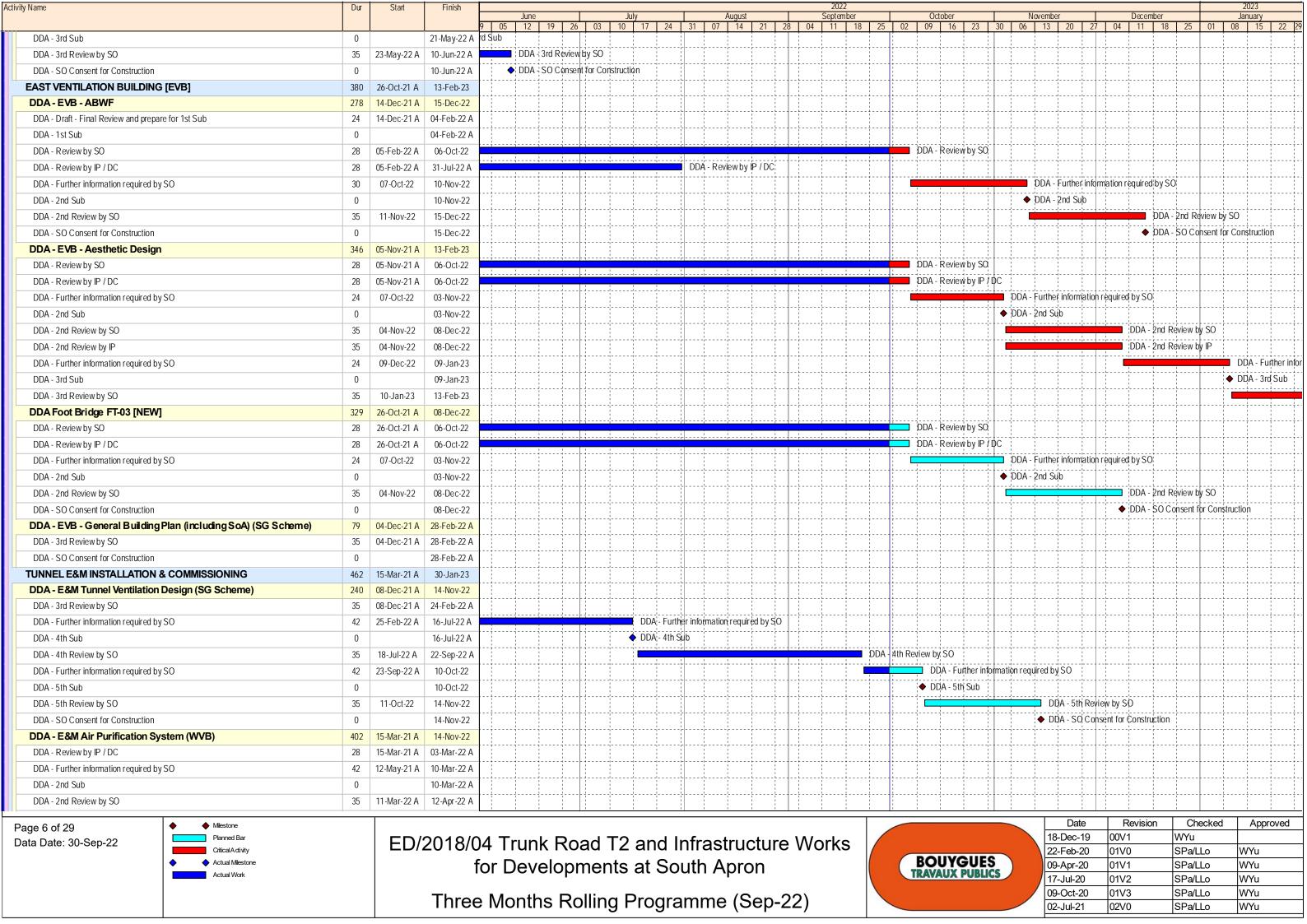


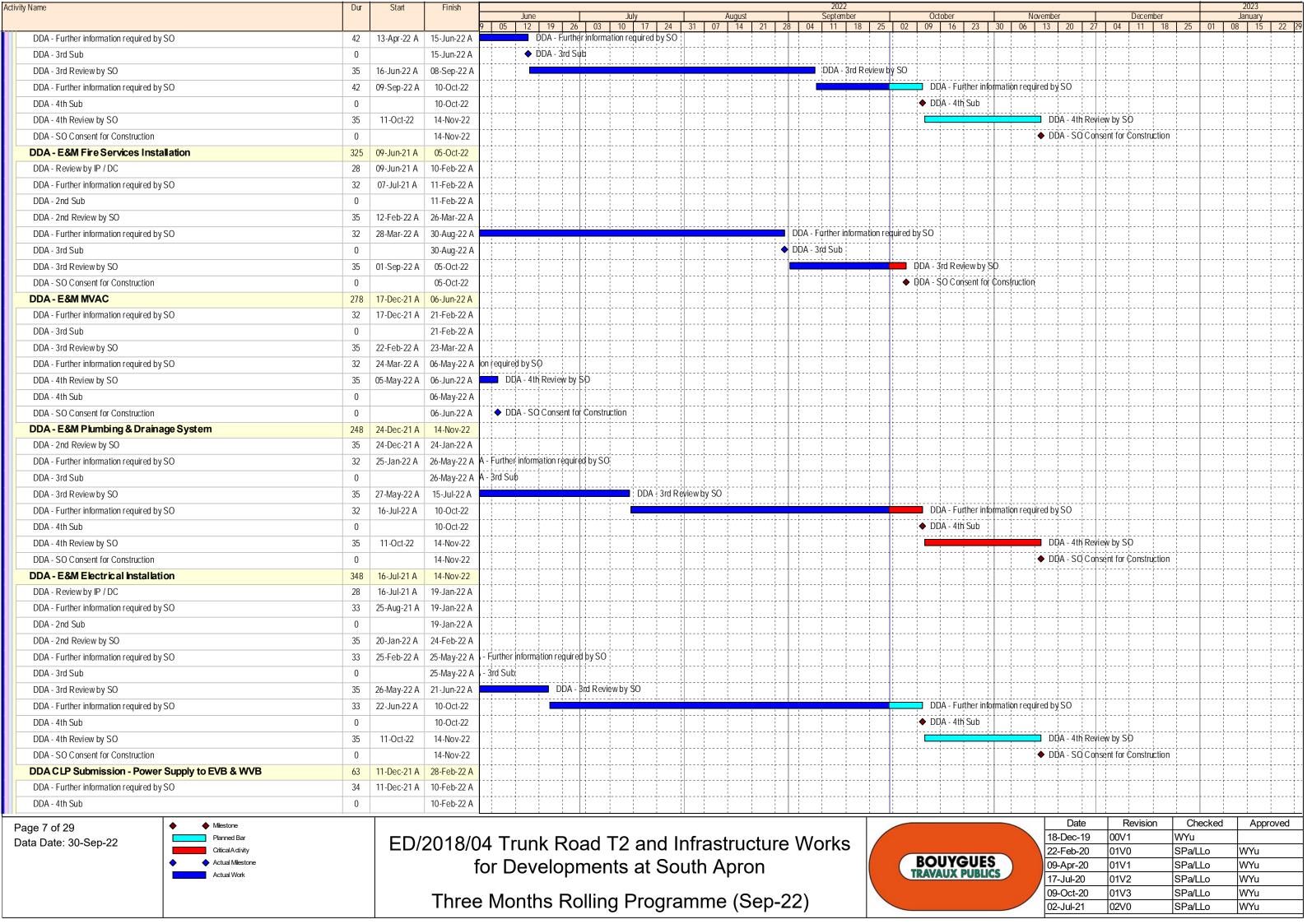
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FER - 7th Sub	0	44.0 : 55	10-Oct-22	ļ															7th¦Sub	<u> </u>	FER - 7t						ļ
FER - 7th Review by SO	35	11-Oct-22	14-Nov-22	ļ			-					ļļ				¦ 	¦			<u></u>			-			ļ 	<u> </u>
FER - SO Consent for Construction	0		14-Nov-22	<del>.</del>								ļļ				¦ 	¦				+ FER - S0	U¦Conse	ent for Constructior	1 ;			· · · · · · · · · · · · · · · · · · ·
DDA - Sub-sea Tunnel - Internal Structure (SG & Parapet) (SG Scheme		06-Nov-21 A										ļļ				¦				<b>!!</b>							1 1
DDA - 4th Review by SO		06-Nov-21 A		ļ								ļļ		-		ļ 							-		ļļ	   <del>-</del>	ļ
DDA - SO Consent for Construction	0		05-Jan-22 A																						1		<u> </u>
CROSS PASSAGE		01-Sep-21 A		ļļ													ļ										ļ
DDA - Cross Passage - CP TBM Confinement		01-Sep-21 A		ļļ													ļ			<u> </u>							ļ
DDA - Review by IP / DC		01-Sep-21 A		ļļ								ļl		-		<u>.</u>	<u> </u>			<u> </u>	_	ļl			1		<u> </u>
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DDA - Cross Passage - CP TBM - DCRA	260	01-Sep-21 A	10-Jun-22 A				-	:				, <u></u>	<del>-</del>	1-1-			Ţj				i					<del>-</del>	T
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Page 5 of 29  A Milestone  Planned Bar			20 4 5 45	—		. –		. —			_			, -	.,						Da 18-Dec-		Revision 00V1	WYu	necked	Аррі	ovea
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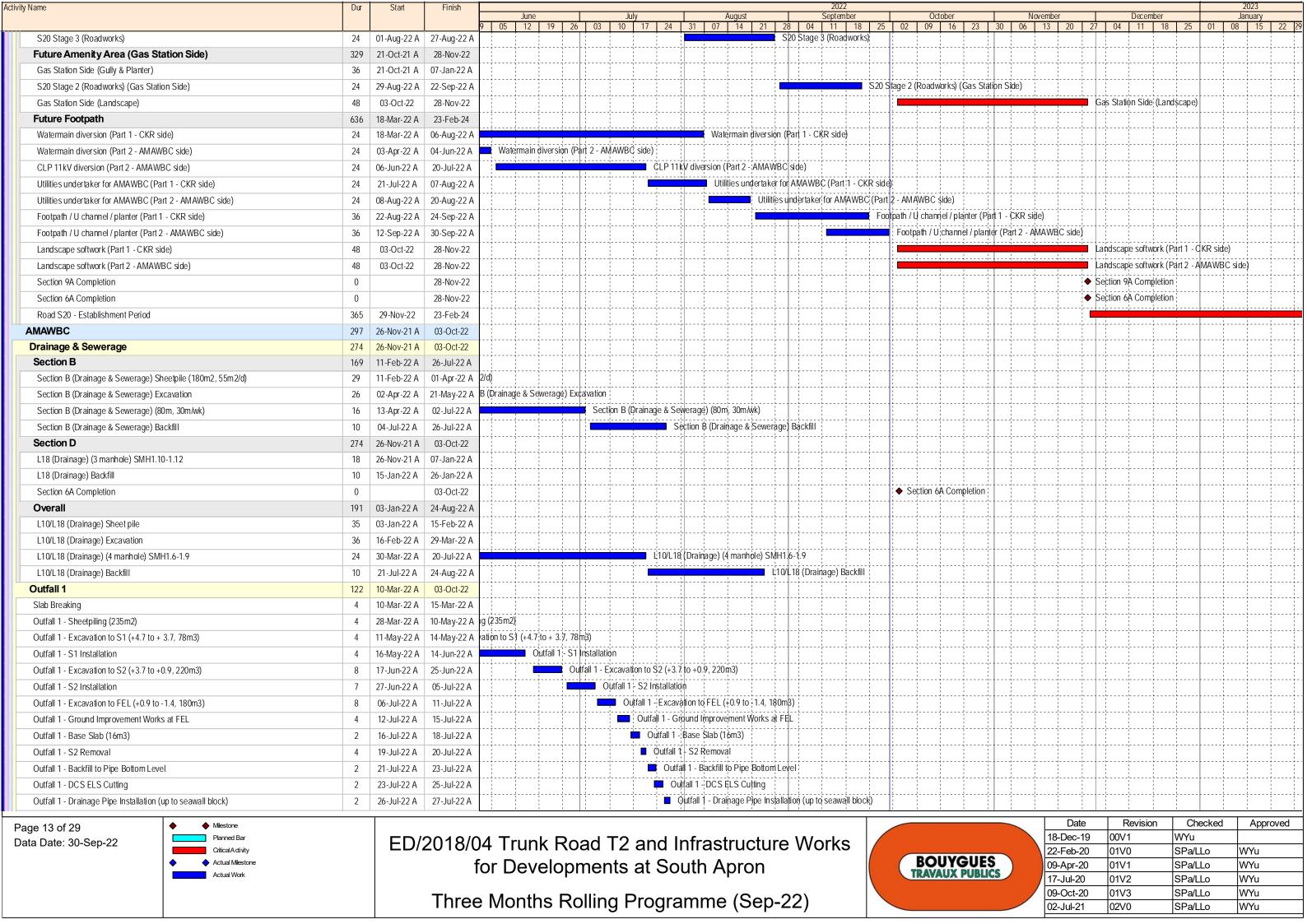
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DDA - E&M Tunnel Lighting Design	272	29-Nov-21 A	14-Nov-22																								
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DDA - Further information required by SO	24	23-Dec-21 A	06-Jun-22 A		DA - Further	inforn	nation r	equired by	SO :					<u>-</u>			1 J - 1 1 1					- + ;		 !		<u>1</u>	<del></del>
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DDA - SO Consent for Construction	0	*** *** ==	12-Nov-22													· <del> </del>					DDA - SO Con				·	<del> </del>	
AIP - Civil Provision for TCSS	61	14-Nov-22	30-Jan-23													· <del> </del>	ļ								·	<del> </del>	<u> </u>
AIP - Draft - Preparation by Designer	22	14-Nov-22	08-Dec-22		· <del> </del> <del> </del>											· <del> </del>	İİ-						■ AIP - Draft	Prepara	ation by:De	esianer	<u> </u>
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AIP - 1st Sub	0	0, 500 22	22-Dec-22																					`L	1st Sub		
AIP - Review by SO	28	23-Dec-22	19-Jan-23									·														<u>-</u>	AIP - Rev
AIP - Review by IP / DC	28	23-Dec-22	19-Jan-23									·													·	<u>i</u>	AIP - Rev
AIP - Update & prepare for 2nd Sub	6	20-Jan-23	30-Jan-23																								;;
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PAYMENT MILESTONE		13-Jan-22 A	30-Jan-23													. <u>.</u>	<u> </u>								·		ļ <b>ļ</b> -
1.1 Preliminaries and General Requirements			13-Apr-22 A																	-							
1.1.42 Monthly Remaining value of this Cost Centre 1 Month 26	0	13-Jail-22 A	13-Apr-22 A 13-Jan-22 A													· <del> </del>				-							
1.1.42 Monthly Remaining value of this Cost Centre 1 Month 27	0		14-Feb-22 A														† <del> </del> -									<del>-</del>	
1.1.42 Monthly Remaining value of this Cost Centre 1 Month 28	0		14-Feb-22 A 14-Mar-22 A								 					· <del>!</del>	÷										
, ,	-			entre 1	Month 20																						
1.1.42 Monthly Remaining value of this Cost Centre 1 Month 29  3.1 for Trunk Road T2	175	12 lon 22 A	13-Apr-22 A		vi¦				<u> </u>							. <del>.</del>	<u> </u>								·		<u> </u>
3.1 for Irunk Road 12  3.1 .50 Approval AIP for completion of SUS		13-Jan-22 A	13-Aug-22 A	ļ <u>-</u>					ļļ							· <del> </del>											<u> </u>
3.1 .50 Approval AIP for completion of SUS  3.1 .52 Approval DDA for completion of SUS	0		13-Jan-22 A 13-Aug-22 A	ļ <del>-</del>					<del> </del>			31 52 4	\nnroval	DDA for	r completion of	fCHC									· <del> </del> <del> </del>	<del>-</del>	<del></del>
		12 lan 22 A							¦		<u> </u>	J. 1 .QZ A		יייין אט <sub>י</sub> ט און אט			· · · · · · · · · · · · · · · · · · ·								·	<del>-</del>	<del> </del> <del> </del> -
3.3 for the Remaining Stage 5 Infrastructure Works - Road L10 (Southe 3.3.16 Approval DDA for waterworks	0	13-Jan-22 A	13-Jan-22 A 13-Jan-22 A														· · · · · · · · · · · · · · · · · · ·						·   · · · · · · · · · · · · · · · ·			<del>-</del>	
3.3.16 Approval DDA for waterworks  3.4 for the Remaining Stage 5 Infrastructure Works - FT02	-	13-Jan-22 A	13-Jan-22 A 14-Mar-22 A						<u> </u>																		
3.4 for the Remaining Stage 5 infrastructure works - F102  3.4 .10 Approval DDA for modification of existing footbridge	51	13-Jail-22 A	14-Mar-22 A 13-Jan-22 A																								
3.4 .12 Approval Demolition plan for existing footbridge	0		13-Jan-22 A 14-Mar-22 A						<u> </u>																		
3.4 .13 Complete whole activities of this cost centre	0		14-Mar-22 A						<u> </u>							; - <del>!</del>	<u> </u>										<u> </u>
3.5 for Lam Chak Street and Kai Hing Road		13-Sep-22 A		ļ <del> </del>					<del> </del> <del> </del>		ļ														· <del> </del> <del> </del>	<del> </del>	<del> </del>
3.5 for Lam Criak Street and Kai Hing Road  3.5 .8 Approval DDA for roadworks	0	13-36h-57 H	30-Sep-22 13-Sep-22 A						<u> </u>		} <u></u>				◆ 3.5 .8 Ap	nnroval	DDA for	rnadworl	·						·		<del> </del>
5.5 to Approval DDA for roadworks	U		13.3ch-57 W		1 1	1						- !		1	→ J.p.O A	MA 10 ACI	ואורטטן	. oa avyUII				1:	1 1	-	1 !	- !	1 1
Page 8 of 29																					Date		Revision		necked	Appr	oved
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			TL	4	. حالــــ	_	_ 11:		<b>)</b>			/C -		<b>^</b> \							09-Oct-20	01		SPa/L		WYu	
			Three	: IVIC	ontns	K	OIII	ng F	rogr	amr	ne	(Se	p-2	۷)							02-Jul-21	02		SPa/L		WYu	
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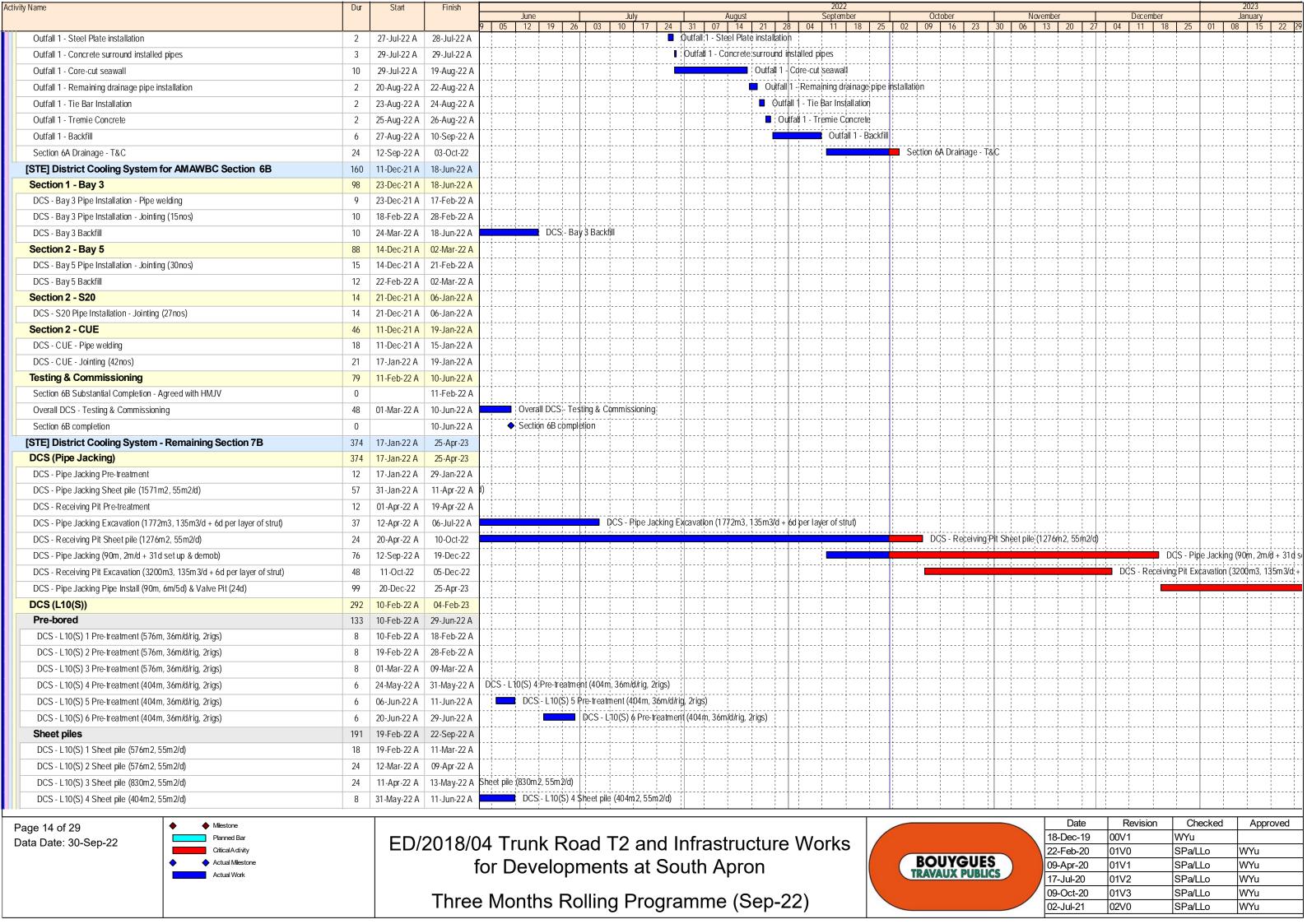
Activity Name	Dur	Start Finish	2022	2023	
			June	January 25 01 08 1 15	22 29
3.5 .12 Approval DDA for stormwater drainage works	0	13-Sep-22 A	◆ 3.5.12 Approval DDA for stormwater drainage works		
3.5 .20 Approval DDA for sewage works	0	13-Sep-22 A	◆ 3.5 .20 Approval DDA for sewage works		
3.5 .24 Approval DDA for landscape works	0	13-Sep-22 A	◆ 3.5 .24 Approval DDA for landscape works		
3.5 .16 Approval DDA for waterworks	0	30-Sep-22	◆ 3.5 .16 Approval D DA for waterworks		
3.5.25 Complete whole activities of this cost centre	0	30-Sep-22	♦ 3.5 .25 Complete whole activities of this cost centre		
3.6 for Road L10 (Northern Section)	0	30-Sep-22 30-Sep-22			
3.6.8 Approval DDA for Road L10 (northern section)	0	30-Sep-22*	◆ 3.6 .8;Approval DDA for Road L10 (northern section)		
3.6.9 Complete whole activities of this cost centre	0	30-Sep-22*	◆ 3.6.9;Complete whole activities of this cost centre		
3.9 for the Pipelines for District Cooling System for Commissioning of	0	13-Sep-22 A 13-Sep-22 A			
3.9.11 Submit O&M manual for DCS pipelines	0	13-Sep-22 A	◆ 3.9.11 Submit O&M manual for DCS pipelines		
4.1 South Apron Adits from Interface with the Depressed Road to the Ir	32	15-Dec-22 28-Jan-23			
4.1.1 Complete mobilization of excavation equipment 0.5	0	15-Dec-22	◆ 4.1.1 Comp	plete mobilization of ex	cavation ec
4.1.3 Complete excavation of South Apron Adist 0.2	0	31-Dec-22		◆ 4.1.3 Complete e	xcavation o
4.1.4 Complete excavation of South Apron Adist 0.4	0	04-Jan-23		◆ 4.1.4 Comple	
4.1.8 Complete South Apron Adist permanent structure 0.2	0	05-Jan-23		◆ 4.1.8 Compl	1 1
4.1.5 Complete excavation of South Apron Adist 0.6	0	06-Jan-23		◆ 4.1.5 Comp	olete excava
