





Contract No. 21/WSD/21

Relocation of Diamond Hill Fresh Water and Salt Water Service Reservoirs to Caverns

Monthly Environmental and Audit Report September 2024

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EXECUTIVE SUMMARY

This is the 18th Monthly Environment Monitoring and Audit (EM&A) Report for Relocation of Diamon Hill Fresh Water and Salt Water Service Reservoirs to Caverns (the Project). This report was prepared by Acuity Sustainability Consulting Limited under Contract No. 21/WSD/21 (hereafter called "the Contract"). This report documents the findings of EM&A works during the reporting period from 1 September to 30 September 2024.

Key Construction Works in the Reporting Period

A summary of construction activities undertaken during the reporting period is presented below:

Portion 3:

- PAB Pipe Pile Installation (Ø355)
- PAB Excavation & Tie Back Installation
- C/C Tunnel construction
- Steel work for raking strut
- Pump house E&M provision

Portion 5:

- Pipe piling works for jacking pit ELS
- Open trench main laying works
- ELS for Receiving Pit
- Reinstatement works
- Backfilling works
- Trial Pit Works

Environmental Monitoring and Audit Programme

The monthly EM&A programme was undertaken by the Environmental Team in accordance with the EM&A Manual. A summary of the monitoring and audit activities during the reporting period is presented below:

Table I Summary of EM&A Activities in the Reporting Period

EM&A Activities	Date		
1-hour TSP Monitoring	3, 9, 14, 20 and 26 September 2024		





Construction Noise Monitoring	3, 9, 20 and 26 September 2024		
Weekly Environmental Site Inspection	13, 20 and 27 September 2024*		

^{*}Remark: The weekly Environmental Site Inspection was originally scheduled on 6 September 2024 but cancelled due to adverse weather.

Breaches of Action and Limit Levels

A summary of the environmental monitoring exceedance of the reporting period is tabulated in **Table II**.

Table II Summary of Exceedance in the Reporting Period

Environmental Monitoring	Parameter	No. of non- project related exceedances AL LL		Total no. of non-project related exceedances	No. of exceedances related to the project AL LL		Total no. of exceedances related to the project
Air Quality	1-hour TSP	0	0	0	0	0	0
Noise	$L_{eq(30 ext{-min})}$	0	0	0	0	0	0

Note:

Air Quality

No exceedance of Action Level or Limit Level was recorded for 1-hour TSP monitoring during the reporting period.

Construction Noise

No Action Level exceedance was recorded for construction noise monitoring during the reporting period.

No Limit Level exceedance was recorded for construction noise monitoring during the reporting period.

Complaint Log

No environmental complaint was received in the reporting period.

Notification of Summons and Successful Prosecutions

No notification of summons or successful prosecutions was received in the reporting period.

Reporting Change

There was no reporting change in the reporting period.

Future Key Construction Activities

^{1.} AL refers to Action Level and LL refers to Limit Level.





Key construction activities to be considered in the next two months included:

Portion 3:

- PAB Pipe Pile Installation (Ø355)
- PAB Excavation & Tie Back Installation
- C/C Tunnel construction
- Steel work for raking strut
- Pump house E&M provision
- C/C ELS Backfill to +77mPD
- Jumbo Lifting
- Tunnel Pre-support

Portion 5:

- Open trench main laying works
- ELS for Receiving Pit
- Reinstatement works
- Backfilling works
- Trial Pit Works

Potential environmental impacts arising from the above construction activities are mainly associated with construction dust, construction noise, water pollution control, waste management and landscape and visual.





1. INTRODUCTION

1.1 Project Background

- 1.1.1 The relocated Diamond Hill Fresh Water and Salt Water Service Reservoirs (DHSRs) will be constructed in a series of caverns linked by access tunnels and adits. The relocated Diamond Hill Fresh Water Service Reservoirs (DHFWSR) and Diamond Hill Salt Water Service Reservoirs (DHSWSR) will be compartmented while the existing Diamond Hill Pumping Station (DHPS) will be split into two (2) pump houses for fresh and salt water supply when relocated.
- 1.1.2 Ancillary facilities to be constructed near the tunnel portal may include transformer room, switch room, emergency generator room, control room, ventilation building, and pumping station control room, which will be constructed in an above-ground building outside the tunnel.
- 1.1.3 The scope of the Project comprises the following:
 - a) Construction of the relocated DHSRs and associated pumping stations and water main laying works;
 - b) Construction of tunnels, adits, ventilation system and caverns for accommodating the relocated DHSRs and the associated facilities;
 - c) Terminating the operation of the existing DHSRs and the associated facilities; and
 - d) All other associated works that are incidental to and necessary for the completion of the Project.
- 1.1.4 The major construction activities of the Project include earthworks, drilling and blasting, construction of concrete structures, handling and transportation of excavated materials, water mains laying, installation of electrical and mechanical (E&M) equipment and material transportation. The operation of the existing DHSRs and the associated facilities will be terminated after the completion of the testing and commissioning of the relocated DHSRs. Under the Project, the existing DHSRs and associated facilities will be retained after termination of the operation. The subsequent demolition works will be carried out by other government departments/ project proponents.
- 1.1.5 The Project construction was commenced on 31 March 2023 and the completion date for the construction works would be on 12 April 2027.
- 1.1.6 The Project is a Designated Project under Item Q.2, Part I of Schedule 2 of the Environmental Impact Assessment Ordinance, "Underground Rock Caverns", which requires an environmental permit from the Environmental Protection Department (EPD) for its construction and operation.
- 1.1.7 Pursuant to the Environmental Impact Assessment Ordinance (EIAO), the Director of EPD granted the Environmental Permits (EP-602/2021) to the Water Supplies Department (WSD) for the Project.





- 1.1.8 Acuity Sustainability Consulting Limited (ASCL) is commissioned by Chun Wo Sinohydro Joint Venture to undertake the role of Environmental Team under the Environmental Permit (EP) EP-602/2021, and to carry out the EM&A programme in fulfilment of the EM&A Manual, and other requirements stipulated in the associated EIA Report.
- 1.1.9 This is the 18th Monthly EM&A Report summarizing the key findings of the construction phase EM&A programme from 1 September to 30 September 2024 (the reporting period) and is submitted to fulfil the requirements under Condition 3.4 of EP-602/2021 and Section 13.3 of the EM&A Manual of the Project.

1.2 Construction Works Programme

1.2.1 The construction works of the Project was commenced on 31 March 2023. The construction works programme, and the location of construction works of the Project are shown in **Appendix A** and **Figure 1.1**, respectively. A summary of construction activities undertaken during the reporting period is presented below:

Portion 3:

- PAB Pipe Pile Installation (Ø355)
- PAB Excavation & Tie Back Installation
- C/C Tunnel construction
- Steel work for raking strut
- Pump house E&M provision

Portion 5:

- Pipe piling works for jacking pit ELS
- Open trench main laying works
- ELS for Receiving Pit
- Reinstatement works
- Backfilling works
- Trial Pit Works

1.2.2 **Table 1.1** summarise the status of temporary traffic sections near the works sites.

Table 1.1 Status of the Temporary Traffic Arrangement (TTA) Sections





Name of TTA	Status
Section 1 – Lion Rock Road	Implemented
Section 1 - Chuk Yuen Road (Westbound) near Tin Ma Court	To be implemented
Section 1 - Chuk Yuen Road (Eastbound) near Tin Wang Court	Implemented
Section 2 - Chuk Yuen Road near Pang Ching Court	Implemented
Section 2 – Chuk Yuen Road near Pang Ching Court (eastbound)	Implemented
Section 2 - Chuk Yuen Road near Chuk Yuen South Estate (westbound)	Implemented
Section 2 - Chuk Yuen Road near Chuk Yuen Estate Bus Terminus (westbound)	Implemented
Section 2 - Chuk Yuen Road near Chuk Yuen Estate Bus Terminus (eastbound)	Implemented
Section 3 - Chuk Yuen Road near Bus Terminus (eastbound)	Implemented
Section 3 - Chuk Yuen Road near Market (westbound)	Implemented
Section 3 - Shatin Pass Road Top	Removed
Section 3 - Shatin Pass Road Middle	To be implemented
Section 3 - Tsz Wan Shan Road stage 2	To be implemented
Section 3 - Lung Fung Street (Combine TTA with CSCE)	To be implemented
Section 3 – Sheung Fung Street	To be implemented

1.3 Project Organization

- 1.3.1 Different parties with different levels of involvement in the Project organization include:
 - Project Proponent: Water Supplies Department (WSD)
 - Supervisor/ Engineer's Representative (ER): Binnies Hong Kong Limited
 - Contractor: Chun Wo Sinohydro Joint Venture
 - Environmental Team (ET): Acuity Sustainability Consulting Limited





- Independent Environmental Checker (IEC): Umwelt Consulting Limited
- 1.3.2 The key personnel contact names and telephone number are presented in **Appendix B**.

1.4 License, Notification and Permits

1.4.1 A summary of the relevant permit, licences, and/ or notifications on environmental protection for this Project are presented in **Table 1.2**.