4.1.6 Complete excavation of South Apron Adist 0.8	0	09-Jan-23		◆ 4.1 6 Cc	mplete exc
4.1.7 Complete excavation of South Apron Adist 1	0	10-Jan-23		<b>◆</b> 4.1.7 (	Complete ex
4.1.9 Complete South Apron Adist permanent structure 0.4	0	19-Jan-23		•	4.1.9 Con
4.1.13 Complete backfill at South Apron Adist 0.2	0	28-Jan-23			<b>♦</b> ∠
4.2 Depressed Road and Remaining Ventilation Adits at the South Apro	0	30-Sep-22 30-Sep-22			
4.2 .23 Complete foundation of Depressed Road by length 1	0	30-Sep-22*	◆ 4.2 .23 Complete foundation of Depressed Road by length 1		
4.2 .31 Complete permanent structure of Depressed Road by length 1	0	30-Sep-22*	◆ 4.2 .31 Complete permanent structure of Depressed Road by length 1		
5.2 Completion of SUS	88	08-Oct-22 26-Jan-23			
5.2 .5 Complete overhead ventilation duct slab by length 0.1	0	08-Oct-22	♦ 5.2 .5 Complete overhead ventilation duct slab by length 0.1		
5.2 .6 Complete overhead ventilation duct slab by length 0.2	0	31-Oct-22	5.2, 6 Complete overhead ventilation duct slab by length	n 0.2	
5.2 .7 Complete overhead ventilation duct slab by length 0.3	0	22-Nov-22	◆ 5.2.7 Complete overhead ventilat	ion duct slab by length	10.3
5.2 .8 Complete overhead ventilation duct slab by length 0.4	0	14-Dec-22	◆ 5½.8 Comp	plete overhead ventilati	ion duct sla
5.2 .9 Complete overhead ventilation duct slab by length 0.5	0	07-Jan-23		♦ 5.2.9 Cor	mplete overl
5.2 .29 Complete remaining works in SUS by length 0.5	0	07-Jan-23		♦ 5.2 .29 Cd	om plete rem
5.2 .15 Complete Thermal barrier by length 0.1	0	26-Jan-23			♦ 5.2
6.2 TBM Tunnel	76	26-Oct-22 30-Jan-23			
6.2 .7 Complete excavation & installation of TBM Tunnel lining by length 0.35	0	26-Oct-22	♦ 6,2,7 Complete excavation & installation of TBM Tunnel linir	ng by length 0.35	
6.2 .8 Complete excavation & installation of TBM Tunnel lining by length 0.4	0	09-Nov-22	♦ 6,2.8 Completé excavation & installation of TB	M Tunnel lining by len	gth 0.4
6.2 .24 Complete TBM Tunnel waterproofing 0.4	0	09-Nov-22	♦ 6,2 .24 Complete TBM Tunnel waterproofing 0	).4	
6.2 .31 Complete TBM Tunnel overhead ventilation duct slab 0.1	0	14-Nov-22	♦ 6.2/.31 Complete: TBM Tunnel overhead v	ventilation duct slab 0	1
6.2 .9 Complete excavation & installation of TBM Tunnel lining by length 0.45	0	19-Nov-22	♦ 6.2.9 Complete excavation & installa	ation of TBM Tunnel lir	ning by leng
6.2 .10 Complete excavation & installation of TBM Tunnel lining by length 0.5	0	01-Dec-22	◆ 6.2.10;Complete excava	ition & installation of T	BM Tunnel I
6.2 .25 Complete TBM Tunnel waterproofing 0.5	0	01-Dec-22	♦ 6.2 .25 Complète TBM Ti		
6.2 .11 Complete excavation & installation of TBM Tunnel lining by length 0.55	0	08-Dec-22		excavation & installation	i i
6.2 .12 Complete excavation & installation of TBM Tunnel lining by length 0.6	0	15-Dec-22		mplete excavation & in	
6.2 .26 Complete TBM Tunnel waterproofing 0.6	0	15-Dec-22		mplete TBM Tunnel wa	
6.2 .41 Complete TBM Tunnel Thermal Barrier to tunnel lining 0.1	0	17-Dec-22		Complete TBM Tunnel	† †
6.2 .32 Complete TBM Tunnel overhead ventilation duct slab 0.2	0	23-Dec-22		2 .32 Complete TBM Tu	
6.2 .13 Complete excavation & installation of TBM Tunnel lining by length 0.65	0	28-Dec-22		▶ 6.2 .13 Complete ex	
6.2 .14 Complete excavation & installation of TBM Tunnel lining by length 0.7	0	09-Jan-23		◆ 6.2.14 (	
6.2 .27 Complete TBM Tunnel waterproofing 0.7	0	09-Jan-23	<u>├</u> ─┼───┼──┼──┼──┼──┼┼──┼┼──┼┼──┼──┼──┼──┼	<b>♦</b> 6.2 .27 (	
6.2 .15 Complete excavation & installation of TBM Tunnel lining by length 0.75	0	30-Jan-23	[ <del> </del> <del>        </del>		
5.2.110 SSTEP ROLL STOCKED A INSTANTACION OF FORM TAILING BY ICING IN 0.70		J 30 3411 23			
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♦ Actual Milestone		4	For Developments at South Apron  BOUYGUES  09-Apr-20 01V1 SP	a/LLo WYu	
Actual Work		<b>'</b>	TRAVAUX PUBLICS 17-Jul-20 01V2 SP	a/LLo WYu	
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		111166	s Month's Rolling Programme (Sep-22)	a/LLo WYu	
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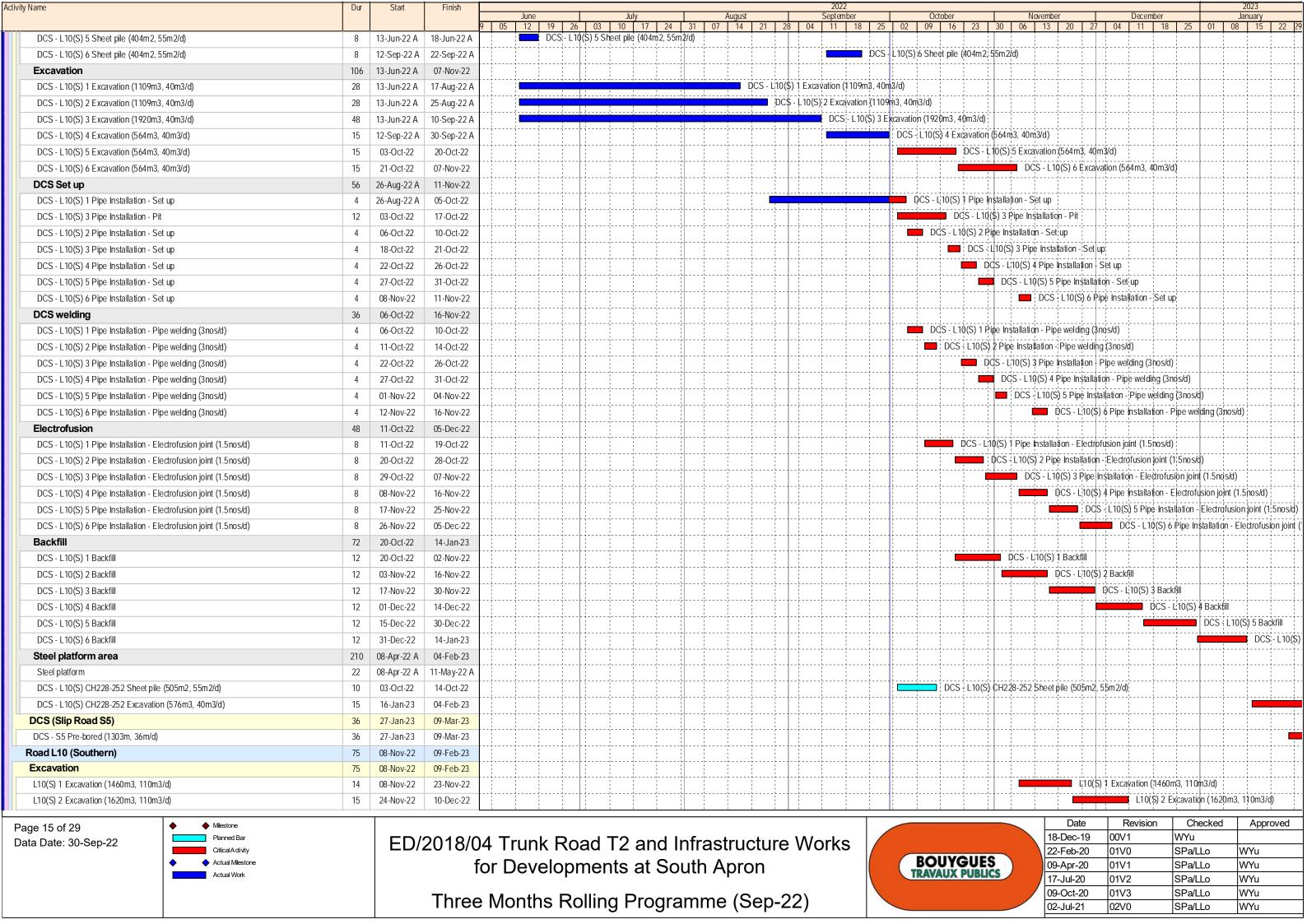
Activity Name	Dur	Start Finish											
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6.3 Cross Passages for TBM Tunnel	40	08-Nov-22 24-Dec-22											
6.3 .5 Complete Ground treatment for all Cross Passages 0.2	0	08-Nov-22	◆ 6.3.5 Complete Ground treatment for all Ci	oss Passages 0.2									
6.3.14 Complete excavation and support of Cross Passages 0.1	0	21-Nov-22	◆ 6.3:14 Complete; excavation a	nd support of Cross Passages 0.	<i>i</i> .1								
6.3 .6 Complete Ground treatment for all Cross Passages 0.3	0	17-Dec-22	♦ 6.3.	Complete Ground treatment for	rall C								
6.3 .15 Complete excavation and support of Cross Passages 0.2	0	24-Dec-22		6.3.15 Complete excavation ar	nd¦ su								
7.1 Western Ventilation Building	97	13-Jun-22 A 13-Sep-22 A											
7.1 .5 Complete pile foundation for WVB 0.5	0	13-Jun-22 A	◆ 7.1 5 Complete pile foundation for WVB 0.5										
7.1 .6 Complete pile foundation for WVB 1	0	18-Jun-22 A	♦ 7.1.6 Complete pile foundation for WVB 1	· i i i i									
7.1 .7 Complete concrete works of gross plan area for WVB 0.25	0	13-Sep-22 A	◆ 7.1.7 Complete concrete works of gross plan area for WVB 0.25										
8.1 Eastern Ventilation Building	0	13-Sep-22 A 13-Sep-22 A											
8.1 .3 Complete excavation for EVB 1	0	13-Sep-22 A	♦ 8.1 .3 Complete excavation for EVB :1										
9.1 Launching Shaft	36	09-Dec-22 27-Jan-23											
9.1 .18 Complete permanent wall & bottom slab for Launching Shaft by length 0.2	0	09-Dec-22	◆ 9.1.18 Com	blete permanent wall & bottom sla	lab fc								
9.1 .19 Complete permanent wall & bottom slab for Launching Shaft by length 0.4	0	10-Jan-23		◆ 9.1.19 Compl	olețe								
9.1 .20 Complete permanent wall & bottom slab for Launching Shaft by length 0.6	0	27-Jan-23		•	<b>•</b> 9								
11.1 Drill and Break Tunnel	246	12-Feb-22 A 23-Dec-22											
11.1.2 Complete tunnel excavation 0.3 by length	0	12-Feb-22 A											
11.1.2 Complete tunnel excavation 0.4 by length	0	13-May-22 A	tunnel excavation 0.4 by length										
11.1.2 Complete tunnel excavation 0.5 by length	0	13-Jun-22 A	♦ 11,1.2 Complete tunnel excavation 0.5 by length										
11.1.3 Complete tunnel excavation 0.6 by length	0	13-Jul-22 A	♦ 11.1.3 Complete tunnel excavation 0.6 by length		<u>1</u>								
11.1.5 Complete tunnel excavation 0.7 by length	0	13-Sep-22 A	♦ 11.1.5 Complete tunnel excavation 0.7 by length										
11.1.7 Complete tunnel excavation 0.8 by length	0	08-Nov-22	◆ 11:1.7 Complete tunnel excavation 0.8 by	ength									
11.1.9 Complete tunnel excavation 0.9 by length	0	01-Dec-22	→ 11.1.9 Complete tun	el excavation 0.9 by length									
11.1.11 Complete tunnel excavation 1 by length	0	23-Dec-22		11.1.11 Complete tunnel excava	/ation								
11.2 Cross Passages for Drill and Break Tunnel	0	26-Jan-23 26-Jan-23	▋-┆┆┆┆┆┆┆┆┆┆										
11.2.1 Complete cross passages structure 0.1 by length	0	26-Jan-23		•	<b>1</b> 1								
12.1 Drill and Blast Tunnel	177	14-Mar-22 A 13-Apr-22 A											
12.1.10 Complete tunnel excavation 0.9 by length	0	14-Mar-22 A											
12.1.11 Complete tunnel excavation 1 by length	0	13-Apr-22 A											
13.1 Lam Tin Interchange Works	51	20-Oct-22 19-Dec-22											
13.1.1 Complete foundation	0	20-Oct-22*	◆ 13.1.1/Complete foundation										
13.1.2 Complete fabrication of structural frame	0	19-Dec-22*	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 .2 Complete fabrication of struc	ctura								
15.0 E&M Design Works	212	13-Jan-22 A 14-Nov-22											
15.0 .25 Submit DDA for Tunnel lighting system	0	13-Jan-22 A											
15.0 .26 Approval DDA for Tunnel lighting system	0	14-Nov-22	◆ 15;0 .26 Approval DDA for Tunnellig	ting system									
15.2 E&M Works for Western Ventilation Building	2	13-Jul-22 A 13-Jul-22 A											
15.2 .1 Complete terminal, mat, pit, conduit, opening and recess etc. 0.5	0	13-Jul-22 A	♦ 15.2.1 Complete terminal, mat, pit, conduit, opening and recess etc. 0.5										
15.2.9 Complete UG pipeworks from sumpit to manhole 0.5	0	13-Jul-22 A	♦ 15.2.9 Complete UG pipeworks from sumpit to manhole 0.5										
15.3 E&M Works for Eastern Ventilation Building	0	13-Sep-22 A 13-Sep-22 A											
15.3.1 Complete terminal, mat, pit, conduit, opening and recess etc. 0.5	0	13-Sep-22 A											
15.4 APS Works for Western Ventilation Building	86	30-Sep-22 16-Jan-23											
15.4 .1 Complete site delivery of DeNO2 filters	0	30-Sep-22*	◆ 15.4.1 Complete site delivery of DeNO2 filters										
15.4.3 Complete site delivery of electrostatic precipitation system	0	30-Sep-22*	◆ 15.4.3 Complete site delivery of electrostatic precipitation system										
15.4.5 Complete site delivery of wash down system	0	30-Sep-22*	♦ 15.4.5 Complete site delivery of wash down system										
15.4 .7 Complete site delivery of support system	0	30-Sep-22*	◆ 15.4.7 Complete site delivery of support system										
15.4.2 Complete installation of DeNO2 filters	0	16-Jan-23*		♦ 15.4.20	Com								
15.4.4 Complete installation of electrostatic precipitation system	0	16-Jan-23*		♦ 15.4.40	Com								
15.4 .6 Complete installation of wash down system	0	16-Jan-23*		♦ 15.4 .6 0	Com								
					-								
Page 10 of 29			Date Revision	Checked Approved	d								
Data Date: 30-Sep-22		ED/2018/0	M Trunk Road I / and intractificities whorks	MYu SPa/LLo WYu									
◆ Actual Milestone			22-Feb-20 01V0	SPa/LLo WYu	-								
Actual Work			TO DOVOIDDITIONS AT COULT ADION	SPa/LLo WYu	$\dashv$								
		TI	00.0 + 00 - 044/0	SPa/LLo WYu	=								
		ınre	A MARTINE PAIINA Programma (San 17)	SPa/LLo WYu									
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Activity Name	Dur	Start Finish					A		2022		2.1.1				D 1		2023	
			9	June	July 03 10 1	7   24   31   07	August 21	28 04	September 11 18		October 16 23	30 06 13	per 20	27   04	December 11 18	25 0	January 01 08 15	22 29
15.4.8 Complete installation of support system	0	16-Jan-	23*														<b>♦</b> 15	.4 .8 Com
17.1 Works under Sections 6A, 6C and 12 and Associated Landscape	48	30-Sep-22 28-Nov	-22												-i			
17.1 .13 Complete footpath 0.25	0	30-Sep	22							◆ 17.1 .13 C	omplete footpath	0.25			-	[		ŢŢ-
17.1 .15 Complete footpath 0.8	0	30-Sep	-22							♦ 17.1.15 C	omplete footpath	0.8						
17.1.16 Complete footpath 1	0	30-Sep	-22							◆ 17.1.16 C	omplete footpath	1						
17.1.17 Complete street furnitures of at-grade roads 0.25	0	30-Sep	-22							♦ 17.1.17 C	omplete street fu	rnitures of at-grade	roads 0.2	25		:		
17.1 .56 Complete landscaping works 0.5	0	18-Oct	22						<del></del>		♦ 17,.1 .56 (	Complete landscap	ing works	0.5		; :		
17.1.19 Complete street furnitures of at-grade roads 0.8	0	04-Nov	-22									♦ 17.1 .19 Cd	mplete stre	eet furniture	s of at-grade r	bads 0.8		- <del></del>
17.1 .57 Complete landscaping works 0.8	0	08-Nov	-22									♦ 17.1.5	7 Complete	landscapir	ng works 0.8			
17.1 .20 Complete street furnitures of at-grade roads 1	0	28-Nov	.22											17.1.20	Complete stree	t furnitures	s of at-grade road	ds 1
17.1 .58 Complete landscaping works 1	0	28-Nov	-22												Complete land	i		
17.1 .60 Complete whole activities of this cost centre 1	0	28-Nov	.22						; 							ļ	s of this cost cent	re 1
17.2 Irrigation System for Works under Sections 6A, 6C and 12 and As	48	30-Sep-22 28-Nov														: :		· <del> </del> <del> </del> -
17.2 .1 Complete irrigation system 0.3	0	30-Sep								• 17.2.1 Co	mplete irrigation	system 0.3						· <del> </del> <del> </del> -
17.2 .2 Complete irrigation system 0.6	0	18-Oct-							<u> </u>			omplete irrigation s	ystem 0.6			:		
17.2.3 Complete irrigation system 1	0	08-Nov							ļ <u></u>			◆ 17.2.3			stem 1	:		
17.2 .4 Complete whole activities of this cost centre 1	0	28-Nov														activities	of this cost centre	
17.2 Remaining Stage 5 Infrastructure Works - Road L10 (Southern Se	20	29-Dec-22 26-Jan																
17.4.1 Complete excavation and disposal of material works 0.25	0	29-Dec-22 20-Jan														<b>♦</b> 17 <i>4</i>	4 .1 Complete ex	cavation a
17.4.2 Complete excavation and disposal of material works 0.5	0	11-Jan															◆ 17.4.2	. 1 1
17.4.3 Complete excavation and disposal of material works 0.8	0	26-Jan														:	↓ ↓	4 17
17.5 Remaining Stage 5 Infrastructure Works - Landscaped Elevated V																: :		
17.5 .11 Complete concrete works of pile caps 0.5	0	13-Apr-22 A 03-Jair		-iiiiiii												: :		· <del> </del> <del> </del> -
17.5 .16 Complete concrete works of piers 0.25	0	·		concrete works of piers 0.25														
	0	13-Julay		• toricrete works or prefs 0.23 • 17,5 .17 Complete	concrete works	of piors 0.5			} <del> </del>						ļ			
17.5.17 Complete concrete works of piers 0.5	-				conciete works				<b>▲</b> 17 E 10 C	Complete concrete	utorks of place					<u> </u>		· <del> </del> <del> </del> -
17.5.18 Complete concrete works of piers 0.8	0	13-Sep-:							. ▼ 1/i.3.10 L			-				<u> </u>		
17.5.12 Complete concrete works of pile caps 0.8	0	30-Sep								i j		works of pile cap				<u> </u>		
17.5 .13 Complete concrete works of pile caps 1	0	30-Sep								1 1		works of pile cap				<u> </u> 		
17.5.21 Complete concrete works of deck 0.25	0	30-Sep						.; ;	¦ 			works of deck 0				ļ		
17.5.25 Complete prestressing works of deck 0.25	0	30-Sep								◆ 17.5.25 C	:	sing works of deck						
17.5 .29 Complete lift shaft A and B 0.5	0	25-Oct		-+							♦ 17	.5 .29 Complete lift			<u> </u>	<u>.</u>		
17.5 .30 Complete lift shaft A and B 1	0	14-Nov											7¦5 .30 Co  		haft A and B	:		
17.5 .19 Complete concrete works of piers 1	0	02-Dec							ļi							i	vorks of piers 1	
17.5 .31 Complete lift shaft C and D 0.5	0	10-Dec						.;;	; }					•		ļiļ	shaft Cand D 0.	. <del>.</del>
17.5 .22 Complete concrete works of deck 0.5	0	12-Dec													t t		concrete works of	1 1
17.5 .26 Complete prestressing works of deck 0.5	0	12-Dec	22		1 1					1 1		1 1			♦ 17.5.26 (	complete p	orestressing work	s of deck
17.5.23 Complete concrete works of deck 0.8	0	03-Jan															17.5.23 Comp	.11
17.5.27 Complete prestressing works of deck 0.8	0	03-Jan						<u>.</u> [].								•	▶ 17.5 .27 Comp	lete prestr
17.5.32 Complete lift shaft C and D 1	0	03-Jan							; }							•	▶ 17.5 .32 Comp	lete lift sha
21.3 Establishment Works for Improvement Works at the Junction of H	0	14-Jan-23 14-Jan																
21.3.2 Complete establishment works for 6 mths completion of softworks	0	14-Jan													ļ	<u> </u>	♦ 21.3	2 Comple
21.5 Establishment Works for Improvement Works at the Junctions of	72	13-Apr-22 A 13-Apr-2							ļ							<u> </u>		.‡
21.5.3 Complete establishment works for 9 mths completion of softworks	0	13-Apr-2		s completion of softworks			1 1				1 1						1 1	
21.5 .4 Complete whole activities of this cost centre	0	13-Apr-2	2 A en	ntre											! ! ! !		1 1	
22.1 Pipelines for District Cooling System for Commissioning of AMAV	415	13-Jan-22 A 13-Jul-2	2 A															.11
22.1 .3 Complete DCS installation length 0.8	0	13-Jan-2											<u> </u>					<u>.</u>
22.1 .5 Complete T&C of DCS system 1	0	13-Jun-2	2 A	◆ 22.1 .5 Complete	&C of DCS syst	em 1							. ] ].					