Table 1.2 Status of Environmental License, Notifications and Permits

Dawnit / Lianga Na	Valid	Ctotas					
Permit / License No.	From	Expired On	Status				
Environmental Permit							
EP-602/2021	14/12/2021	-	Valid				
Notification Pursuant to Section 3(1) of the Air Pollution Control (Construction Dust) Regulation							
Ref. No.: 487301	09/12/2022	-	Valid				
Billing Account for Disposal of Constru	ıction Waste						
7046085	04/01/2023	-	Valid				
Registration of Chemical Waste Produc	cer						
WPN 5213-282-C4760-0	30/12/2022	-	Valid				
Effluent Discharge License under Wate	er Pollution Contro	ol Ordinance					
WT00043965-2023	31/05/2023	31/05/2028	Valid				
WT10002621-2023	08/04/2024	30/04/2029	Valid				
Construction Noise Permit							
GW-RE0141-24	21/02/2024	20/07/2024	Expired				
GW-RE0773-24	02/07/2024	29/10/2024	Valid				
GW-RE0550-24	06/05/2024	06/10/2024	Valid				
GW-RE0823-24	17/07/2024	19/11/2024	Valid				
GW-RE1199-24	07/10/2024	05/04/2025	To be enforced				
GW-RE0982-24	02/11/2024	22/12/2024	To be enforced				

1.4.2 The submission status of the EP and the implementation status of the mitigation measures stated in the EP had been reviewed, all submission were submitted/deposited to the Director of Environmental Protection (DEP) on schedule, no non-compliance of EP conditions was recorded during the reporting period. The summary of submission status under Environmental Permit EP-602/2021 are summarized in **Table 1.3**.





Table 1.3 Summary of Status of Submission under EP-602/2021

EP Condition	Title of Submission	Submission Status	
1.11	Commencement Date of Construction	Notified the DEP on 22 Feb 2023	
2.9	Management Organization(s)	Informed the DEP on 20 Feb 2023	
2.10	Environmental Permit (EP) Submission Schedule	22 Feb 2022 (1st Submission)	
2.11	Construction Works Schedule and Location Plan	28 Feb 2023 (Deposited)	
2.12	Construction Noise Management Plan (CNMP)	 28 Feb 2023 (1st submission) The EPD's comments were issued on 8 Mar 2023 The revised CNMP was submitted to the EPD for comment on 31 Jul 2023. The EPD issued further comments on 16 Aug 2023. The CNMP was further revised, certified by the ET Leader, verified by the IEC, and issued to the EPD on 22 Aug 2023. The revised CNMP was submitted to the EPD for comment on 15 Sept 2023. The EPD had no further comment on 5 Oct 2023. 	
2.13	Waste Management Plan (WMP)	 28 Feb 2023 (1st submission) The EPD's comments were issued on 3 Apr 2023. The revised WMP was submitted to the EPD for comment on 26 July 2023. The WMP was further updated and submitted to the EPD on 16 Aug 2023. The EPD had no further comment on 19 Sep 2023. 	
2.14	Landscape and Visual Mitigation Plan (LVMP)	 28 Feb 2022 (1st Submission) The EPD's comments were issued on 29 Mar 2023. The revised LVMP was certified by the ET Leader, verified by the IEC, 	



EP Condition	Title of Submission	Submission Status
		 and issued to the EPD on 22 Aug 2023. The EPD issued further comments on 11 Sep 2023. The revised LVMP was certified by the ET Leader, verified by the IEC, and issued to the EPD on 15 Jan 2024. The EPD issued further comments on 31 Jan 2024. The revised LVMP was certified by the ET Leader, verified by the ET Leader, verified by the IEC, and issued to the EPD on 19 Apr 2024 The EPD had no further comment on 29 Apr 2024.
3.3	Baseline Monitoring Report	 17 Mar 2023 (1st Submission) 27 Apr 2023 (2nd Submission) 1 June 2023 (3rd Submission) 13 July 2023 (Formal submission) 3 Aug 2023 (accepted by the EPD)
3.4	Monthly EM&A Report (August 2024)	11 September 024
4.2	Dedicated Internet Website	2 May 2023

- 1.4.3 Following the EPD's comments on the Baseline Monitoring Report (Ref. No. BMR-3.1, dated 17 March 2023), updating of air quality and noise monitoring locations were proposed, including cancellation of noise monitoring station at Tower 1, Meridian Hill (NM-1), resumption of air quality and noise monitoring stations at Block 6, Tsui Chuk Garden (i.e. DM-4 and NM-4) and proposal of new noise monitoring locations at Wo Tin House, Shatin Pass Estate (NM-5) and Sheung Fung Street Customs Staff Quarter (NM-6).
- 1.4.4 Additional baseline monitoring for air quality monitoring station DM-4, and noise monitoring stations NM-4, NM-5 and NM-6 was carried out between 2 May and 16 May 2023. The Baseline Monitoring Report was updated with all baseline monitoring results included, certified by the ET Leader, and verified by the IEC on 30 May 2023. The updated Baseline Monitoring Report was submitted to the EPD on 1 June 2023. A minor comment was received from the EPD on 26 June 2023. Following the advice from the EPD, the Report was formally submitted to the EPD on 13 July 2023 after amendment. The Report was accepted by the EPD on 3 August 2023.





1.5 Brief Summary of EM&A Requirements

Air Quality

- 1.5.1 In accordance with the EM&A Manual, the ET shall carry out impact monitoring during construction phase of the project. For 1-hour Total Suspended Particulates (TSP) monitoring, the sampling frequency of at least three times every six days should be undertaken when the highest dust impact occurs.
- 1.5.2 Action and Limit Levels for the 1-hour TSP monitoring works are discussed in **Section 2.4**. Should non-compliance of the criteria occur, action in accordance with the Event and Action Plan presented in **Appendix C** shall be carried out.
- 1.5.3 The air quality mitigation measures detailed in the EM&A Manual were recommended to be implemented during the construction phase. The implementation statuses of these measures are presented in **Appendix D**.

Noise Monitoring

- 1.5.4 Construction noise monitoring should be carried out at the designated monitoring stations directly affected by the construction works once every week after the commencement of construction. During construction works, one set of $L_{eq(30-\text{min})}$ measurement at each station between 0700 and 1900 hours on normal weekdays shall be taken. If construction works are extended to include works during the period between 1900 and 0700 hours, additional weekly impact monitoring shall be carried out during evening and night-time works.
- 1.5.5 Action and Limit Levels for the noise monitoring are discussed in **Section 3.5**. Should non-compliance of the criteria occur, action in accordance with the Event and Action Plan presented in **Appendix C** shall be carried out.
- 1.5.6 The noise mitigation measures detailed in the EM&A Manual are recommended to be implemented during the construction phase. The implementation statuses of these measures are presented in **Appendix D**.

Environmental Requirements in Contract Documents

1.5.7 According to *Particular Specification (PS)*, the Contractor shall undertake environmental protection measures to reduce the environmental impacts arising from the execution of the works. The Contractor shall also observe and comply with relevant environmental protection and pollution control ordinances. The Contractor shall design, construct, operate and maintain pollution control measures to ensure compliance with the contract provisions as well as the environmental ordinances and their regulations.

1.5.8 The Contractor shall also:

- Implement air pollution and noise abatement practices as specified in *PS*;
- Minimise generation of wastewater from the Site;





- On-site sorting of Construction and Demolition (C&D) materials;
- Establish a mechanism to record the quantities of C&D materials generated each month, using the monthly summary "Waste Flow Table";
- Control the use of timbers;
- Implement a trip ticket system (TTS) for tracking the removal of C&D materials from the Site to the disposal grounds;
- Prepare an Environmental Management Plan (EMP) in accordance with GS Section 25 and *PS* for implementation on the Site to reduce environmental nuisance and C&D materials arising from Works, throughout the construction period;
- Arrange weekly environmental walk to inspect the Site, checking that the environmental performance of the Site is satisfactory and in compliance with the requirements under the contract and EMP; and
- Carry out site specific induction training about environmental management as well as safety for all staffs and workers, and provide toolbox talks for workers on environmental nuisance abatement and waste management.





2. AIR QUALITY MONITORING

2.1 Monitoring Locations

2.1.1 The air quality monitoring locations for impact monitoring during the reporting period are listed in **Table 2.1** and presented in **Figure 2.1**.

Table 2.1 Air Quality Monitoring Stations for Construction Phase

ID	Degarintien	Coordinates	
ID	ID Description		Easting
DM-1	Tennis Court near Tin Ma Court	822705	837047
DM-2	Chun Sing House, Tin Ma Court	822673	837143
DM-3	Grace Methodist Church Kindergarten	822782	837227
DM-4	Block 6, Tsui Chuk Garden	822926	837246
DM-4a (1)	Road pavement near Wang King House, Tin Wang Court	822854	837340

Notes:

2.2 Air Quality Monitoring Parameter, Frequency and Duration

2.2.1 **Table 2.2** summarized the monitoring parameter, duration, and frequency of impact air quality monitoring.

Table 2.2 Impact Air Quality Monitoring Parameter, Duration and Frequency

Parameter	Frequency	Duration
1-hour TSP	3 times every 6 days	Throughout the construction phase

2.3 Monitoring Equipment and Methodology and QA/QC Procedure

Proposal of Using Portable Direct Reading Dust Meter

- 2.3.1 Direct reading dust meters were used for measuring 1-hour TSP levels during the impact air quality monitoring. According to Section 4.4.1 of the EM&A Manual, the proposed use of direct reading dust meters was submitted to and agreed by the IEC.
- 2.3.2 Sufficient number of monitoring instruments was prepared by the ET for carrying out the impact monitoring. All equipment and associated instrumentation were clearly labelled.

An additional air quality monitoring station DM-4a was proposed by the ET and agreed by the ER, IEC and EPD.





- 2.3.3 Wind data were collected from the records of Hong Kong Observatory Kai Tak Wind Station (22.30966N, 114.21336E), which is located at the south-eastern side of runway of the former Kai Tak Airport about 4.5 km south-east from the project site.
- 2.3.4 Equipment used in the impact air quality monitoring programme is summarised in **Table 2.3.** Calibration certificates for the impact air quality monitoring equipment are attached in **Appendix E**.

Table 2.3 Impact Air Quality Monitoring Equipment

Equipment	Brand and Model	Serial No.	Calibration Due Date
Direct Reading Dust Meter	Sibata LD-5R	0Z4545	28/11/2024
		882106	28/11/2024
		942532	28/11/2024

Maintenance and Calibration

- 2.3.5 Direct reading dust meters have been calibrated against high volume samplers (HVSs) annually. A 2-day, three 3-hour measurement results per day from direct reading dust meters were taken to compare with the sampling results from the HVSs. The correlation between the direct reading dust meters and the HVSs were then concluded. By accounting for the correlation factor, the direct reading dust meters are considered to achieve comparable results as that of the HVSs.
- 2.3.6 The 1-hour TSP measurement follows the instruction provided in the manufacturer's manual. Before initiating a measurement, zeroing the portable dust meter was carried out to ensure the accuracy of each measurement.

2.4 Action and Limit Levels

2.4.1 The action and limit levels were established in accordance with the EM&A Manual. **Table 2.4** presents the action and limits levels for 1-hour TSP monitoring. Should non-compliance of the criteria occur, action in accordance with the Event and Action Plan presented in **Appendix C** shall be carried out.

Table 2.4 Action and Limit Levels for 1-hour TSP

Monitoring Station	Action Level (μg/m³)	Limit Level (µg/m³)
DM-1	300.1	
DM-2	289.0	
DM-3	289.7	500
DM-4	294.9	
DM-4a	291.6	

2.5 Results and Observation

2.5.1 The impact air quality monitoring was conducted on 3, 9, 14, 20 and 26 September 2024. The impact air quality monitoring schedule for the reporting period is shown in **Appendix F**.





2.5.2 The monitoring results and graphical presentation of impact air quality monitoring are shown in **Appendix G**. No action or limit levels exceedance was recorded in the reporting period.

Table 2.5 Summary of Impact 1-hour TSP Monitoring Results

Monitoring	TSP C	TSP Concentration, μg/m ³		Action Level	I imit I aval
Station	Average	Minimum	Maximum	Action Level	Limit Level
DM-1	62	59	64	300.1	
DM-2	55	49	59	289.0	
DM-3	38	31	45	289.7	500
DM-4	43	40	50	294.9	
DM-4a	59	50	64	291.6	

2.5.3 During the impact air quality monitoring, the major dust sources at each monitoring stations were summarized in **Table 2.6**.

Table 2.6 Influencing Factors at/near Air Quality Monitoring Stations

Monitoring Stations	Influencing Factors
DM-1	Not identified
DM-2	Not identified
DM-3	Not identified
DM-4	Not identified
DM-4a	Not identified

2.5.4 Weather conditions during impact monitoring are presented in **Appendix G** and extracts of wind data recorded at Kai Tak Wind Station available from the Hong Kong Observatory are presented in **Appendix H**.





3. NOISE MONITORING

3.1 Monitoring Locations

3.1.1 The monitoring locations for construction noise monitoring are listed in **Table 3.1** and shown in **Figure 3.1**.

Table 3.1 Noise Monitoring Stations during Construction Phase

ID	Degenintien	Maagunamant	Coordinates	
ID	Description	Measurement	Northing	Easting
NM-2	Chun Sing House, Tin Ma Court	Façade	822668	837143
NM-3	Grace Methodist Church Kindergarten	Façade	822782	837227
NM-4	Block 6, Tsui Chuk Garden	Façade	822926	837246
NM-4a ⁽¹⁾	Road pavement near Wang King House, Tin Wang Court	Free field	822854	837340
NM-5 ⁽²⁾	Wo Tin House, Shatin Pass Estate	Façade	823360	838143
NM-6 ⁽²⁾	Sheung Fung Street Customs Staff Quarters	Free field	823134	838412

Notes:

The noise monitoring station proposed in the EM&A Manual (NM-1) was not available for baseline and impact monitoring. Therefore, impact monitoring at NM-1 was cancelled and agreed by the ER, IEC and EPD.

- (1) An additional noise monitoring station NM-4a was proposed by the ET and agreed by the ER, IEC and EPD.
- (2) Main laying works near NM-5 and NM-6 were commenced in early September 2023. Noise monitoring at NM-5 and NM-6 was commenced on 7 September 2023.

3.2 Noise Monitoring Parameter, Frequency and Duration

- 3.2.1 Construction noise level was measured by the ET and measured in terms of the A-weighted equivalent continuous sound pressure level (L_{eq}). $L_{eq(30-\text{min})}$ was adopted as the monitoring parameter for the construction noise monitoring.
- 3.2.2 As supplementary information for data auditing, statistical results such as L_{10} and L_{90} were also obtained for reference.
- 3.2.3 **Table 3.2** summarized the monitoring parameters, duration, and frequency of construction noise monitoring.

Table 3.2 Construction Noise Monitoring Parameter, Frequency and Duration

Parameters	Time	Frequency	Duration
$L_{eq(30 ext{-min})}$	0700 and 1900 hours on normal weekdays	Once every week	Throughout the construction phase





3.3 Monitoring Equipment, Methodology and QA / QC Procedure

- 3.3.1 As referred to the technical memorandum (TM) issued under the NCO, sound level meters in compliance with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications were used for carrying out the construction noise monitoring.
- 3.3.2 Noise measurements were not made in fog, rain, wind with a steady speed exceeding 5 m/s or wind with gusts exceeding 10 m/s. The wind speed was checked with a portable wind speed meter capable of measuring the wind speed in m/s.
- 3.3.3 Sufficient number of noise measuring equipment and associated instrumentation was prepared by the Environmental Team. All the equipment and associated instrumentation were clearly labelled.
- 3.3.4 Wind data were collected from the records of Hong Kong Observatory Kai Tak Wind Station (22.30966N, 114.21336E), which is located at the south-eastern side of runway of the former Kai Tak Airport about 4.5 km south-east from the project site.
- 3.3.5 The monitoring procedures are as follows:
 - For façade measurement, the monitoring station was set at a point 1 m from the exterior of the sensitive receiver building façade and set at a position 1.2 m above the ground. For free-field measurement, the monitoring station was set at a position 1.2 m above ground.
 - The battery condition was checked to ensure good functioning of the meter.
 - Parameters such as frequency weighting, the time weighting and the interval were set as follows:
 - Frequency weighting: A
 - Time weighting: Fast
 - Interval: 30 minutes $(L_{eq(30-\text{min})})$ would be determined for

daytime noise by calculating the logarithmic

average of six consecutive $L_{eq(5-min)}$ data

- Prior to and after each noise measurement, the meter was calibrated using an acoustic calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after measurement is more than 1.0 dB, the measurement was considered invalid and repeat of noise measurement will be required after recalibration or repair of the equipment.
- At the end of the monitoring period, the values of L_{eq} , L_{90} and L_{10} were recorded. In addition, noise sources were recorded on a standard record sheet.
- 3.3.6 **Table 3.3** summarized the noise monitoring equipment used during the construction noise monitoring. Calibration certificates for the impact noise monitoring equipment are attached in **Appendix E**.





Table 3.3 Construction Noise Monitoring Equipment

Equipment	Model (Serial Number)	Calibration Due Date
Sound Level Meter	NTi-XL2 (A2A-09696-E0)	01/03/2025
Sound Calibrator	Rion NC 74 (34615222)	26/03/2025

3.4 Maintenance and Calibration

- 3.4.1 Maintenance and calibration procedures are as follows:
 - The microphone head of the sound level meter and calibrator were regularly cleaned with a soft cloth; and
 - The sound level meter and acoustic calibrator were calibrated annually by a HOKLAS accredited laboratory or the manufacturer.

3.5 Action and Limit Levels

3.5.1 The Action and Limit Levels were established in accordance with the EM&A Manual. **Table 3.4** presents the Action and Limit Levels for construction noise. Should non-compliance of the criteria occur, action in accordance with the Event and Action Plan presented in **Appendix C** shall be carried out.