22.1 .6 Complete whole activities of this cost centre 1	0	13-Jul-2	2 A		◆ 22.1	.6 Complete whole ac	tivities of this c	ost centre 1			1 1		<u> </u>		<u> </u>	<u></u>	1 1	<u> </u>
Page 11 of 29 ♦ Milestone			-	<del></del>			· <del></del>	· · · · · · · · · · · · · · · · · · ·					Date	F	Revision	Check	ked App	roved
Data Date: 30-Sep-22		ED/2019	2/0/	4 Trunk Roa	4 T2 ~	nd Infrac	tructu	ro \//	rks				8-Dec-19			WYu		
Critical Activity								IC AAO	פאוי	De	MYALIF		2-Feb-20			SPa/LLo		
◆ Actual Milestone  Actual Work			fo	or Developm	ents a	t South A	Apron			TRAV	OUYGUE	ec /	9-Apr-20			SPa/LLo		
Acidal vvolk				•			•		\	INA	. ASA FUEL		7-Jul-20	01V		SPa/LLo		
		Thr	ee	Months Roll	ina Pro	ogramme	e (Sen	-22)					9-Oct-20 2-Jul-21	01V 02V		SPa/LLo SPa/LLo		
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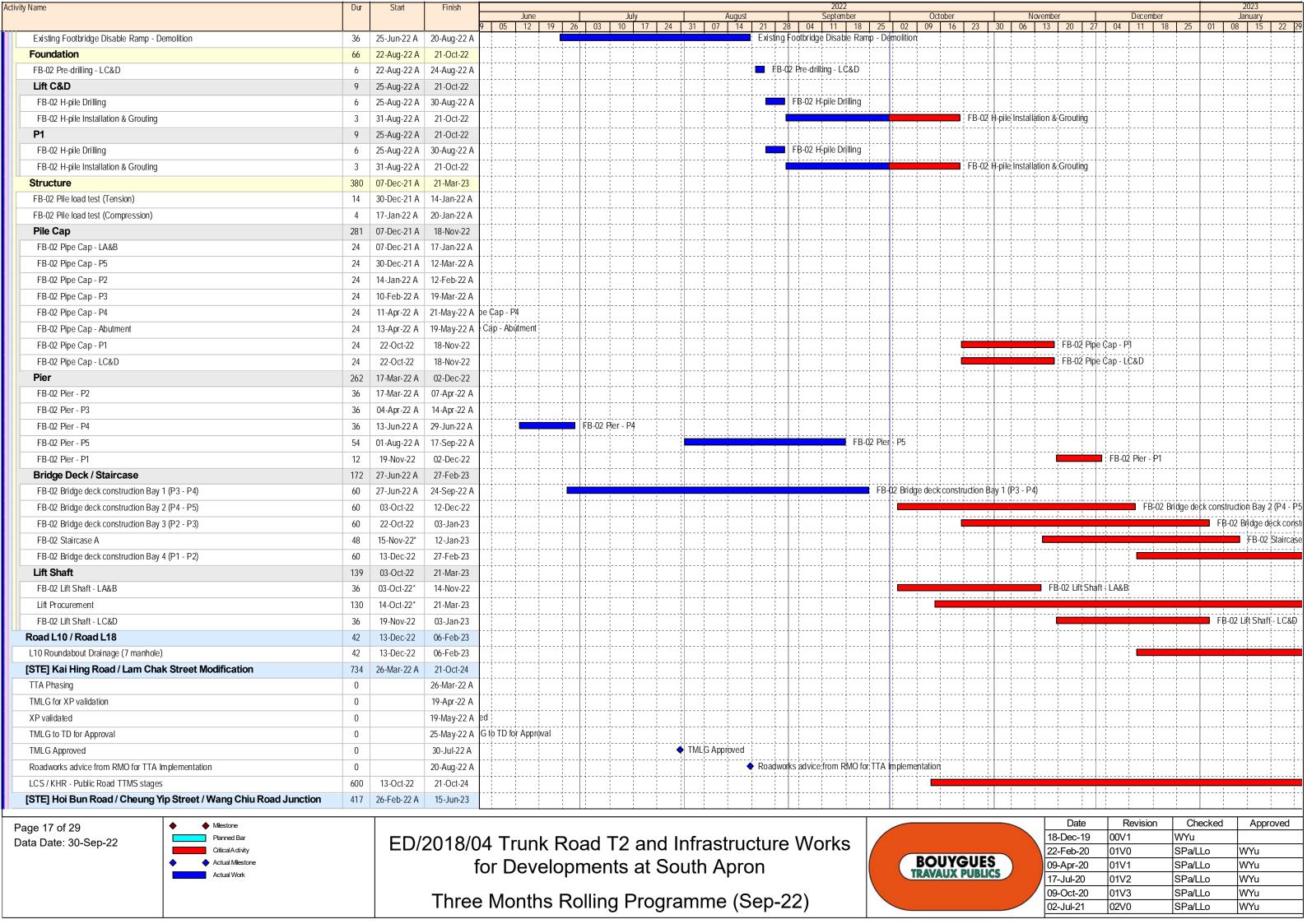
Activity Name	Dur	Start	Finish											2022										202	}
				9   05	June 12 11	)   26	03	July 10 17	24	31   07	August 14	21 28	S	September 11 18 1	25 [ (	Oc 02   09	tober	30	Novemb	er 20   27	Decei	mber 18	25	Janua na I na I	ry 15   22   29
34.1 Common Utilities Enclosure (CUE) under Section 6A of the Works	0	28-Nov-22	28-Nov-22	00	12 1	20	03	10 17	27	51 07	17	21 20	01	11 10	20	52 07	10 23	30	13	20 27	04 11	10	20	01 00	10 22 27
34.1 .19 Complete whole activities of this cost centre 1	0		28-Nov-22	† <del>†</del>	· i i						<del> </del>				; ;		ii			•	34,1 .19 Compl	ete whole	activitie	s of this cost o	entre 1
34.2 Common Utilities Enclosure (CUE) under Section 13 of the Works	88	13-Aug-22 A	06-Jan-23							<del> </del>   															
34.2 .4 Complete concrete works of base slab of CUE 0.5	0		13-Aug-22 A							<	34.2.4	Complete	concrete	works of bas	e slab of (	CUE 0.5	]					[			
34.2 .8 Complete concrete works of walls of CUE 0.5	0		30-Sep-22							   					<b>♦</b> 34	4.2.8 Com	plete concre	te works of	walls of Cl	JE 0.5					
34.2 .12 Complete concrete works of top slab of CUE 0.5	0		26-Oct-22												1		•	34 2 .12 C	omplete co	ncrete work	s of top slab of				
34.2 .2 Complete excavation of CUE	0		05-Dec-22												:						<b>◆</b> 34,2.20	om plete	excavati	on of CUE	
34.2.9 Complete conαete works of walls of CUE 0.75	0		06-Jan-23	† <del>†</del>	· i i									<del>-</del>	; ; 		ii							<b>♦</b> 34.2.9 C	omplete conc
35 Services Gallery	292	13-Apr-22 A	17-Jan-23					:				[			:				!						
35.16 Complete 20% of total length (measured on plan) of SG structures in Drill-and-Break	0		13-Apr-22 A	l on plan)	of SG struc	lures in	Drill-and-Br	reak and D	rill-and-Bla	ast Tunnel		[]			[		]		!	]		[			
35.32 Complete 50% of total volume (measured on plan) of excavation for Lower Basemen	0		13-Apr-22 A	d on plar	of excava	ion for L																			
35.33 Complete 75% of total volume (measured on plan) of excavation for Lower Basemen	0		13-Jun-22 A		♦ 35 33 (	Complet	e 75% of to	tal volume	(measure	d on plan) o	fexcavati	ion for Lo	wer Basen	nent of East V	Ventilation	Building									
35.18 Complete 60% of total length (measured on plan) of SG structures in Drill-and-Break	0		13-Sep-22 A	† <u></u>										◆ 35.18 Co	mplete 60	0% of total	length (mea	sured on pla	an) of SG s	tructures in	Dri l-and-₿reak	and Drill-	and-Blas	st Tunnel	
35.21 Complete 10% of total length (measured on plan) of Services Gallery structures and	0		13-Sep-22 A	† <del>-</del>	·									◆ 35.21 Co	mplete 10	0% of total	length (mea	sured on pla	n) of Serv	ices Gallery	structures and a	ancillaries	in TBM	Tunnel	
35.34 Complete 100% of total volume (measured on plan) of excavation for Lower Baseme	0		13-Sep-22 A	<del> </del>	ii									◆ 35.34 Ca	mplete 10	00% of tota	volume (me				:: Lower Baseme			ion Building	
35.14 Complete 80% of total length (measured on plan) of SG excavation in Drill-and-Breal	0		01-Nov-22												:			♦ 35.1	4 Complete	e¦80% of tota	ıl length (meası	red on p	lan) of S	G excavation	n Drill-and-Br
35.22 Complete 20% of total length (measured on plan) of Services Gallery structures and	0		16-Nov-22												<u> </u>	!			•		lete 20% of tota				
35.35 Complete concreting works of 25% of the total gross plan area for the Lower Baseme	0		25-Nov-22	<del> </del>											<u> </u>		<del></del>			♦ 35.	35 Complete co				
35.23 Complete 30% of total length (measured on plan) of Services Gallery structures and	0		15-Dec-22	† <del>†</del>						·					† <del> </del>		<del>  </del>			† <del> </del>	<b>→</b>	35.23 C	omplete	30% of total le	ngth (measur
35.15 Complete 100% of total length (measured on plan) of SG excavation in Drill-and-Brea	0		23-Dec-22	† <del>-</del>											: <del> </del>							•	35.15 Co	mplete 100%	of total length
35.24 Complete 40% of total length (measured on plan) of Services Gallery structures and	0		17-Jan-23												:									•	> 35.24 Com
SOUTH APRON EXTERNAL WORKS	889	21-Oct-21 A	21-Oct-24	1											<u> </u>										
Road S20	694	21-Oct-21 A	23-Feb-24		·										<del> </del>		ļ			<del></del>					
CUE (Section 6A)		28-Dec-21 A													<del>  </del>		ļ								
CKR Crossing		30-May-22 A		<del> </del>											‡ !		<del>  </del>								<del>-</del>
BS/E&M		30-May-22 A		· <del> </del> ·	11										† !		<del>  </del>								
CUE L10(N) Watermain (100m, 30m/wk)	40	30-May-22 A	05-Jul-22 A				CUE	E L10(N) W	Vatermain (	(100m, 30m	/wk)				:		1		!						
Entrance	188	28-Dec-21 A	17-Aug-22 A												!										
Structure	30	28-Dec-21 A	11-Apr-22 A												!										
Entrance - Waterproofing, Backfill & Remove S1	9	28-Dec-21 A	07-Jan-22 A												<u> </u>		<u> </u>								
Entrance - Structure (Wall & Top Slab)	15	08-Jan-22 A	25-Jan-22 A							! ! !	-														
Entrance - Strength & Falsework dismantle	6	26-Jan-22 A	11-Apr-22 A					}																	
BS/E&M		11-Apr-22 A			]												]								
Entrance - E&M Installation		11-Apr-22 A										, ,	&M Installa	ation	<u> </u>		ļļ			ļļ					
Junction		28-Dec-21 A													<u> </u>		ļ			ļļ					
Structure		28-Dec-21 A													<u> </u>		ļ			ļ					
Junction - Structure (Wall & Top Slab)	12	28-Dec-21 A	•				-								<u> </u>		ļļ			ļ		. į į			
Junction - Waterproofing, Backfill & Remove S2	9	20-Apr-22 A	•	i	.ii										<u> </u>		ļļ			ļ					
Junction - Waterproofing, Backfill & Remove S1	9	30-Apr-22 A													¦		ļļ.			ļ				<del> </del> <del> </del>	
Junction - Strength & Falsework dismantle		11-May-22 A		rength &	Haisework d	ısmantle 	<b>e</b>								ļļi										
BS/E&M		24-May-22 A			lun c#	on: F	M 1ct Eigh	octalistics							<u> </u>		<u> </u>			<u> </u>					
Junction - E&M1st Fix Installation	Iδ	24-May-22 A		·	Junci		M 1st Fix In			ctallation					<u> </u>		<u> </u>			ļ					
Junction - E&M Installation	24		12-Jul-22 A	ļ				;	n:- E&MIn:						<del></del>		ļļ								
Junction - Backfill	12		23-Jul-22 A	ļļ	.				Junctio	n - Backfill					<u> </u>		<u> </u>								
S20 (Section 6A)	694									 					<u> </u>				1						
Future Carriageway - Stage 3		21-Oct-21 A		3 (Drain	age & Wate	main n	at CHEV	 							ļ 				 						
S20 Stage 3 (Catchest, Cully)			20-May-22 A					chnit Colle	٠ <u>-</u>						ļ ļ		ļļ		<del> </del>						
S20 Stage 3 (Catchpit, Gully)		24-May-22 A					taģe 3 (Cato			C 20 C+	ΛΝο+	nain)			<u> </u>		ļļ			ļļ		-}}			
S20 Stage 3 (Watermain)	36	22-Jun-22 A	30-Jul-22 A		<u> </u>	i	1	i		S20 Stage	(vv atel II	ııdıl I J¦	<u> </u>	- 1	<u>i                                     </u>	-	<u> </u>		<del>-                                    </del>	<u> </u>	1	<u> </u>	<u> </u>		<u> </u>
Page 12 of 29				_		_	_		-	_									10	Date	Revision 00V1		Chec	ked A	pproved
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			Three	; IVIC	ภาเกร	ΚC	פווווע	1 210	yıar	пте	(26	:p-2	<b>∠</b> )						02	2-Jul-21	02V0	S	Pa/LLc	) WY	
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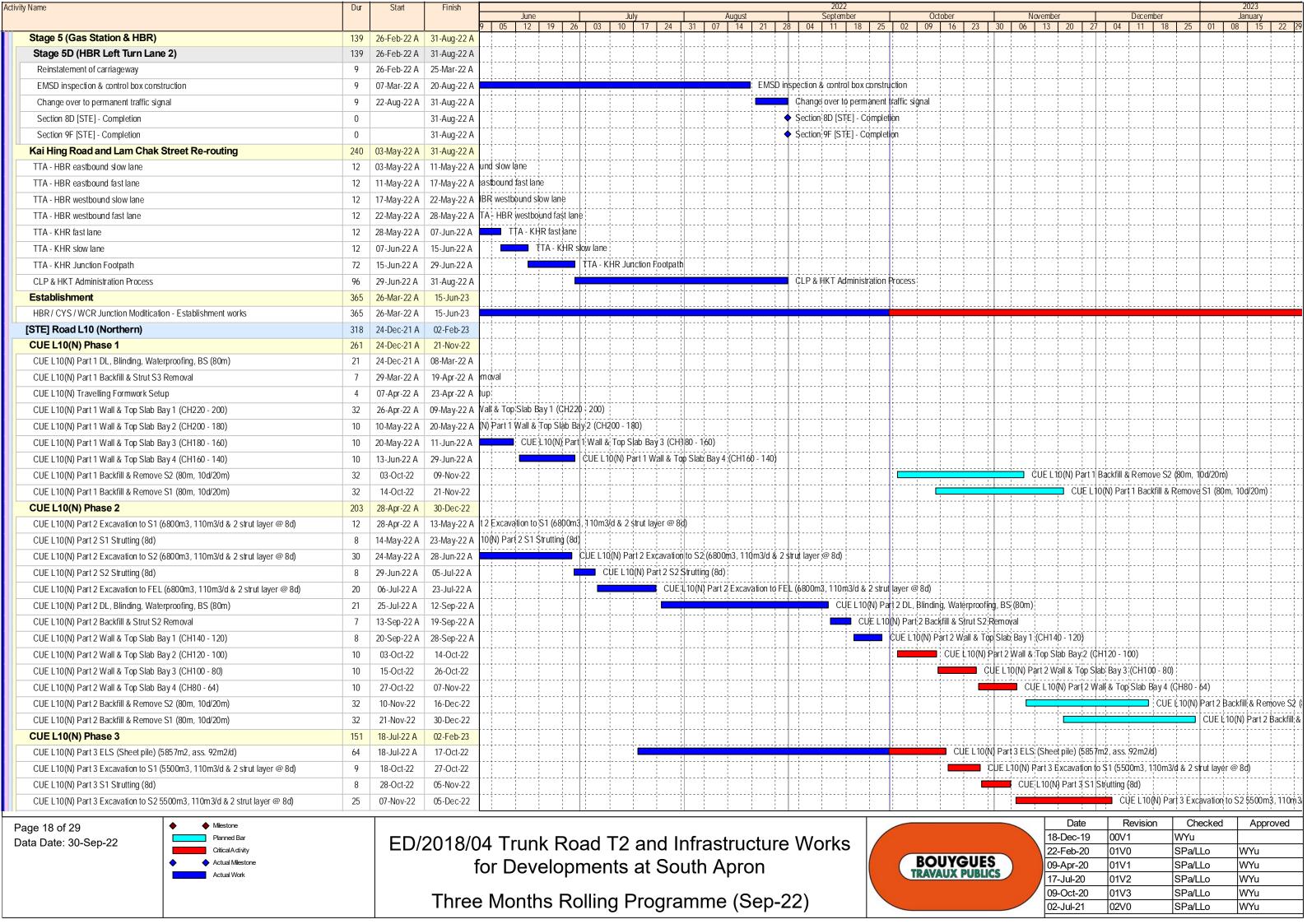


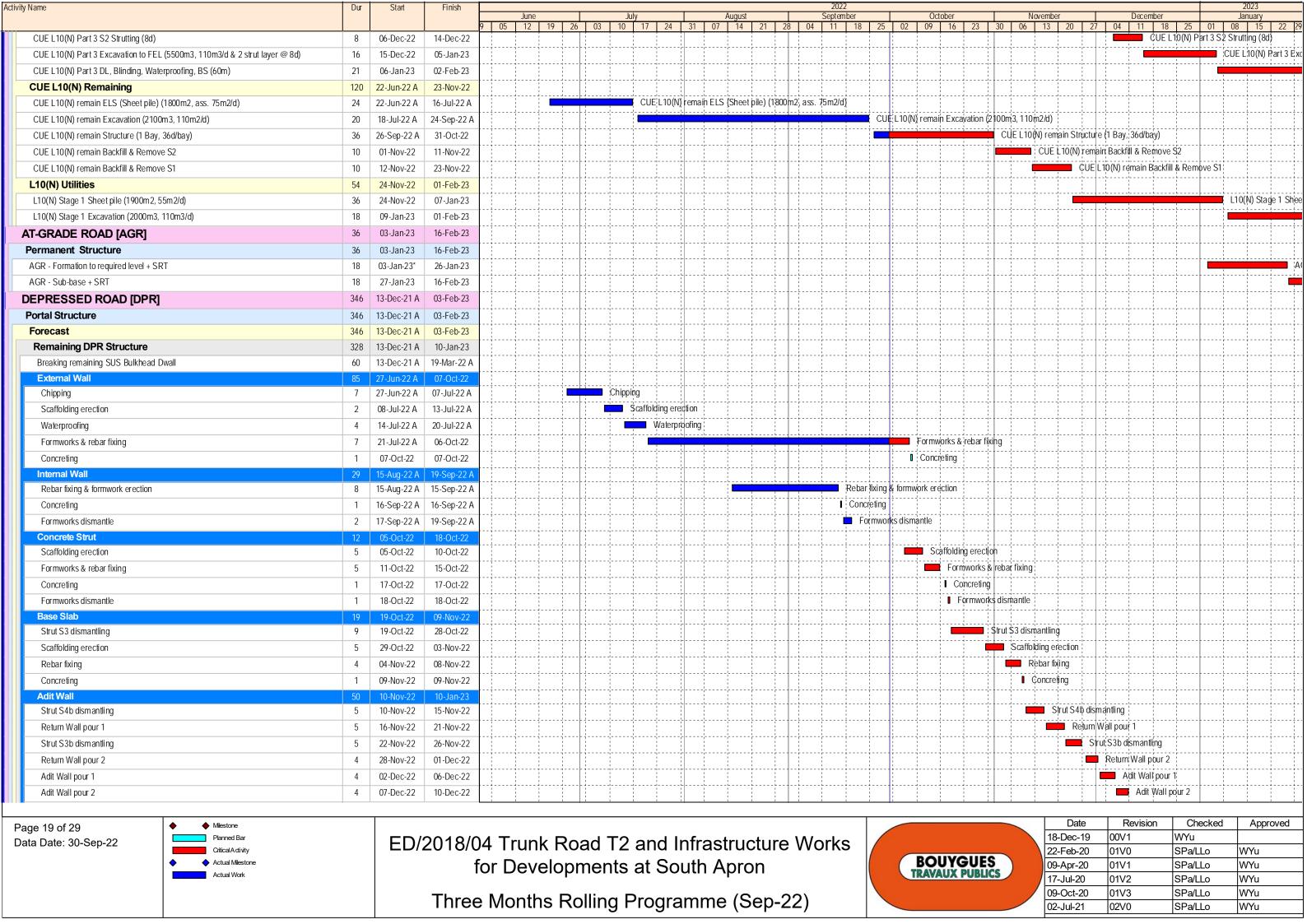




Activity Name	Dur	Start	Finish											2022			0 : :								2023	
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L10(S) 3 Excavation (1700m3, 110m3/d)	16	12-Dec-22	31-Dec-22																						3 Excavation	n (1700n
L10(S) 4 Excavation (960m3, 110m3/d) & Strutting (6d)	15	03-Jan-23	19-Jan-23	1						-j- j   				<del>j</del>					1							L10(S):4
L10(S) 5 Excavation (960m3, 110m3/d) & Strutting (6d)	15	20-Jan-23	09-Feb-23	1						- -									-							
Drainage	54	24-Nov-22	01-Feb-23						<del>-</del>						11				1							
L10(S) 1 Drainage & Sewerage (5 manhole, 6d/nos)	30	24-Nov-22	30-Dec-22								1								1					■ L10(S) 1	Drainage 8	k Sewera
L10(S) 2 Drainage & Sewerage (3 manhole, 6d/nos)	18	31-Dec-22	21-Jan-23												† <u>†</u>											L10(\$)
L10(S) 3 Drainage & Sewerage (1 manhole, 6d/nos)	6	26-Jan-23	01-Feb-23	<del> </del>							<del></del>			<del>-</del>	‡ <u>†</u>											
Watermain	30	31-Dec-22	08-Feb-23							-					<del></del>											
L10(S) 1 Watermain (30m/6d)		31-Dec-22	14-Jan-23												<u> </u>										L10(	; ; S) 1 Wat∈
L10(S) 2 Watermain (30m/6d)			08-Feb-23																							
Backfill			01-Feb-23									<u>-</u>								1 1						
L10(S) 1 Backfill			01-Feb-23																							
Outfall 2 & Branch Drainage			30-Jan-23								<del> </del>															
Portion H1		17-May-22 A									<del> </del>									ļļ.						
Portion H1 Possession	0	,	17-May-22 A	ossessio						H			-						-	<del></del>						
Section H1 part 1 Sheet pile (878m2, 55m2/d)		17-May-22 A	<del>-</del>	11		art 1 Sh	eet pi	ile (878m2, 55	m2/d)	H	<del>  </del>	<del> </del>		<del> </del>	‡ <del> </del>		·j			<del></del>					<del>i</del>	
Section H1 part 1 Excavation (1090m3, 110m3/d)		,	06-Jul-22 A							cavation (10	.: 0m3. 110	; Dm3/d)		<del>i</del>	ţ		·j								<del> </del>	<del> </del>  -
Section H1 part 1 Excavation (10 70113, 11 011370)			20-Jul-22 A								.		-		<del></del>											
Section H1 part 1 Backfill			27-Jul-22 A	ļ <del> </del>						Section H1 pa		sfill			<u> </u>											
Section H1 part 2 Pre-treatment			21-Sep-22 A												Section	H1 part 2	) Droitros	ıtmont								
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Section H1 part 2 Sheet pile (648m2)		·	13-Oct-22												÷÷		- 5ec	1101;1 m 1 pa	- 1		1 ;					
Section H1 part 2 Excavation (848m3)		14-Oct-22	29-Oct-22	ļ															Section H	part 2 Excavatio	1_1'					
Section H1 part 2 Drainage		31-Oct-22	12-Nov-22												ļ					Section H1 pa						
Section H1 part 2 Backfill		14-Nov-22	19-Nov-22	ļļ						. <u></u>					ļļ					Sectio						
Section H1 part 3 Pre-treatment	12	21-Nov-22	03-Dec-22	ļ						<u> </u>	ļļ		ļ		įį					ļ		Section H1 p				
Section H1 part 3 Sheet pile (504m2)	10	05-Dec-22	15-Dec-22	ļļ											įį				.li				Section H1	part 3 Shee		
Section H1 part 3 Excavation (660m3)			31-Dec-22					1 1						 											H1 part 3 E	
Section H1 part 3 Drainage	12	03-Jan-23	16-Jan-23												1										Se	ction H1 p
Section H1 part 3 Backfill	6	17-Jan-23	26-Jan-23												ili					11						Se
Outfall 2	96	30-Sep-22	30-Jan-23												ili				.]]							
Portion H2 Full Possession	0		30-Sep-22*															ossessior								
Outfall 2 - Sheetpiling (528m2, assume half typical)	20	03-Oct-22	26-Oct-22																utfall 2 - Sh	etpiling (528m2						
Outfall 2 - Excavation to S1 (+4.7 to + 3.5, 136m3)	5	27-Oct-22	01-Nov-22															_	Outfall	2 - Excavation to	S1 (+4.7	7 to + 3.5, 13	6m3)			
Outfall 2 - S1 Installation	6	02-Nov-22	08-Nov-22	I																Outfall 2 - S1 Inst						
Outfall 2 - Excavation to S2 (+3.5 to +1.7, 203m3)	8	09-Nov-22	17-Nov-22																	Outfall 2	2 - Ex¢av	ation to S2 (	+3.5 tb +1	.7, 203m3)		
Outfall 2 - S2 Installation	6	18-Nov-22	24-Nov-22	1											:						Outfall 2 -	S2 Installat	on ¦			
Outfall 2 - Excavation to FEL (+1.7 to -1.4, 350m3)	14	25-Nov-22	10-Dec-22	† <del>†</del>							÷			<del>j</del>	††				1			Outfal	l 2 - Exca	ation to FEL	(+1.7 to -1	.4, 350mí
Outfall 2 - Ground Improvement Works for FEL	4	12-Dec-22	15-Dec-22	1		·j				-j-	<u> </u>			<del>j</del>	į				1				outfall 2 - (	Ground Impro	overnent W	orks for F
Outfall 2 - Base Slab (12m3)	2	16-Dec-22	17-Dec-22	li															1				Outfall 2	- Base Slab (	12m3)	
Outfall 2 - Backfill to Pipe Bottom Level	2	19-Dec-22	20-Dec-22	1							1			<u>-</u>					1					2 - Backfill t		
Outfall 2 - Pipe Installation up to seawall block			06-Jan-23								·			<del>-</del>	‡ <del> </del>					<u> </u>						
Outfall 2 - Steel Plate Installation			09-Jan-23								<del> </del>	<del> </del>		<u>i</u>	‡ <del> </del>		<del> </del>		-	<del></del>					Outfall 2 -	
Outfall 2 - Concrete surround installed pipes		10-Jan-23	12-Jan-23	<del>  </del>							<del> </del> <del> </del>			<del> </del>	ţ										<ul><li>Outfall</li></ul>	
Outfall 2 - Core-cut seawall		13-Jan-23	27-Jan-23								ļ <u>i</u>				<u> </u>										+	
Outfall 2 - Remaining pipes installation		28-Jan-23	30-Jan-23							H	ļ				<u> </u>											<u> </u>
Foot Bridge FB-02			21-Mar-23		-   -					H	ļ <u></u>		-	<u>i</u>	ļ					·						
Temp Ramp			20-Aug-22 A							<del>-</del>	ļ <u></u>		-	<u>i</u>	<u> </u>											
Temporary Ramp Construction		05-Feb-22 A 05-Feb-22 A					emry	orary Ramp Co	nstruction		<del> </del>				ļ											
Temporary Namp Constitution	Z4	00-1 CD-22 A	24-Juil-22 A		1 1	; '	σπρι	orary iyanip Q	znanuçiiUH	<u> </u>	<u> </u>	i		<u> </u>	<u>:                                    </u>		<u> </u>	1	<u> </u>	<u> </u>		<u> </u>	<u> </u>		<u> </u>	<u> </u>
Page 16 of 29   ◆ Milestone																				Date		Revision		Checked	Appro	oved
Data Date: 30-Sep-22		FD/2	2018/0	)4 T	runk	(R	oa	ad T2	and I	nfras	truc	ture	Wo	rks						18-Dec-19		0V1	WY		1401	
CriticalA dtivity  ◆ Actual Milestone		,														R	OIIV	GUE	S	22-Feb-20		1V0		a/LLo	WYu	
Actual Work			1	or L	Jeve	SIOP	mc	nents	at 50	utn A	pro	n				TR	AVAU)	( PUBLI	cs /	09-Apr-20 17-Jul-20		1V1 1V2		a/LLo a/LLo	WYu WYu	
						_					, _									09-Oct-20		1V3		a/LLO a/LLo	WYu	
			Three	e Mo	onth	s R	col	ling P	rogra	amme	: (S	ep-2	22)							02-Jul-21		2V0		a/LLO a/LLo	WYu	
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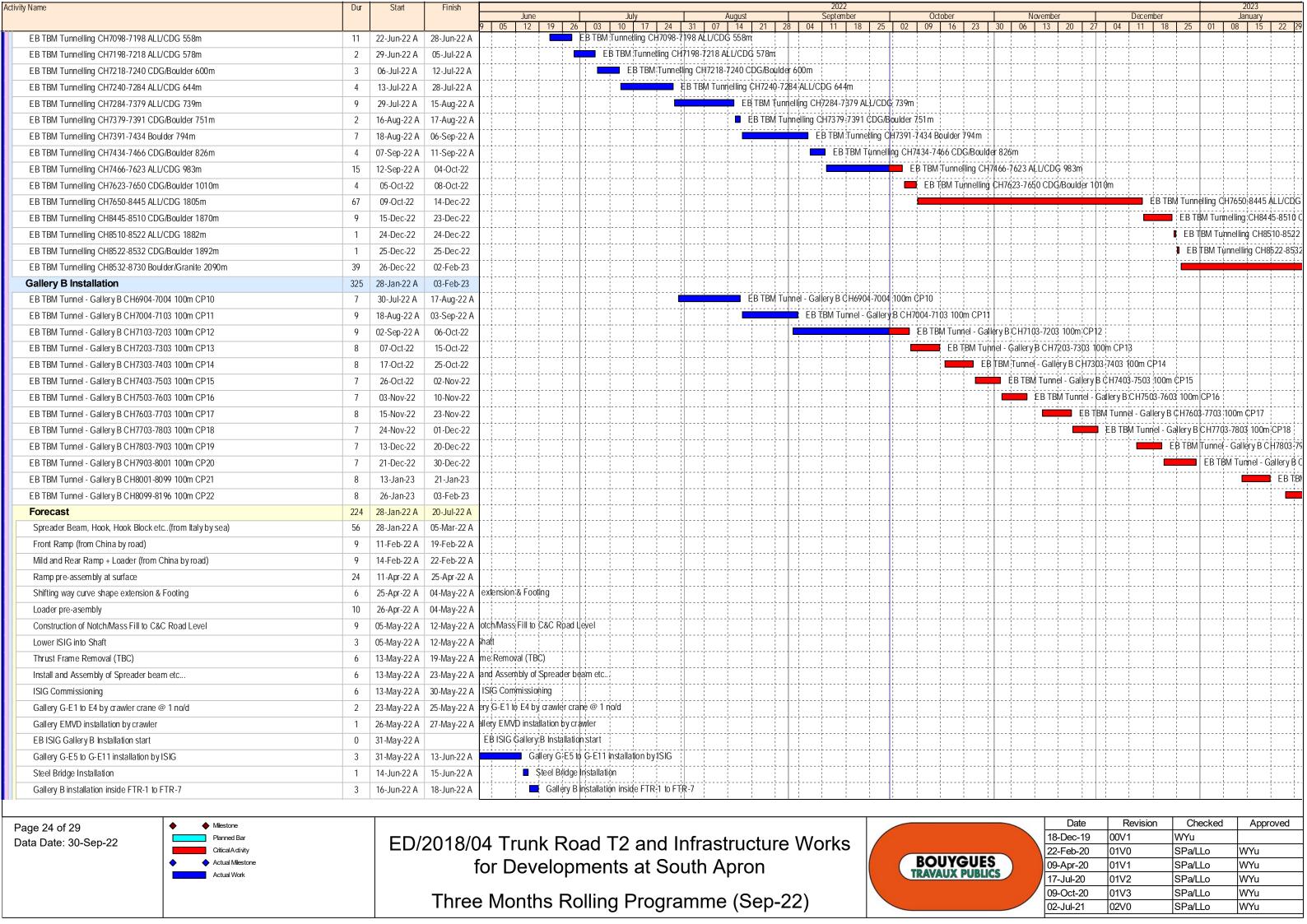


Activity Name	Dur	Start	Finish										2022											2023	
				9   05	June 12 1 19	9   26	03   10	July   17   24	<u> </u>	August		28 T	September 04 11 18	25		October 16	23	<del></del>	November 13 20 27	7   04	December 11 18	25	01   08	January 3   15	22   29
Contruction of Carriageway Slab	9	12-Dec-22	21-Dec-22	7 00	12		00   10	17 2						20	02 07		20	00 00	10 20 27			_	tion of Carr	riageway \$	lab ;
Stage 1B completion	0		21-Dec-22				-			· <del> -</del>		-1		i i-				<u> </u>			•	Stage 1	B completion	on	
Remaining external wall + Gain strength	9	22-Dec-22	04-Jan-23	1	ii		-					-		ili-			<u> </u>	<del> </del>					Rema	aining exte	rnal wall
Strut S1 & temporary steel bridge removal	6	05-Jan-23	10-Jan-23	li										i i-				<del> </del>						Strut S1 &	tempor
Portal Structure	297	03-Jan-22 A	03-Feb-23											<del></del>					<del></del>						
Falsework erection			19-Mar-22 A											<del>-</del>					<del></del>						
West side Capping Beam (B4-B9)		28-Mar-22 A												<del> </del> <del> </del>				<del> </del>	<del></del>						
East side Capping Beam (B4-B9)		31-Mar-22 A	·				<del>-</del>							<del> </del>											
Portal Beam part 1 (B7-B9)		08-Apr-22 A	· ·	n nart 1 (	.; R7-R0) :									<del></del>											
		·	•			al Boor	n part 2 (B4-B							ii-				ļ							
Portal Beam part 2 (B4-B6)		09-May-22 A												<u> </u>		ool Doom	loootion	Capping B							
Steel Beam location Capping Beam		27-Jun-22 A	08-Oct-22	ļ										÷		eel Bean	1 1.	1							
Steel Portal Beam installation (B1-B3)	12	10-Oct-22	22-Oct-22											<u>.</u>			, Steet i	orial Beam	installation (B1-B3	5)			<u>-</u>		
Capping Beam + Portal Beam	18	11-Jan-23	03-Feb-23		<u> </u>									ii.				ļ <u>i</u>							
WEST VENTILATION BUILDING [WVB]		20-Dec-21 A												ili.			]		jjj						
Excavation & Strutting		20-Dec-21 A	•									1		<u>.</u>			ļ	<u> </u>							
Excavation to below Strut S3 11,905m <sup>3</sup>	20	20-Dec-21 A	12-Jan-22 A											<u> </u>			<u> </u>								
Strut S3 Installation	24	03-Jan-22 A	19-Jan-22 A																					Ī	
Strut S3 Pre-loading	2	20-Jan-22 A	21-Jan-22 A							!							1								
Excavation to below Strut S4 8,930m <sup>3</sup>	15	22-Jan-22 A	18-Feb-22 A																			-			
Strut S4 Installation	20	10-Feb-22 A	15-Mar-22 A	T								1													
Strut S4 Pre-loading	2	16-Mar-22 A	17-Mar-22 A									-1		; <del> </del> ;											
Excavation to FEL 9,230m³	20	19-Mar-22 A	04-Apr-22 A	1	ii							-1		†  				1							
Building Structure	247	05-Apr-22 A	28-Feb-23	l - i	11							-1		ili-			ii-		iii			·			
WVB - Base Slab	67	05-Apr-22 A	30-Jun-22 A	1	11							-1		ili-			ii-		i i i						
WVB - Earth Mat Installation	24	05-Apr-22 A	22-Apr-22 A	1	ii							-1		ili-			ii-	l	1 1 1						
Base Slab construction Bay 2 & 4	20	23-Apr-22 A	24-May-22 A	Slab con	struction Ba	y 2 & 4	-					-		i			<del></del>	† <del>-</del>							
Base Slab construction Bay 1, 3 & 4	20	19-May-22 A	18-Jun-22 A		В:	ase Sla	construction	Bay 1, 3 & 4						i i-				<del>  </del>							
Tower Crane Erection		20-Jun-22 A					Tower Cran	e Erection						ili-				<del> </del>							
Tower Crane Operation	0		30-Jun-22 A	li	·		Tower Cran	e Operation						<u> </u>											
Basement Structure	197	20-Jun-22 A	28-Feb-23	<del>-</del>										<del></del>				<del> </del>							
WVB - Strut S4 Removal		20-Jun-22 A	15-Jul-22 A	<del>-</del>	·			- ¦¦ ■ ¦ WVB ¦- Str	ut S4 Remov	/al :				<del></del>											
WVB - Basement 2 Extenal Wall	21		02-Aug-22 A						WVE	B - Basem	ent 2 Exter	nal Wa		<del></del>											
WVB - Basement 2 External wall waterproofng & Mass Fill	18		16-Aug-22 A								1 1	- 1 - 1	t 2 External wall wat	i i . terproofr	ia & Mass	: FiA									
WVB - Strut S3 Removal	18		20-Sep-22 A										W	/VB - Str	ut S3 Rem	oval		<del> </del>	<del></del>						
WVB - Basement 2 Wall/Slab	-	29-Aug-22 A	28-Oct-22														jj.	1	ement 2 Wall/Slab						
WVB - Strut S2 Removal	18	29-Oct-22	18-Nov-22											<del></del>					WVB + Str	ut S2 Dan	noval				
WVB - Struct 32 Removal  WVB - Basement 1a Wall	-													<u> </u>								Rasamo	nt 1a Wall		
	30	09-Nov-22	13-Dec-22											<u> </u>				ļ <mark></mark>		- \ \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\			ıı ıa vvall		
WVB - Platform removal	12	19-Nov-22	02-Dec-22	ļļ										<u> </u>			ļļ-	ļ <u>.</u>					Docor	1 Futarr	
WVB - Basement 1 External wall waterproofing & Mass Fill	24	26-Nov-22	23-Dec-22	ļ										<u>:</u>   ; -			ļļ-	ļ <del>-</del>					- Base ment	t I Externa	
WVB - Strut S1 Removal	24	24-Dec-22	27-Jan-23											<u> </u>											V
WVB - Basement 1b Wall/Slab	45	04-Jan-23	28-Feb-23		į									<u>.</u>											
SOUTH APRON ADIT	52	03-Dec-22	08-Feb-23	ļ	.						ļļ.			ļļį.			ļļ.	ļ <u>i</u>	ļļ	. <u> </u>	<u></u> -	<u></u>	<u></u> _		
South Apron Adit - ELS & Pump Test & Strut Installation	30	03-Dec-22	10-Jan-23	ļ		<u>.</u> <del>.</del>						1		ļ			ļ		ļ					South Ap	
South Apron Adit - Base Slab & Wall Kicker	11	11-Jan-23	26-Jan-23	1										ļ <u>I</u> .				1							Sc
South Apron Adit - Strut S2 Removal	11	27-Jan-23	08-Feb-23																					,	