Table 3.4 Action and Limit Levels for Construction Noise Monitoring

Monitoring Stations	Action Level	Limit Level	Time Period
NM-2		75 dB(A)	
NM-3		70/65 dB(A) *	
NM-4	When one	75 dB(A)	0700 - 1900 hours
NM-4a	documented complaint is received	75 dB(A)	on normal weekdays
NM-5		75 dB(A)	75 dB(A)
NM-6		75 dB(A)	

Notes:

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

3.6 Results and Observations

- 3.6.1 The construction noise monitoring was conducted on 3, 9, 20 and 26 September 2024. The monitoring schedule is presented in **Appendix F**.
- 3.6.2 The construction noise monitoring results are summarized in **Table 3.5**. No Action Level or Limit Level exceedance was recorded in the reporting period. Details of the results and graphical presentation are shown in **Appendix I**.

^{* 70} dB(A) for school and 65 dB(A) during school examination period.





Table 3.5 Summary of Construction Noise Monitoring Results

3.5	N	oise Level, dB	Limit Level			
Monitoring Station		$L_{eq(30\text{-min})}$	Limit Level			
Station	Mean	Minimum	Maximum			
NM-2	70.3	70.2	70.6	75 dB(A)		
NM-3	57.8	55.9	60.2	70/ 65 dB(A) ⁽¹⁾		
NM-4	57.1	52.2	65.5	75 dB(A)		
NM-4a	69.7	69.0	70.1	75 dB(A)		
NM-5 ⁽²⁾	66.5	60.3	71.7	75 dB(A)		
NM-6 (2)	70.6	67.4	72.0	75 dB(A)		

Note:

- (1) 70 dB(A) for school and 65 dB(A) during school examination period.
- (2) Impact monitoring at NM-5 and NM-6 was commenced on 7 September 2023.
- 3.6.3 Weather conditions during impact monitoring are presented in **Appendix I** and extracts of wind data recorded at Kai Tak Wind Station available from the Hong Kong Observatory are presented in **Appendix H**.
- 3.6.4 During the construction noise monitoring period, the influencing factors which may affect the results are summarized in **Table 3.6**.

Table 3.6 Influencing Factors at Noise Monitoring Stations

Monitoring Stations	Influencing Factors
NM-2	Road traffic noise, construction noise from 76 Broadcast Drive project
NM-3	Road traffic noise
NM-4	Road traffic noise
NM-4a	Road traffic noise
NM-5	Road traffic noise
NM-6	Road traffic noise





4. WASTE MANAGEMENT

4.1.1 Waste generated from the Project includes inert construction and demolition (C&D) materials and non-inert C&D wastes in the reporting period. The amount of waste generated by the construction works of the Project during the reporting period is shown in **Table 4.1** and the cumulative waste flow table was presented in **Appendix J**.

Table 4.1 Summary of Waste Generated in the Reporting Period

	Actual Quantalities of Inert C&D Materials Generated Monthly					Actual Quantities of C&D Wastes Generated Monthly				Actual Quantities of C&D Wastes Recycled						
Month	Total Quantity Generated	Broken Concrete (including rock for recycling into aggregates)	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ Cardboard Packaging	Plastics	Chemical Waste	Others e.g., general refuse	Metals	Paper/ cardboard packaging	Plastics (bottles/ containers, plastic sheets/foam package material)	Yard Waste	Others
	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)
September 2024	0.8353	0.00000	0.0169	0.2998	0.5185	0.00000	0.00000	0.00000	0.00000	0.00000	0.0229	0.0032	0.0133	0.0008	0.00000	0.00000

- 4.1.2 Construction and demolition (C&D) materials sorting was carried out on site. Sufficient receptacles were provided for general refuse collection and sorting. Excavated inert C&D materials were reused to minimize the disposal of C&D waste to public fill.
- 4.1.3 The Contractor was advised to minimize the amount of waste through recycling or reusing. All applicable mitigation measures stipulated in the EM&A Manual and waste management plans shall be fully implemented.





5. ENVIRONMENTAL SITE INSPECTION AND AUDIT

- 5.1.1 Site inspections were carried out by the ET on a weekly basis to monitor the implementation of proper environmental pollution control mitigation measures for the Project. During the reporting period, site inspections were carried out on 20 and 27 September 2024. A joint site inspection with the ER, the Contractor and the IEC was carried out on 13 September 2024
- 5.1.2 During the site inspections in the reporting period, no non-conformance was identified. Key observations and reminders during the site inspections are described in **Table 5.1.**

Table 5.1 Summary of Site Inspection Observations and Recommendations

Inspection Date	Key Observations/ Reminders	Follow-up Action				
13 September 2024	Portion 3 Observation: 1. Diesel leaked from equipment should be removed as soon as possible 2. The sand particles of haul road should be cleaned more frequently to minimize dust dispersion Work Area at Pang Ching Court 1. The breaker should be placed on appropriate materials to avoid diesel leakage causing land contamination	Diesel leakage removed (Closed on 13 September 2024) Water spraying has applied to haul road to minimize dust dispersion (Closed on 13 September 2024) The breaker is placed on appropriate materials (Closed on 13 September 2024)				
20 September 2024	Working area at Tsz Wan Shan Road Stage 2 Observation: 1. Work area boundary at lower level should be maintained with filter to avoid muddy water leaking to the public	The filter preventing leakage has been applied at low level. (Closed on 20 September 2024)				
27 September 2024	No major environmental deficiency was observed.	N/A				

5.1.3 According to the EIA Report, EP and the EM&A Manual, the mitigation measures detailed in the documents are recommended to be implemented during the construction phase. A summary of the Project Implementation Schedule is provided in **Appendix D.**





6. ENVIRONMENTAL NON-COMPLIANCE

6.1 Summary of Exceedance

- 6.1.1 No Action Level or Limit Level exceedance was recorded for 1-hour TSP monitoring in the reporting period.
- 6.1.2 No Action Level or Limit Level exceedance was recorded for construction noise monitoring in the reporting period.
- 6.1.3 Should the monitoring results of the environmental monitoring parameters at any designated monitoring stations indicate that the Action/ Limit Levels are exceeded, the actions in accordance with the Event and Action Plans in **Appendix C** would be carried out.

6.2 Summary of Environmental Non-Compliance

6.2.1 No environmental non-compliance was recorded in the reporting period.

6.3 Summary of Environmental Complaint

6.3.1 No environmental complaint was received in the reporting period. The Cumulative Complaint Log is presented in **Appendix K**.

6.4 Summary of Environmental Summon and Successful Prosecution

6.4.1 There was no successful environmental prosecution or notification of summons received since the Project commencement. The Cumulative Log for environmental summon and successful prosecution is presented in **Appendix K**.





7. FUTURE KEY ISSUE

7.1 Construction Works and Potential Environmental Issues in the next Reporting Period

- 7.1.1 The construction programme for the Project for the next reporting period is presented in **Appendix A**.
- 7.1.2 Works to be undertaken in the next two months are summarized below:

Portion 3:

- PAB Pipe Pile Installation (Ø355)
- PAB Excavation & Tie Back Installation
- C/C Tunnel construction
- Steel work for raking strut
- Pump house E&M provision
- C/C ELS Backfill to +77mPD
- Jumbo Lifting
- Tunnel Pre-support

Portion 5:

- Open trench main laying works
- ELS for Receiving Pit
- Reinstatement works
- Backfilling works
- Trial Pit Works
- 7.1.3 Potential environmental impacts arising from the above construction activities are mainly associated with construction dust impact, noise impact, water quality impact, waste management and landscape and visual.

7.2 Recommendation

7.2.1 The key environmental mitigation measures for the Project in the coming reporting period associated with the above construction activities will include:





Dust

- Regular watering to reduce dust emissions from the exposed site surface;
- Stockpile of dusty materials shall be covered entirely by impervious sheeting;
- Provide vehicles washing facilities at all site exits to wash away any dusty materials from vehicle body;
- NRMM Labels should be displayed on the applicable equipment on site by the Contractor;
- All vehicle and plant should be cleaned before they leave a construction site.

Noise

- Only well-maintained plant should be operated on-site, and plant should be maintained regularly during the construction programme;
- Quality Powered Mechanical Equipment (QPME) should be adopted as far as possible.

Water Quality

- No effluent discharge would be allowed before the effluent discharge license is acquired.
- Surface run-off from construction sites should be discharged into dedicated discharge point via adequately designed sand/ silt removal facilities;
- Channels/ earth bunds/ sandbags barriers should be provided on site to properly direct stormwater to silt removal facilities;
- Silt removal facilities, channels and manholes should be maintained, and the deposited silt and grit should be removed regularly;
- Open stockpiles of construction materials on sites should be covered with tarpaulin or similar fabric during rainstorms;
- Perimeter channels should be provided on site boundaries where necessary to intercept stormwater run-off from outside the site so that it will not wash across the site;
- Bare slope should be covered completely by using canvas to reduce muddy surface runoff during typhoons and rainstorms.

Waste Management

- Provision of sufficient waste disposal points and regular collection of waste;
- Regular cleaning and maintenance programme for drainage system;





- Chemical containers shall be stored with drip tray underneath;
- Storage, handling, transport, and disposal of chemical waste should be arranged in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published by EPD, and collected by a licensed chemical waste collector.