SUPPORTING UNDERGROUND STRUCTURE [SUS]	240	25-Jul-22 A	23-May-23																						
Permanent Structure	89	25-Jul-22 A	15-Nov-22																			[			
SUS - WB Partition Wall CH6150-6260	24	25-Jul-22 A	17-Oct-22						-,-,;		1	7				📫 SL	JS - WB	Partition Wa	III CH6150-6260						
Page 20 of 29   ♦ Milestone											·								Date	R	evision	Che	ecked	Appro	ved
Data Date: 30-Sep-22		FD/	2018/0	14 T	runk	R۸	ad Ta	bne (	Infra	etru	ctura	۱/ د	Norke						18-Dec-19	00V1		WYu			
CriticalAdivity												۷ ر	VOING		PC	)IIV	211EG		22-Feb-20	01V0		SPa/L		WYu	
♦ Actual Milestone  Actual Work				tor [	)evel	opi	ments	at S	outh .	Apro	on				TRAN	OUYG VAUX I	PUBLIC		09-Apr-20	01V1		SPa/L		WYu	
, sound troit						•				•					1100				17-Jul-20	01V2		SPa/L		WYu WYu	
			Three	e Mo	onths	R	ollina	Proar	amm	e (S	Sep-2	22	)						09-Oct-20 02-Jul-21	01V3 02V0		SPa/L SPa/L		WYu WYu	
							- 3	- <del>J</del> .					<u>'</u>	12					02-04I-21	102 0	,	Joi a/L		l** iu	

Activity Name	Dur	Start	Finish										2022											2023	
				9   05	June 12 19	26	03 1	July 0 17 24	4   31   C	August 7   14			September 04 11 18	25		October 16	23   30		ovember 13 20 2	<u> </u> 27	December 04 11 18	25	01 (	January 08 15	22 29
SUS - EB Partition Wall CH6150-6237	25	18-Oct-22	15-Nov-22*																	artition	Wall CH61 50-62				
Tunnel Internal Structure & Finishing	191	27-Jul-22 A	23-May-23		jj							1		ii:										<del>-</del>	
Westbound	111	27-Jul-22 A	13-Feb-23		]							1-[												· <del> </del>	
SUS - WB - OHVD Formworks Assembly	18	27-Jul-22 A	27-Aug-22 A		jj			1		j			WB - OHVD Form							-				<del>-</del>	
SUS - WB - OHVD In-situ 320m	96	29-Aug-22 A	07-Jan-23		: :					!				++										SUS - WB -	OHVD In
SUS - WB - Fire Board - Tunnel crown	28	09-Jan-23	13-Feb-23		11							1		!!		-11-									
Eastbound	108	09-Jan-23	23-May-23											‡ <u>†</u>											
SUS - Formworks transfer to EB	12	09-Jan-23	21-Jan-23									-		‡ <u></u> ‡-								L		· ‡	SUS-I
SUS - EB - OHVD In-situ	96	26-Jan-23	23-May-23	<del> </del>										† <del> </del>								·}			
C&C TUNNEL / LAUNCHING SHAFT [C&C / LS]	338	05-Feb-22 A	10-Feb-23	<del>-</del>	ii									† <u>†</u> -								ļ			
Civil Works for TBM Assembly			23-Feb-22 A											‡ <u></u>								ļ			
Cell 1 & 2			23-Feb-22 A																						
Tympanum		05-Feb-22 A																				ļ			
Westbound Additional Mass Fill		05-Feb-22 A										-								- +					
Eastbound Additional Mass Fill		14-Feb-22 A												<u> </u>								ļ			
Tunnel Permanent Works			10-Feb-23		ļ									ii								ļ			
Cell 1/2 Westbound			08-Feb-23											<u> </u>								ļ	} <u>-</u>		
Cell 1/2 WB - Wall Below Road Level CPS			25-Nov-22											<u> </u>					Ce	ell 1/2	WB - Wall Below	.i Road Le	vel CPS		
Cell 1/2 WB - Road Slab CPS			09-Dec-22		į <u>į</u>									<del>  </del>						1-:-	Cell 1/2 WB		<del> </del>	3	
Road Diversion to WB CPS	0		09-Dec-22																		◆ Road Divers			<del>.</del>	
Cell 1/2 WB - Wall Below Road Level NCPS	•		23-Dec-22		<del></del>									<u> </u>									Li	/all Below F	oad Lave
Cell 1/2 WB - Wall below Road Level NCPS  Cell 1/2 WB - Road Slab CPS					ļ									<u> </u>								Cell II			WB - Roa
			10-Jan-23		ļļ					}	-}}			<u> </u>								·			VD - Kpa
Cell 1/2 WB - Wall Road Level			27-Jan-23	ļ <del>.</del>	ļ									įį.								. <del> </del>			<del>-</del>
Cell 1/2 WB - Wall Above Road Level			08-Feb-23		ļļ							.		ļļ.								ļ			
Cell 1/2 Eastbound			10-Feb-23		ļļ							.		ļļ.				<u>-ii</u>	<u> </u>			ļ			
Cell 1/2 EB - Wall Below Road Level CPS			25-Nov-22	ļ <u>.</u>	ļļ							.		ļļ.						ell 1/2	EB - Wall Below F		L L		
Cell 1/2 EB - Road Slab CPS	12		09-Dec-22		ļļ		-					.		į į .							Cell 1/2 EB				
Road Diversion to EB CPS	0		09-Dec-22		ļļ							1		įlį.							◆ Road Divers	. <u></u>	L <u>-</u>		
Cell 1/2 EB - Wall Below Road Level NCPS	12	10-Dec-22	23-Dec-22		<u> </u>							1										Cell 1	/2 EB - W	all Below R	oad Leve
Cell 1/2 EB - Road Slab NCPS	12	24-Dec-22	10-Jan-23		<u> </u>				i			.][		Ili.				<u> </u>						Cell 1/2 I	B - Roac
Cell 1/2 EB - Wall Road Level	12	11-Jan-23	27-Jan-23																						C
Cell 1/2 EB - Wall Above Road Level	12	28-Jan-23	10-Feb-23							-															-
Cut & Cover	24	05-Nov-22	02-Dec-22									1													
C&C - Wall Stage 1 first 5m	9	05-Nov-22	15-Nov-22																C&C - Wall S	Stage	1 first 5m				
C&C - Wall Stage 2 up to OHVD level	9	16-Nov-22	25-Nov-22									1									/all Stage 2 up to				
C&C - Wall Stage 3 up to Top Slab soffit	6	26-Nov-22	02-Dec-22									1		[						C	&C - Wall Stage 3	up to	op Slab s	soffit	
SUB-SEA TBM TUNNEL - WESTBOUND	373	27-Sep-21 A	13-Feb-23		1							1				1									
Precast Fabrication	330	29-Nov-21 A	13-Feb-23	<del> </del>										† <u> </u> †						-					<del> </del>
TBM Precast Segments	306	29-Nov-21 A	12-Jan-23											† <b> </b> †										· <del> </del>	
Precast TBM Segment - 70%	36	29-Nov-21 A	26-Feb-22 A	† <del> </del>										†  †									<del> </del>	· <del> </del>	
Precast TBM Segment - 80%	36	28-Feb-22 A	17-Oct-22	<del></del>	<del>  </del>		<u> </u>	·	<del> </del>   <del> </del>					<del></del>		Prec	ast TBM Se	egment :	80%			}	} <u></u>		
Precast TBM Segment - 90%			28-Nov-22	t <del>-</del>	ii									<u> </u>						Preca	ast TBM Segment	90%	} <u>-</u>		
Precast TBM Segment - 100%			12-Jan-23											<del></del>							<del>-</del>		<u>-</u>	Precas	t TBM S∈
Service Gallery			13-Feb-23																				} <u></u>		
Precast Service Gallery - 3%		28-Dec-21 A			ļ									<u> </u>								}	} <u></u>		
Precast Service Gallery - 6%		02-Mar-22 A		<del>  </del>										<u> </u>								}	} <u></u>		
Precast Service Gallery - 10%		03-Apr-22 A		Gallery -	10%									<del></del>								ļ	} <u></u>		
Precast Service Gallery - 10%  Precast Service Gallery - 20%		16-May-22 A						Precas	st Service Gal	lerv: - 20%				<del></del>								ļ	} <u>-</u>		
Treedst Service Gallery - 20 /0	24	10-IVId y-ZZ A	10-JUI-ZZ A	:	1 1	ļ	: :	i i iecas	S. Significa Dal	20 /	1			<u> </u>	!			1 1			1 1			1	
Page 21 of 29 ♦ Milestone																			Date		Revision		ecked	Appr	oved
Data Date: 30-Sep-22		FD/2	018/C	)4 T	runk	R٥	ad T	2 and	Infra	stru	Cture	۷۱ خ	Vorks						18-Dec-19			WYu			
Critical A divity												<b>۷</b> ۱	VOING		De	JIIVO	IIEe		22-Feb-20			SPa/L		WYu	
◆ Actual Milestone  Actual Work			f	or L	evel	opi	ment	s at S	outh A	Apro	on				TRAN	OUYG VAUX PI	JBLICS .		09-Apr-20			SPa/L		WYu	
						-													17-Jul-20 09-Oct-20			SPa/L SPa/L		WYu WYu	
			Three	e Mo	nths	Ro	ollina	Progr	ramm	e (S	Sep-2	22)	)						09-Oct-20 02-Jul-21			SPa/L SPa/L		WYu	
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Activity Name	Dur	Start	Finish										2022											2023	
				9 I 05	June 12 1	)   26	03   10	July 17 24	31 07	August 14	21   28	8 04	September	25 0		tober 16 2	3   30	November 06 13 2	20   27	Dec 1 04 1 11	ember 18	25	01 08	anuary 1 15 T	22   29
Precast Service Gallery - 30%	24	19-Jul-22 A	14-Sep-22 A										Precast	Service G	Sallery - 30	%									
Precast Service Gallery - 40%	24	15-Sep-22 A	17-Oct-22						-i							Precas	st Service Ga	llery - 40%							
Precast Service Gallery - 50%	24	18-Oct-22	14-Nov-22											:					ıst S¦ervi¢e	Gallery - 50	%				
Precast Service Gallery - 60%	24	15-Nov-22	12-Dec-22											İ		11					Précast S	ervice G	allery - 60%	6	
Precast Service Gallery - 70%	24	13-Dec-22	12-Jan-23							† <u>†</u>				<u> </u>										Precast	Service
Precast Service Gallery - 80%	24	13-Jan-23	13-Feb-23	<del>-</del>										; <del> </del> ;								-	<del>-</del>		<del>-</del>
OHVD Slab	281	01-Feb-22 A	09-Feb-23	<del>-</del>					- -					<del></del>											
Concrete Mix - Plant Trial		01-Feb-22 A		ant:Trial										<del></del>											
Precast OHVD Slab - Mould Fabrication & Setup		01-Feb-22 A		‡										recast OF	: <del>I</del> VD¦Slab -	Mould Fal	rication & Se	etup							
Precast OHVD Slab - Inspection		22-Sep-22 A	13-Oct-22											<u> </u>		Precast O	 ∃VD \$lab - Ir	spection					<u>-</u>		
Precast OHVD Slab - Mass Production Start	0	14-Oct-22	10 00.22													jj		Mass Production	on Start						
Precast OHVD Slab - 3%	24	14-Oct-22	10-Nov-22	<del> </del>						}}				<del>-</del> <del>-</del>				■ Precast O		 ) - 3%			·		
Precast OHVD Slab - 6%	24	11-Nov-22	08-Dec-22											<del></del>							ast OHVI	) Slab -	6%		
Precast OHVD Slab - 10%	24	09-Dec-22	09-Jan-23											<del></del>										recast OF	 IVD Slal
Precast OHVD Slab - 20%	24	10-Jan-23	09-Feb-23											<u> </u>		ļ <u></u>									
Site Establishment		27-Sep-21 A												<del> </del> <del> </del>											
Mortar Plant		27-Sep-21 A								<del> </del>				<u> </u>									<u>-</u>		
Mortar Plant - Commissioning		27-Sep-21 A								<del>  </del>				<u> </u>									<u>-</u>		
TBMAssembly		29-Nov-21 A								-}}				<del> </del> <del> </del>											
Air / Water / Hydraulic Electrical Connections		29-Nov-21 A								-}}				<del> </del> <del> </del>											
Testing & Commissioning		09-Dec-21 A												<del></del>		<u> </u>									
WB TBM Break-in		13-Jan-22 A	12-Jail-22 A											<del></del>											
			0/ Fab 22											<del> </del> <del> </del>		ļ <u></u>									
TBM Tunnelling		13-Jan-22 A	06-Feb-23											<del> </del> <del> </del>											
WB TBM Tunnelling CH 6642-6659 17m			19-Jan-22 A							-}				: <del>!</del> <del>!</del>		ļ <u></u>									
WB TBM Tunnelling Stoppage due to Active Mortar injection			27-Jan-22 A						. <u></u>	- -				: :		ļ				ļļ					
WB TBM Tunnelling CH 6659-6660 18m			28-Jan-22 A	ļ <del>.</del>						<u>.</u>				<del>.</del> <del> </del>											