Ecology

- Minimize loss of habitats and associated wildlife;
- Using directional lighting to prevent excessive light spill into adjacent natural habitat and disturbance to nocturnal fauna.

Landscape and Visual

 Adequate tree protection measures shall be provided for the trees to be retained on site.



8. CONCLUSION, COMMENTS AND RECOMMENDATION

8.1 Conclusion

- 8.1.1 This is the 18th Monthly EM&A Report presenting the EM&A works during the reporting period from 1 September 2024 to 31 September 2024 in accordance with the EM&A Manual.
- 8.1.2 No Action Level or Limit Level exceedance was recorded for 1-hour TSP monitoring in the reporting period.
- 8.1.3 No Action Level or Limit Level exceedance was recorded for construction noise monitoring in the reporting period.
- 8.1.4 Environmental site inspections were conducted on 6, 13, 20 and 27 September 2024 by the ET in the reporting period.
- 8.1.5 No environmental complaint was received in the reporting period.
- 8.1.6 No notification of summons and prosecution was received in the reporting period.
- 8.1.7 The ET will keep track on the construction works to confirm compliance of environmental requirements and the proper implementation of all necessary mitigation measures.
- 8.1.8 No change to the EM&A programme was made in this reporting period.

8.2 Comments and Recommendations

- 8.2.1 The proposed mitigation measures were properly implemented and were considered effective and efficient in pollution control.
- 8.2.2 The ET had no recommendation following the completion of EM&A in the reporting period.