WB TBM Tunnelling Stoppage due to Additional Mass Fill			12-Feb-22 A							<u>.</u>				<u>.</u> <del>.</del>											
WB TBM Tunnelling Stoppage due to Covid-19 outbreak		13-Feb-22 A								<u>.</u>				<u> </u>		ļļ									
WB TBM Tunnelling CH 6660-6665 B/I Plug 23m		01-Mar-22 A		ļļ	.			. ļ ļ		ļļ				: 		ļļ									
WB TBM Tunnelling CH 6665-6710 ALL/CDG 68m		02-Mar-22 A		<del>-</del>					; -}				· - <del> </del> <del> </del>	: ;;		ļ							<u>-</u>		<del>-</del>
WB TBM Tunnelling CH6710-6725 ALL/CDG 83m		11-Mar-22 A							-					; ;;		ļ									
WB TBM Tunnelling CH6725-6732 ALL/CDG 90m		14-Mar-22 A	'											: :									 		
WB Stoppage due to Disc Cutter Issue	7	05-Apr-22 A		l i								<u> </u>		<u> </u>		<u> </u>									
WB TBM Tunnelling CH6732-6752 ALL/CDG 110m	7	07-May-22 A	23-May-22 A	BM Tunn	elling CH 673	2-6752	ALL/CDG 110	m						:		]									
WB TBM Stoppage due to Maind Drive issue	7	24-May-22 A	17-Jul-22 A						Stoppage due					: :		<u> </u>									
WB TBM Tunnelling CH6752-6756 ALL/CDG 114m	1	18-Jul-22 A	22-Jul-22 A					WB 1	BM Tunnellir	g CH675	2-6756 AL	L/CDG	114m	:		<u> </u>									
WB TBM Tunnelling CH6756-6777 CDG/Boulder 135m	4	23-Jul-22 A	31-Jul-22 A						WB TBM	Tunnellin	g CH 6756	-6777 C	DG/Boulder 13	5m											
WB TBM Tunnelling CH6777-6789 CDG/Boulder 147m	3	01-Aug-22 A	06-Aug-22 A						WB	TBM Tur	nnelling Cl	H6777-6	789 CDG/Bould	der 147m											
WB TBM Tunnelling CH6789-6797 ALL/CDG 155m	38	07-Aug-22 A	12-Aug-22 A						<b>—</b>	WB TB	M Tunnel	ing CH6	5789-6797 ALL/	CDG 155m	n								 		
WB TBM Stoppage for ISIG 1 Installation	9	13-Aug-22 A	26-Aug-22 A							<del></del>	W	TBM S	toppage for ISIC	3 1 Installa	ition								1		
WB TBM Tunnelling CH6797-7098 ALL/CDG 456m	37	27-Aug-22 A	28-Sep-22 A	[ ]										WB	TBM Tunn	elling CH6	797-7098 AL	L/CDG 456m					 	- <del> </del>	
WB TBM Tunnelling CH 7098-7198 ALL/CDG 556m	11	29-Sep-22 A	10-Oct-22						1 !			[		ļ	WI	B TBM Tur	nelling CH 70	98-7198 ALL/	CDG 556n	n¦ ¦			     		
WB TBM Tunnelling CH7198-7218 ALL/CDG 576m	2	11-Oct-22	12-Oct-22		1									<u> </u>	- ·	WB TBM T	unnelling CH	7198-7218 AL	L/CDG 57	6m			 		
WB TBM Tunnelling CH7218-7240 CDG/Boulder 598m	3	13-Oct-22	15-Oct-22	:										:		WB TBN	1 Tunhelling (	CH 7218-7240	C DĢ/Boul	lder 598m					
WB TBM Tunnelling CH7240-7284 ALL/CDG 642m	4	16-Oct-22	19-Oct-22											<del>!</del> <del>  !</del>		<b>⊯</b> ₩B	TBM Tunnelli	ng CH7240-72	284 ÄLL/C	DG 642m					
WB TBM Tunnelling CH7284-7379 ALL/CDG 737m	9	20-Oct-22	28-Oct-22	   						††		<u> </u>		; ;		:- <del>-</del>	WB TBM	1 Tunnelling Cl	H7284-73	79 ALL/CDG	737m		<del> </del>   		
WB TBM Tunnelling CH7379-7391 CDG/Boulder 749m	2	29-Oct-22	30-Oct-22							††				; ;		ii	■ WB TI	BM Tunnelling	CH 7379-7	7391 CDG/B	oulder 74	9m			
WB TBM Tunnelling CH7391-7434 Boulder 792m	7	31-Oct-22	06-Nov-22											<del></del>				WB TBM Tun							
				<u> </u>	<u> </u>	<u> </u>	1	<u> </u>	<u> </u>	<u> </u>			<u>; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; </u>	<u> </u>				<del></del>	Date	Revis		Chec	ked	Appro	wed
Page 22 of 29 ♦ Milestone			20404			_	- J TO		<b>£</b>	L	1	\ A /							ec-19	00V1		MYu	JACU	Appio	,v.cu
Data Date: 30-Sep-22			2U18/C	)4 I	runk	KC	ad 12	and I	nīras	truc	ture	· VV	orks					22-Fe		01V0		SPa/LL	o V	NYu	
◆ Actual Milestone			f	or F	)evel	on	ments	at So	uth A	pro	n				BO	UYGL	ES )	09-A		01V1		SPa/LL		VYu	
Actual Work				J. L	<del>-</del>	٦٢'		O	J. C. 1 /	٠,٠٠					IKAVA	AUX PU	BLICS /	17-Ju		01V2		SPa/LL		ΛYu	
			Three	۱۱،	nthe	R/	ıllina <sup>l</sup>	Progra	mme	19	2n_Ω	201						09-0		01V3		SPa/LL		<b>VYu</b>	
			11116	- 1410	) III IS	170	ا الا النالغ 	i rogra		, (3	-μ-Z							02-Jı	ul-21	02V0		SPa/LL	o V	<b>VY</b> u	
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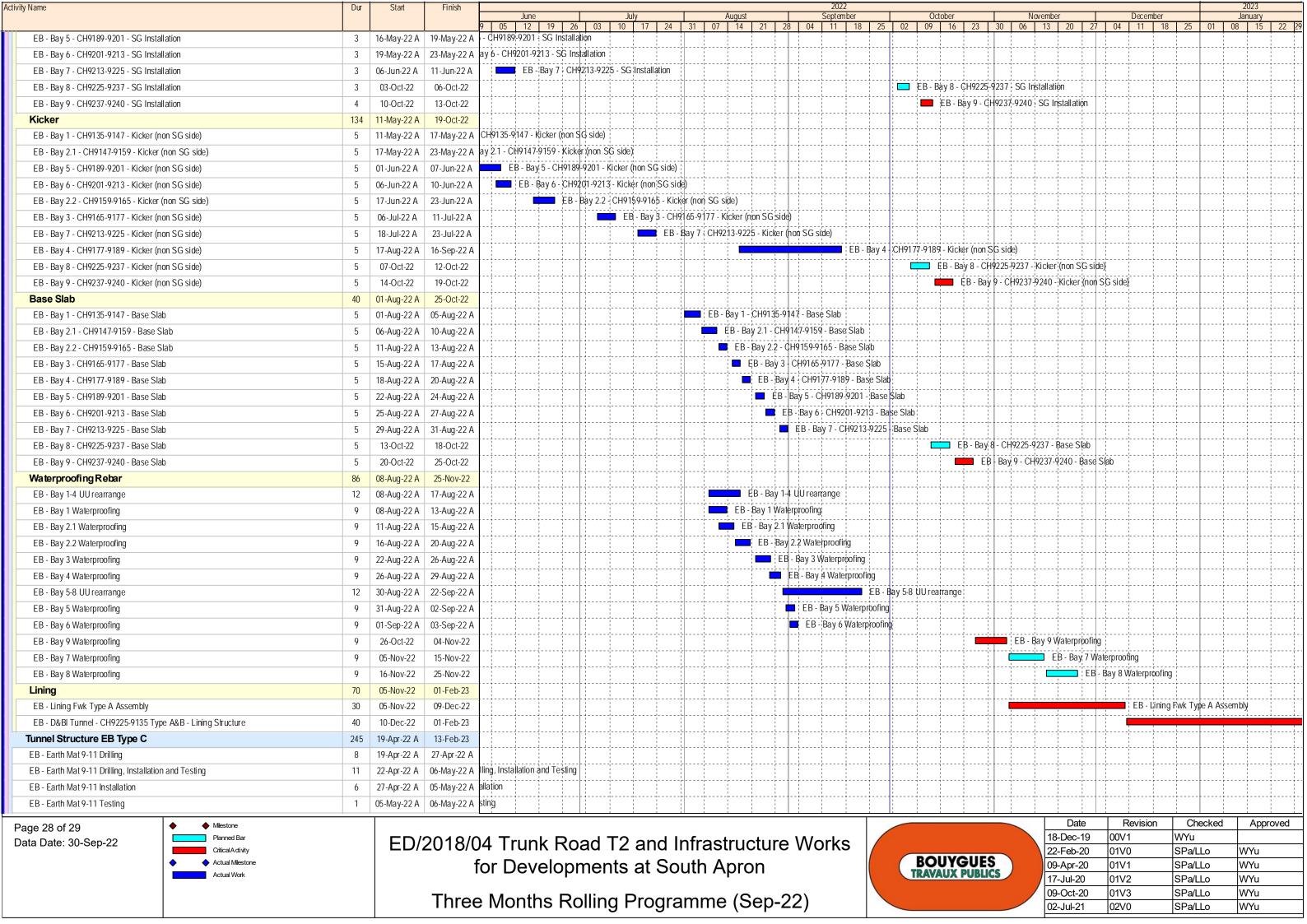
Activity Name	Dur	Start	Finish										2022			_							2023	
				9   05	June 12 19	26		lly   17   24	31 07	August 14	21 28	3 04	September 11 18	25 02		tober 16 23	30 0	November 6 13 2	0 27	Decem   04   11		5 01	January 08   15	22 29
WB TBM Tunnelling CH7434-7466 CDG/Boulder 824m	4	07-Nov-22	10-Nov-22																Funnelling	CH7434-7466	CDG/Bou	lder 824m		
WB TBM Tunnelling CH7466-7623 ALL/CDG 981m	15	11-Nov-22	25-Nov-22	† <del>†</del>		j				j						jj			WB T	ГВМ Tunnelling	CH7466-	7623 ALL/C	DG 981m	İİ-
WB TBM Tunnelling CH7623-7650 CDG/Boulder 1008m	4	26-Nov-22	29-Nov-22																V	VB TBM Tunne	lling CH76	523-7650 C	DG/Boulder	1008m
WB TBM Tunnelling CH7650-7722 ALL/CDG 1080m	7	30-Nov-22	06-Dec-22				1 1																722 ALL/C	
WB TBM Tunnelling CH7722-7792 CDG/Boulder 1150m	9	07-Dec-22	15-Dec-22					<u></u>		}}											wb tam	Tunn elling (	CH 7722-779	2 CDG/Bo
WB TBM Tunnelling CH7792-8445 ALL/CDG 1803m	53	16-Dec-22	06-Feb-23					<u></u>	}	} <u>}</u>				<del> </del>						<u> </u>				<del></del>
Gallery B Installation	321		30-Jan-23				- <del> </del> <del> </del>									; 				-			<del>-</del>	÷
WB TBM Tunnel - Gallery B CH7103-7203 100m CP12	10	09-Dec-22	20-Dec-22											+						-	; W;B 1	BM Tunnel	- Gallery B (	; ::::::::::::::::::::::::::::::::::::
WB TBM Tunnel - Gallery B CH7203-7303 100m CP13	7	21-Dec-22	30-Dec-22													<del></del>				-   -   		WB TE	BM Tunnel - (	Gallery B (
WB TBM Tunnel - Gallery B CH7303-7403 100m CP14	7	31-Dec-22	09-Jan-23																			1 1	■ WB TBM	11
WB TBM Tunnel - Gallery B CH7403-7503 100m CP15	7	10-Jan-23	17-Jan-23				-									<del> </del>							<del>-</del>	
WB TBM Tunnel - Gallery B CH7503-7603 100m CP16	8	18-Jan-23	30-Jan-23							} <u>}</u>										- <del> </del>	<del> </del>		,	÷
Forecast	248	27-Dec-21 A	08-Oct-22										-}			ļ <u>-</u>								
Spreader Beam, Hook, Hook Block etc(from Italy by sea)		27-Dec-21 A				·				} <u>-</u>						ļ <u>-</u>								<del></del>
Wheels (from Italy by air)		30-Dec-21 A														ļ <u> </u>				-				·
Ramp delivery (from China by road)		06-Jan-22 A														ļ								ļ
Loader (from China by road)			26-Jan-22 A																					<u> </u>
<u> </u>		27-Jan-22 A						¦	}	} <u></u>						¦				<u> </u>				
Ramp pre-assembly at surface		17-Feb-22 A								ļ <u></u>														<del></del>
Loader pre-assembly at surface										 	or ICIC in	to Chaft				<del> </del> <del> </del>								<u> </u>
Lower ISIG into Shaft	3	14-Aug-22 A								L L	er ISIG in			- 01										ļļ
Gallery G-W1 to W4 by crawler crane @ 1 no/d	2	16-Aug-22 A						<del> </del>	 	ļ <u>-</u>		<u>-</u>	by crawler cran		a ;	<del> </del> <del> </del>								<u> </u>
Thrust Frame Removal		18-Aug-22 A						<u> </u>			Thrust Fr		moval embly of Spread			¦				.¦				<u> </u>
Install abd Assembly of Spreader Beam	6	18-Aug-22 A														ļ								ļ
Gallery EMVD installation by crawler crane		22-Aug-22 A											nstallation by cr		ne ¦									
ISIG Commissioning		24-Aug-22 A										ISIG Co	mmissioning			<u> </u>								ii
Gallery G-W5 to G-W11 installation by ISIG		31-Aug-22 A	12-Sep-22 A							ļ			Gallery G	li		ation by ISI								<u> </u>
WB ISIG Gallery B Installation start		31-Aug-22 A				.		ļ		ļ ļ	•		G Gallery B Inst			ļ								<u> </u>
Gallery B installation FTR-11 to FTR-7	3	13-Sep-22 A	13-Sep-22 A	<b>.</b>			<u> </u>						■ Gallery B	installation	n FTR-11	to FTR+7	[ ] [							iil
Steel Bridge Installation	1	14-Sep-22 A	14-Sep-22 A	<u> </u>		<u>.</u>							■ Steel Bri	idge Install	llation	<u> </u>								ii.l
WB Sub-sea Galery B Installation started	0	15-Sep-22 A											♦ WB Sub	o-sea Gale	ery 🖁 Insta	lation starte	ed							
WB Gallery B CH6642-6742 100m @4nos/day	11	15-Sep-22 A	29-Sep-22 A											<b>W</b> B	Gallery B	CH6642-6	742 100m @4	nos/day					 	
WB Gallery B CH6742-6855 80m @6nos/day	6	30-Sep-22 A	08-Oct-22					;;; 							<b>W</b> B	Gallery B C	H6742-6855	30m @6nos/d	lay					
SUB-SEA TBM TUNNEL - EASTBOUND	342	14-Dec-21 A	03-Feb-23					;;												-;;				
TBMAssembly	140	14-Dec-21 A	10-Mar-22 A	+					-  -  -  -  -	- 														
Lifting & Welding of Tailskin to Shield	62	14-Dec-21 A	06-Jan-22 A				- <del>   </del>													-   				
Air / Water / Hydraulic Electrical Connections	22	20-Dec-21 A	06-Jan-22 A										- L							-l				
Testing & Commissioning	26	26-Dec-21 A	10-Mar-22 A													{ 				- <del>  </del>				† <u>†</u>
Thrust Frame Installation	22	30-Dec-21 A	06-Jan-22 A	<del>-</del>		 		{ <u> </u>		} <u>}</u>		<del> -</del>					{-			-;				†
Power On	3	07-Jan-22 A	07-Jan-22 A	<del>-</del>								<del> -</del>			<del>-</del>	; <u>;</u>				-;	<del> </del>			<del></del>
S1282 EB TBM Break-in	0		10-Mar-22 A																					<u> </u>
TBM Tunnelling	290	11-Mar-22 A	02-Feb-23													ļ								<u> </u>
EB TBM Tunnelling CH6640-6665 B/I Plug 25m			25-Mar-22 A													ļ					<u>-</u>			
EB TBM Tunnelling CH6665-6710 ALL/CDG 70m			02-Apr-22 A							} <u>}</u>						<u> </u>								<u> </u>
EB TBM Tunnelling CH6710-6756 ALL/CDG 116m	7	03-Apr-22 A	•	56 ALL/CD	G 116m	 				} <u>}</u>		<del> -</del>				{ 				÷	<del> </del>			<u> </u>
EB TBM Tunnelling CH6756-6775 CDG/Boulder 135m	4	28-Apr-22 A		· ·		135m				<del> </del>		<del> </del>				;;					<del>-</del>			<del></del>
WB TBM Stoppage for ISIG 1 Installation			12-May-22 A	1 i						<u> </u>														<u> </u>
EB TBM Tunnelling CH6775-6789 CDG/Boulder 149m		13-May-22 A		[:			G/Boulder 149	m		} <u>}</u>						<u> </u>								ļ
EB TBM Tunnelling CH6789-7098 ALL/CDG 458m		22-May-22 A				حتاجات	/I:Tunne(ling CI	أنانا والمال والمالا	L/CDG 452n	ļ <u>ļ</u>						ļ								ļ
	JU	22 May-22 H	ZI JUIFZZ H	-		וטו ק_		1.5,5,7070 AC	- 309 +301	<u> </u>	1	-	1 1 1	!	<u> </u>	<u> </u>	<u> </u>	<u> </u>	Doto	Desci-:	<u>;</u>	Chastrad	   A	roved.
Page 23 of 29				—		_			_				. 1					18-De	Date	Revision 00V1	n W	Checked	Аррі	oved
Data Date: 30-Sep-22		ED/2	2018/0	)4 Tr	unk l	₹0	ad T2	and li	ntrast	ruc	ture	Wc	orks 📙					22-Fe		01V0		a/LLo	WYu	
◆ Actual Milestone			f	or D	وبرمار	n	nents	at So	uth Δ	nro	n				BO	UYGU	ES	09-Ap		01V1		a/LLo	WYu	
Actual Work			ı	טוט	CVGIC	וקי		at OU	aui A	ριυ					TRAVA	AUX PUE	BLICS	17-Ju		01V2		a/LLo	WYu	
			Thrac	. \ / _	ntha	Da	llina F	)roaro	mma	(0.	~ ^	2)						09-O		01V3		a/LLo	WYu	
			THIE	; IVIO	HILIS	ΚC	lling F	riogra	mme	(5)	<del>2</del> p-2	(2)			22			02-Ju	ıl-21	02V0	SP	a/LLo	WYu	
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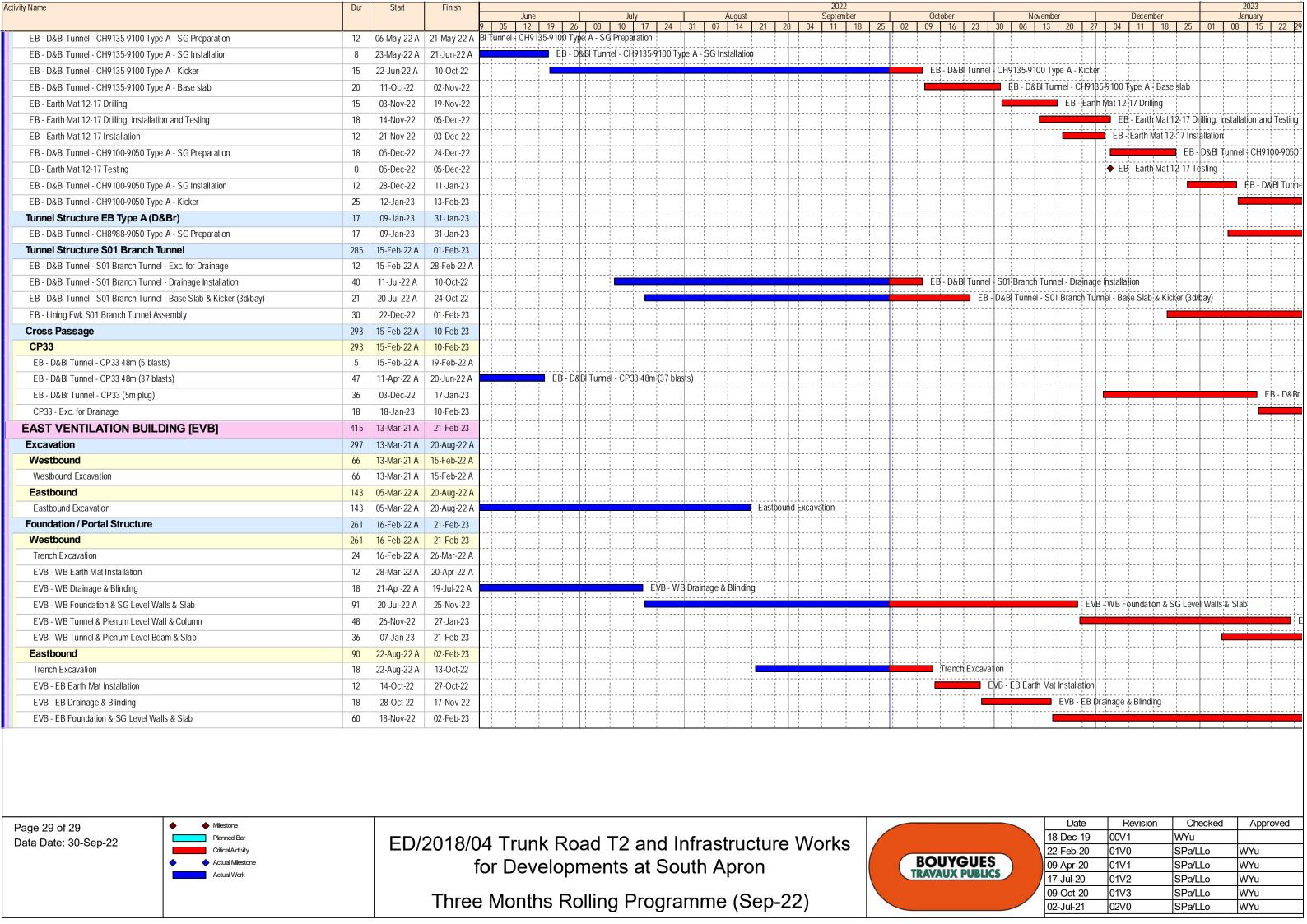


1	vity Name	Dur	Start	Finish											2022											20.	
Description   Control					9   05		9   26	03	July 10 17	24	31 07		21   28	3 0		25	02 0		23	30 06		27		mber 18	25		uary 15   22   2
Substantive Cooks   Assamption   Assamptio	EB Gallery B CH6642-6742 100m @4nos/day	11	20-Jun-22 A	07-Jul-22 A																							
CF TRANSCORPER   March 1997	EB Gallery B CH6742-6855 80m @6nos/day	6	08-Jul-22 A	20-Jul-22 A		·			j	EB Galle	ry B CH674	2-6855 8	m @6no	s/day			Ţ   			† <u> </u>							
Character   16   16   16   17   17   17   18   18   18   18   18	SUB-SEA TUNNEL CROSS PASSAGE (CP7-CP27a/b)	350	10-May-21 A	02-Mar-23										 ! !			+	:									
Fig. 12		144	10-May-21 A	19-Mar-22 A													<del>  </del>									<u>-</u>	
All			,														<del>  </del>				1					<u>-</u>	
OPP containing Fasterdame	FAT	24	11-Feb-22 A	28-Feb-22 A	<del> </del>				·			-}				†	<del></del>	<del> </del>			<del></del>					<del> </del> <del> </del>	
OPP containing Fasterdame	Delivery of TBM components to the Site	24	01-Mar-22 A	19-Mar-22 A	<del> </del>	. ; ;		ii-								į	;;			† <del>-</del>	<del></del>						
Characteristic Systems		279	17-Dec-21 A	03-Feb-23		1		-  -									<del></del>			·	1						
Primate Page Segret 19%	-	18	17-Dec-21 A	15-Jan-22 A		1											<u> </u>			T							
Primate Page Segret 19%		18	17-Jan-22 A	29-Jan-22 A																							
CP-scaling System 37X   See   19   See		24	31-Jan-22 A	19-Feb-22 A													<del></del>									<u>-</u>	
OP-result in grouper 50%   2   24,52   25,52   24   25,52		24	21-Feb-22 A	30-Mar-22 A	<del> </del>	· <del></del>										† <del> </del>	<del>-</del>	<del> </del>			<del></del>						
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DRILL & BREAK TUNNEL [D&BR]		
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♦ Actual Milestone for Developments at South Apron    Actual Work   GP-Apr-20   01V1   SPa/LLo	WYu	
17-Jul-20 01V2 SPa/LLo	WYu WYu	
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EB - Bay 1-4 SG Preparation		09-Apr-22 A 0		ration										ļļ						-}			
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EB - Bay 6 - CH9201-9213 - Kicker (SG side)		20-Jun-22 A 2				, 	B - Bay 6 - CH						<del></del>	;;									
EB - Bay 4 - CH9177-9189 - Kicker (SG side)		24-Jun-22 A 2				4	EB - Bay 4 - Cl		<del> </del>	<del> </del>													
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EB - Bay 5 - CH9189-9201 - Kicker (SG side)			05-Jul-22 A	ļ		<b>-</b>			Uii				<u> </u>	¦									
EB - Bay 2.2 - CH9159-9165 - Kicker (SG side)			16-Jul-22 A		 				2 - CH9159-91				; ;;	¦ ¦							·   		
EB - Bay 3 - CH9165-9177 - Kicker (SG side)			18-Jul-22 A			1			3 - CH9165-91			·	ļ	; ;									
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EB - Bay 7 - CH9213-9225 - Kicker (SG side)	5 1	15-Aug-22 A 1	19-Aug-22 A							EB-		CH9213-9225 - Kick		side)									
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EB - Bay 9 - CH9237-9240 - Kicker (SG side)	5	03-Oct-22	08-Oct-22	1-:	<del> </del>						7 - 1	<del>-</del>	Ţ <b> </b>	EB-	Bay 9 : CH	19237-9240 -	Kicker (SG side	*)	-,;;	-[	·	<del>-</del> <del>-</del>	
SG Installation	144 2	21-Apr-22 A	13-Oct-22	<b> </b>		j					-:												
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Page 27 of 29 ♦ Milestone																		ate	Revision		ecked	Appro	oved
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APPENDIX O WASTE GENERATED IN THE REPORTING MONTH



Name of Department: CEDD

Monthly Summary Waste Flow Table for 2022 (KT)

Trunk Road T2 and Infrastructure Works for Developments at the Former South Apron Contract No. ED/2018/04

	Actu	al Quantities	of Inert C&D	Materials G	enerated Mo	nthly	Actual	Quantities of	C&D Waste	s Generated I	<b>Monthly</b>
Month	a.Total Quantity Generated (a=c+d+e)	b. Hard Rock and Large Broken Concrete	c. Reused in the Contract	d. Reused in Other Projects	e. Disposed as Public Fill	f. Imported Fill	g. Metals	h. Paper / Cardboard Packaging	i. Plastics	j. Chemical Waste	k. Others, e.g. general refuse
	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m <sup>3</sup> )
January	10.929	2.331	0.000	10.914	0.015	0.000	94.890	0.460	0.000	11.000	0.068
February	7.698	0.114	0.000	7.601	0.097	0.000	81.020	0.280	0.000	0.000	0.087
March	19.029	1.628	0.000	19.019	0.010	0.000	164.830	0.000	0.000	0.000	0.086
April	11.801	0.247	0.000	11.774	0.027	0.000	316.700	0.700	0.000	0.000	0.120
May	20.116	0.240	0.000	20.107	0.009	0.000	203.900	0.000	0.000	8.000	0.070
June	62.161	0.310	0.000	25.999	36.162	0.000	242.800	0.260	0.000	4.800	0.069
Sub-total	131.734	4.871	0.000	95.413	36.320	0.000	1104.140	1.700	0.000	23.800	0.500
July	23.738	0.000	0.000	0.883	22.855	0.000	0.000	0.700	0.000	7.000	0.060
August	30.429	0.225	0.000	4.037	26.392	0.000	21.660	0.000	0.000	6.000	0.070
September	80.500	0.035	0.000	52.715	27.784	0.000	64.260	0.760	0.000	9.800	0.071
October	77.404	0.000	0.000	30.398	47.006	0.000	0.000	0.000	0.000	0.000	0.080
November	_										
December											
Total	343.805	5.130	0.000	183.447	160.358	0.000	1190.060	3.160	0.000	46.600	0.781

Monthly Summary Waste Flow Table

## Notes:

- (1) The performance targets are given in ER Appendix 8I Clause 14 and the EM&A Manual(s).
- (2)The waste flow table shall also include C&D materials to be imported for use at the Site.
- (3)Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.
- (4)The Contractor shall also submit the latest forecast of the total amount of C&D materials expected to be generated from the Works, together with a breakdown of the nature where the total amount of C&D materials expected to be generated from the Works is equal to or exceeding 50,000 m3. (ER Part 8 Clause 8.8.5 (d) (ii) refers).