Figures





Figure 1.1 Project Layout Plan

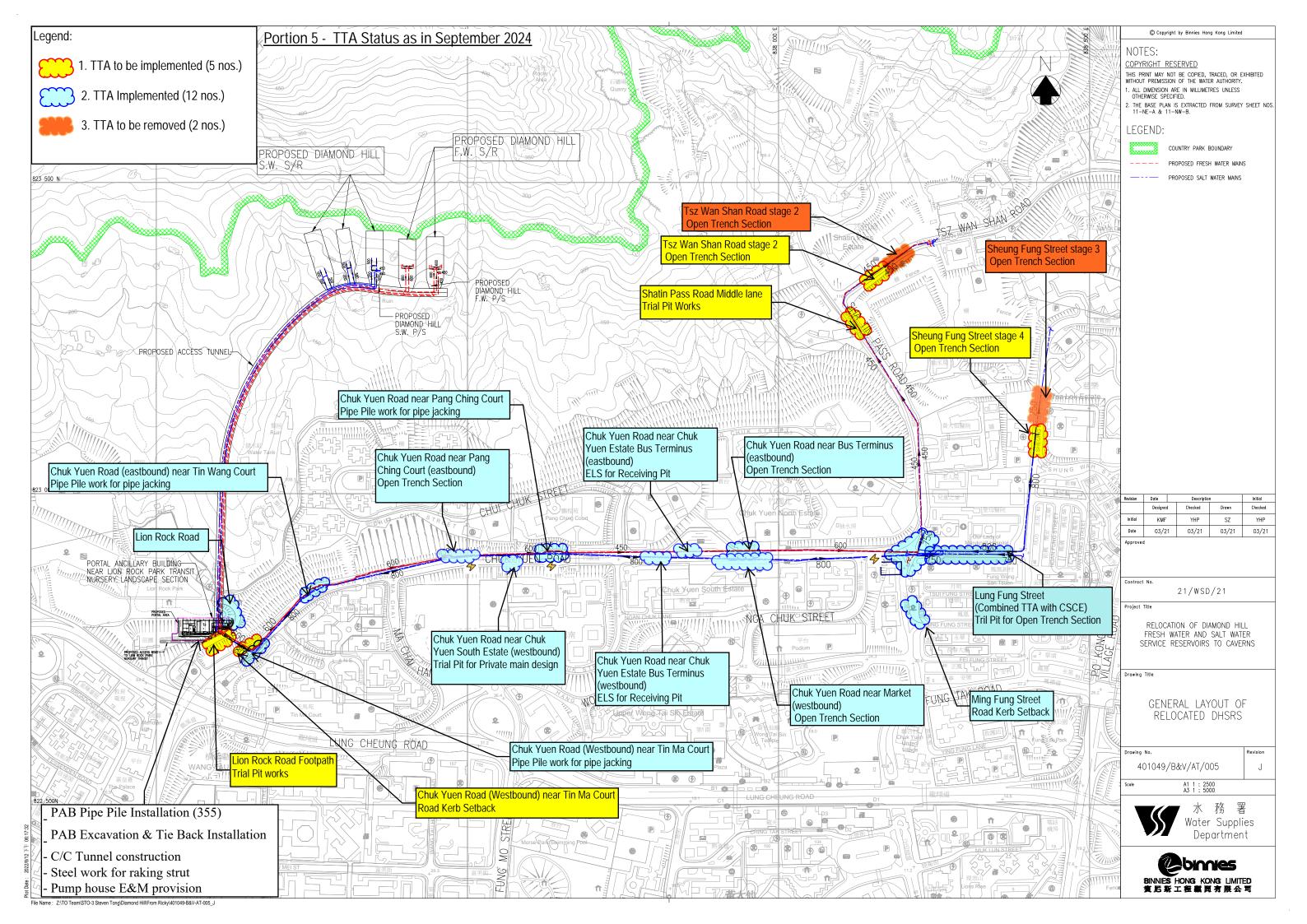






Figure 2.1 Air Quality Monitoring Stations

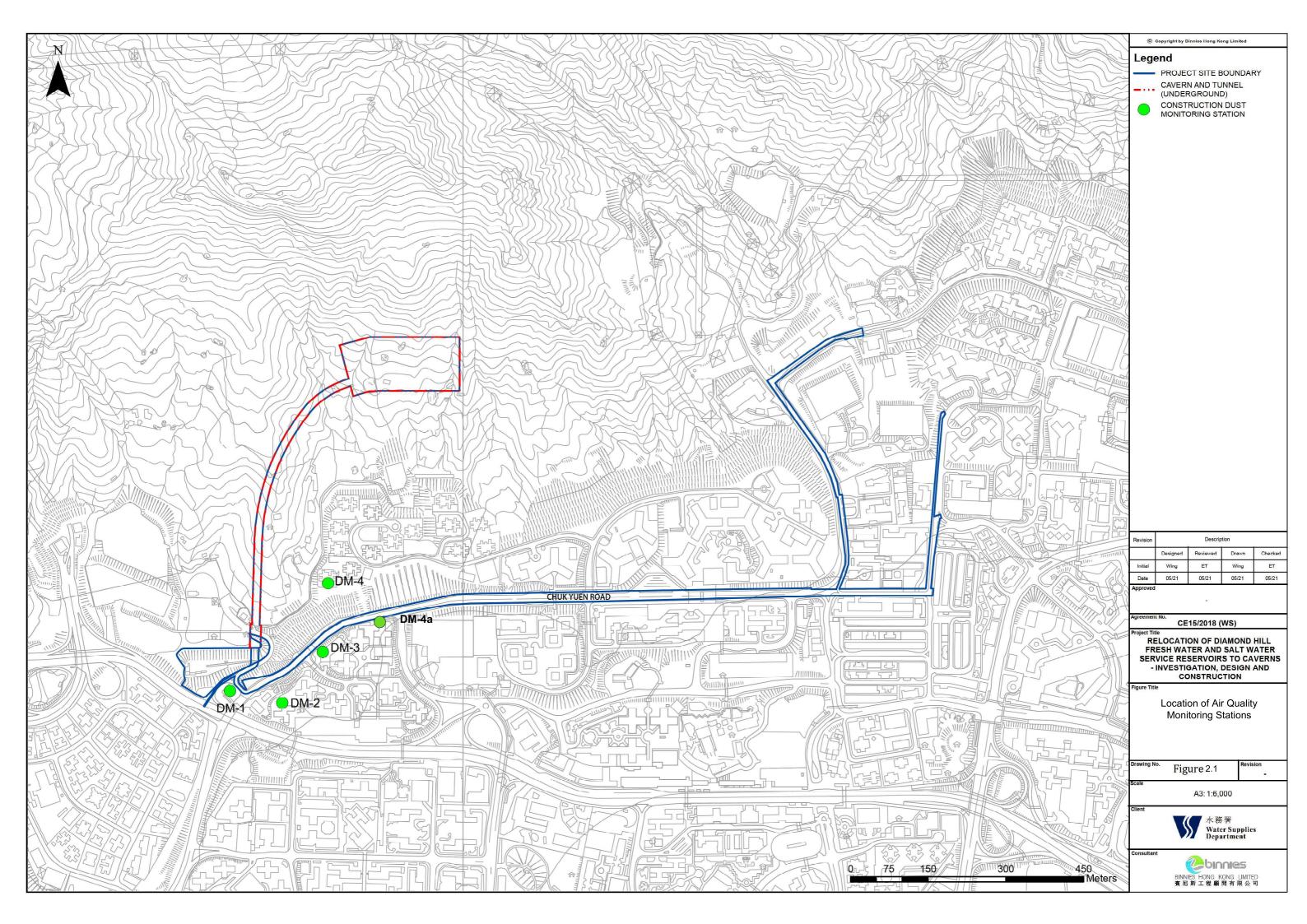
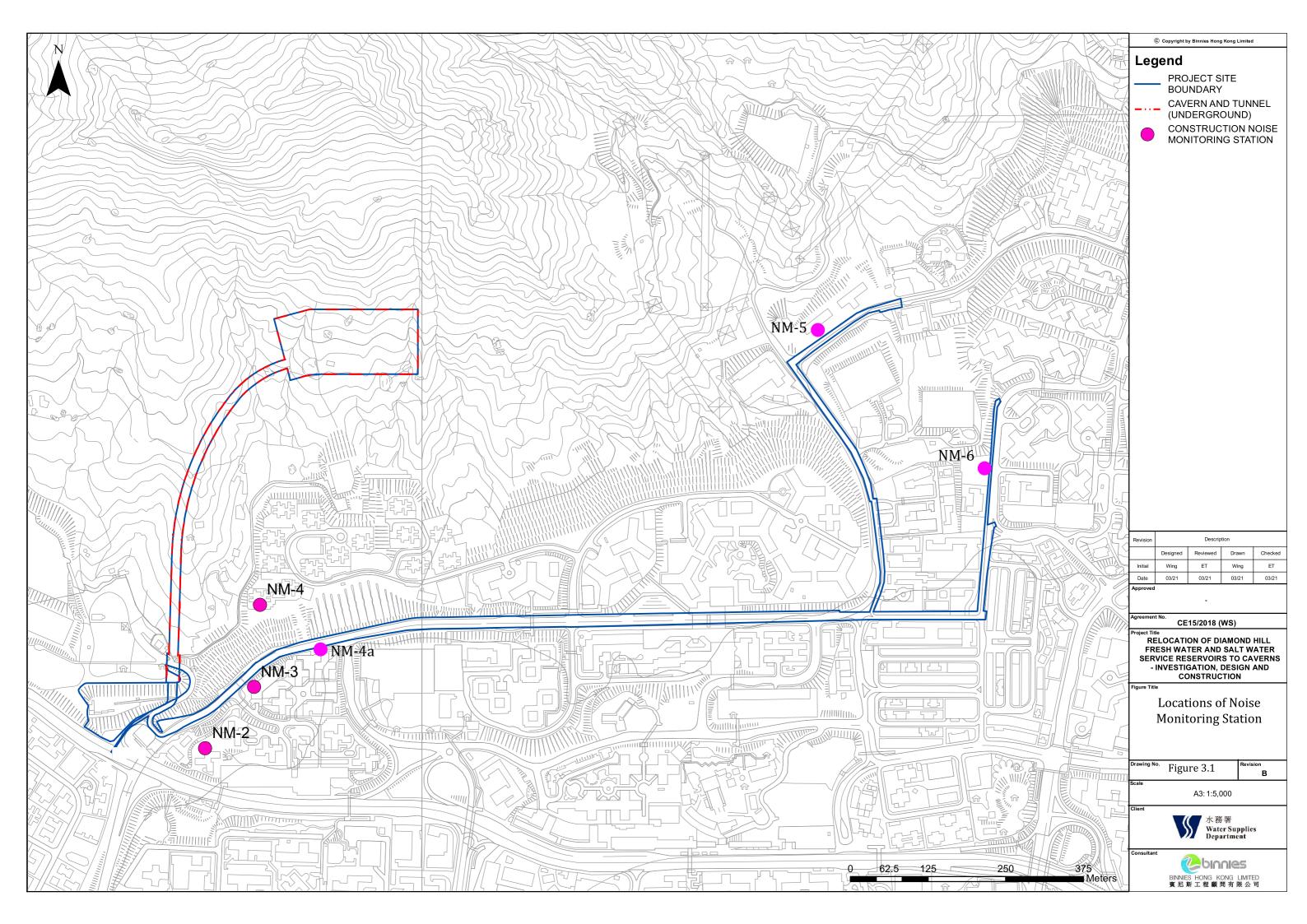






Figure 3.1 Construction Noise Monitoring Stations

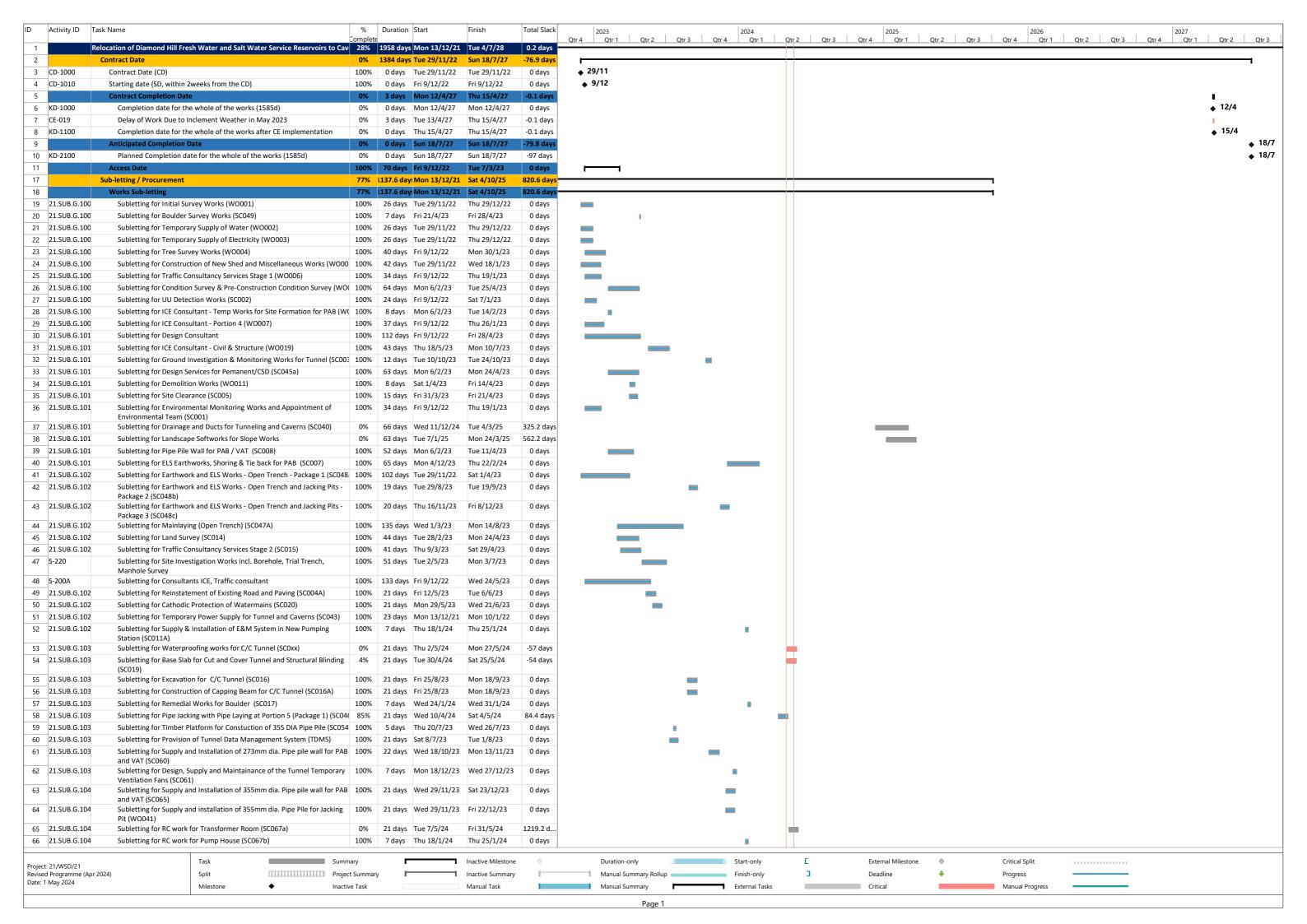




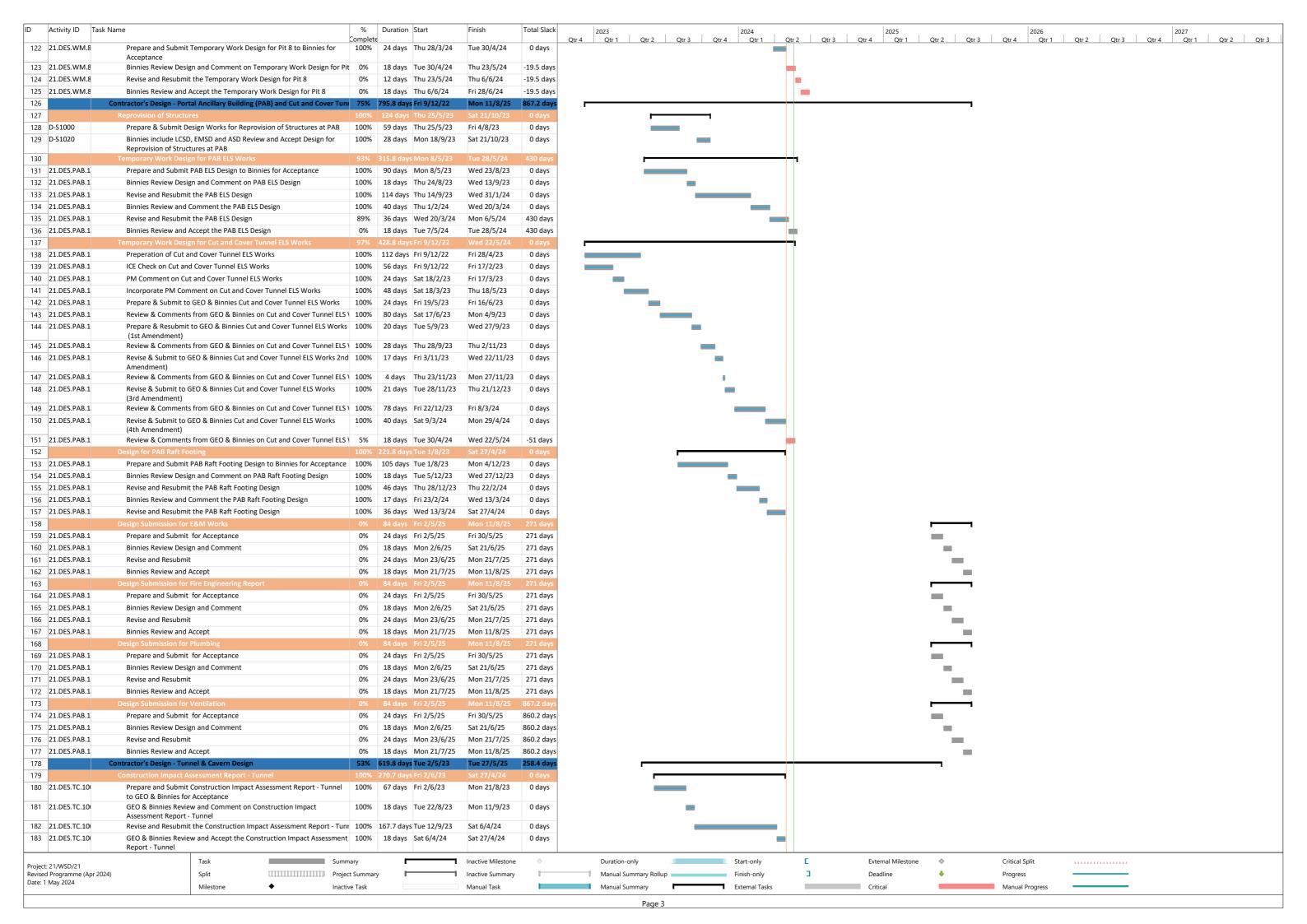


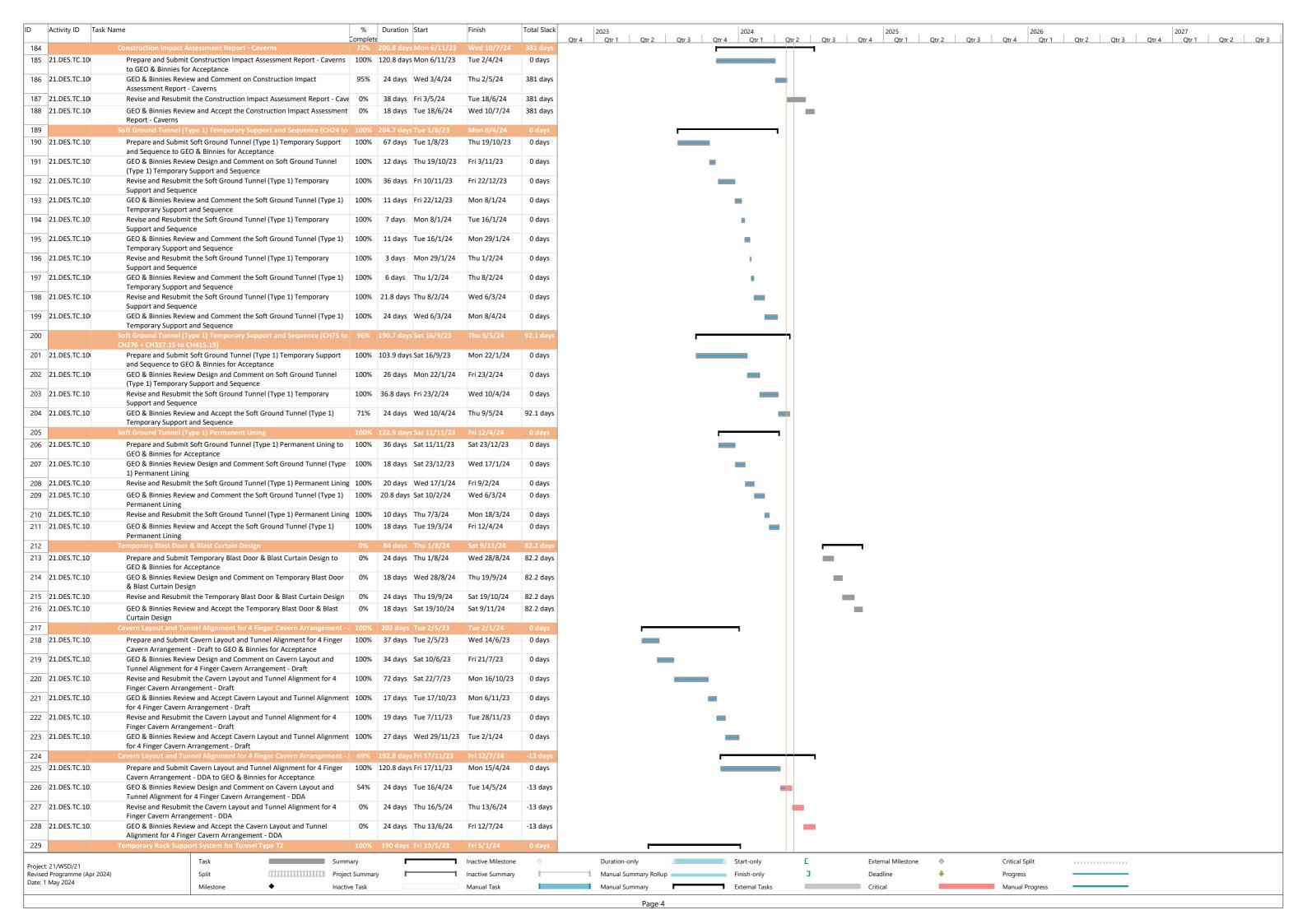
Appendix A

Master Construction Programme for the Project

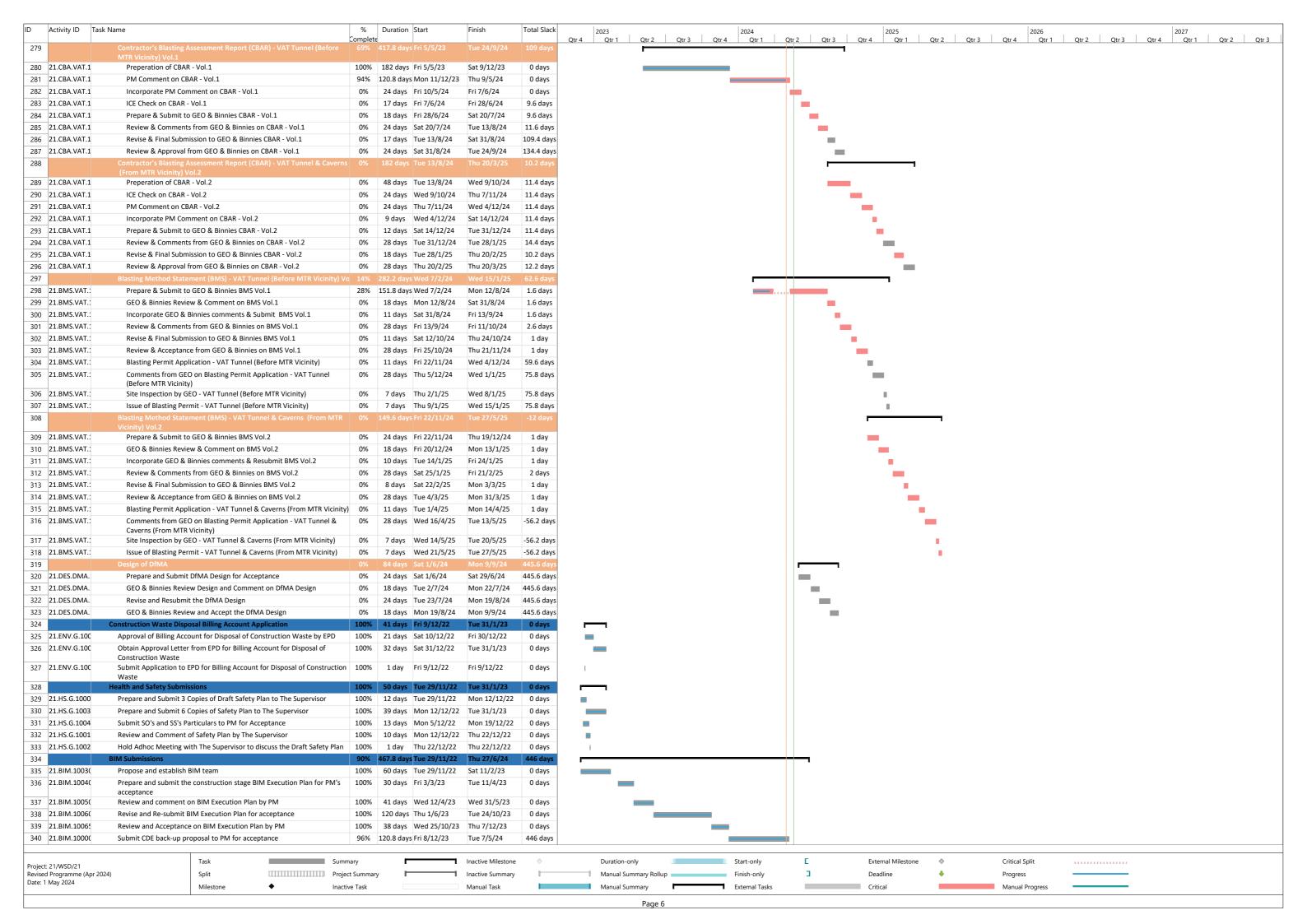


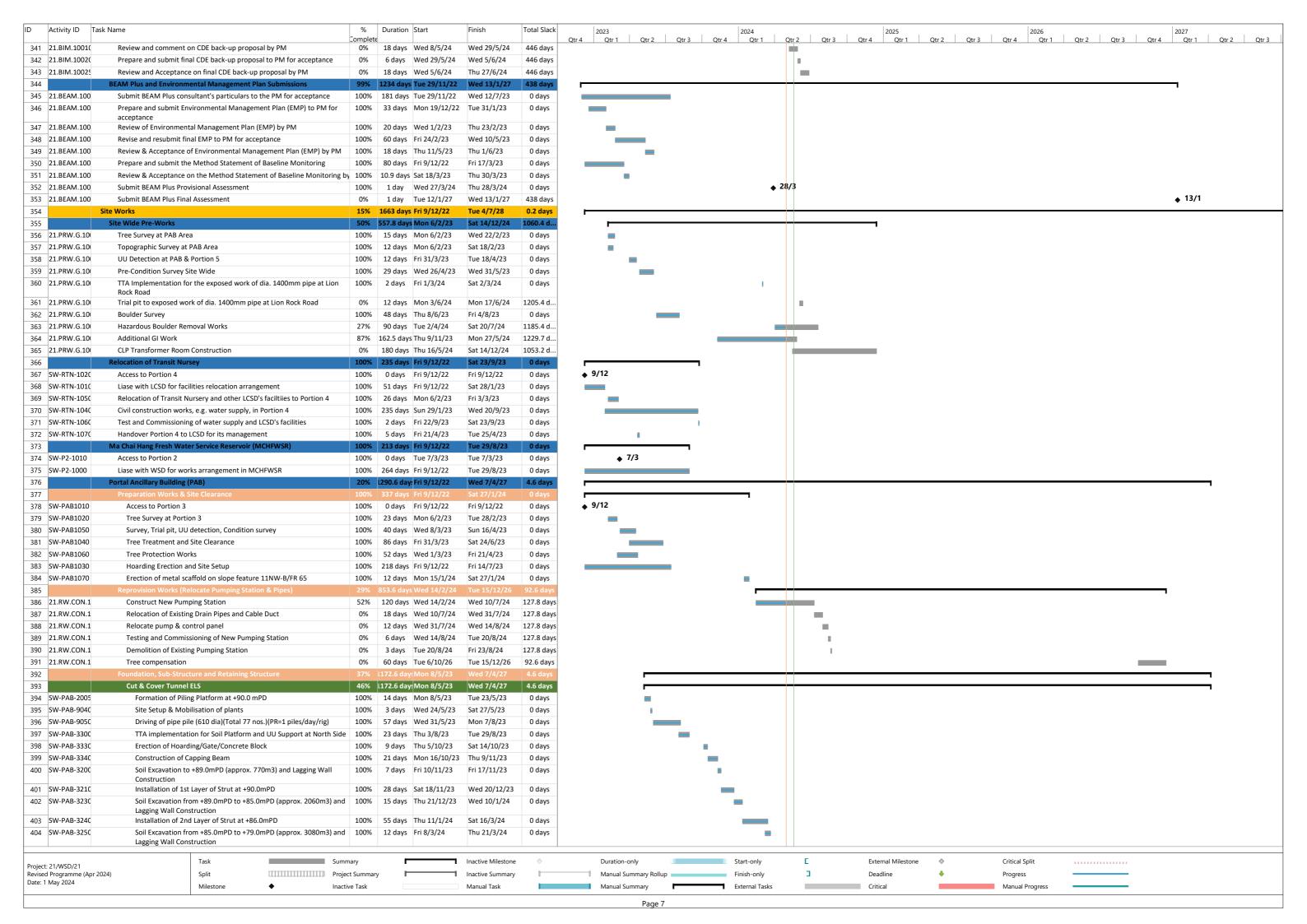
ID Activity ID Ta	ask Name	% Complete	Duration Start	rt Fir	nish	Total Slack	2023 Qtr 4 Qtr 1 Qtr 2 Qtr 3 Qtr 4	2024 Otr 1	0tr 2 0tr 2	2025 Otr 4	Otr 2 Otr 2	2026	Otr 2 Otr 2	2027 Otr 4	Otr 2 Otr 2
67 21.SUB.G.104	Subletting for Tunnel Works (Package 1a) for Modification of CnC ELS to		5 days Thu 2	ı 21/12/23 Th	nu 28/12/23	0 days	Qtr 4 Qtr 1 Qtr 2 Qtr 3 Qtr 4	Qtr i C	Qtr2 Qtr3	Qtr 4 Qtr I	Qtr2 Qtr3	Qtr4 Qtr1	Qtr2 Qtr3	Qtr 4 Qtr I	Qtr 2 Qtr 3
50 24 5110 6 404	Provide Noise Enclosure - Design (SC024a1)		24 1 5:3	2/5/24	20/5/24	4222.2									
68 21.SUB.G.104	Subletting for Tunnel Works (Package 1a) for Modification of CnC ELS to Provide Noise Enclosure - Supply and Construct (SC024a2)	0%	21 days Fri 3,	3/5/24 Tu	ue 28/5/24	1222.2 days									
69 21.SUB.G.104	Subletting for Tunnel Works (Package 1b) for Pre-Support Works prior to	4%	21 days Tue 3	e 30/4/24 Sa	at 25/5/24	1231.4			-						
	Mined Tunnel Excavation(SC024b)					days									
70 21.SUB.G.104	Subletting for Tunnel Works (Package 2) for Ch024 to Ch645 and Caverns (SC025)	s 0%	21 days Fri 1	17/5/24 Tu	ue 11/6/24	66 days									
71 21.SUB.G.104	Subletting for E&M for PAB, Tunnel and Caverns (Other than Pumpset) (S	SC 0%	21 days Thu	ı 11/7/24 Sa	at 3/8/24	672 days			_						
72 21.SUB.G.105	Subletting for E&M for Tunnel and Caverns (Pumping System) (SC032)		21 days Thu		at 3/8/24	672 days									
73 21.SUB.G.105	Subletting for RC work for Portal Ancillary Building (SC018)	0%	21 days Sat 1	1/6/24 W	/ed 26/6/24	330.2 days									
74 21.SUB.G.105	Subletting for RC work for Retaining Wall (SC023)	0%	21 days Tue 2	2/7/24 Th	nu 25/7/24	351.2 days			_						
75 21.SUB.G.105	Subletting for Architectural works for Portal Ancillary Building (SC036)	0%	21 days Wed	d 10/9/25 Sa	at 4/10/25	813.4 days					-				
76 21.SUB.G.105	Subletting for Waterproofing works for Fresh Water & Salt Water Service	e 0%	21 days Tue 3	e 11/6/24 Fr	i 5/7/24	1190.4									
77 21 SUD C 10F	Reservoirs (SC030) Subletting for Drainage and Ducts for Fresh Water & Salt Water Service	0%	21 days Tue	11/6/24 5-	: [/7 /24	days 1190.4			_						
77 21.SUB.G.105	Reservoirs (SC027)	0%	21 days Tue :	: 11/0/24	i 5/7/24	days			_						
78 21.SUB.G.105	Subletting for RC work for Fresh Water & Salt Water Service Reservoirs (SC 0%	21 days Tue	e 11/6/24 Fr	i 5/7/24	1190.4 d			_						
79 21.SUB.G.105	Subletting for E&M work for transformer room (SC043b)	0%	21 days Tue	27/5/24 Fr	i 31/5/24	1219.2 d			-						
80 21.SUB.G.105	Subletting for Instrumentation to MTR Zone (SC033)	0%	21 days Tue	e 7/5/24 Fr	i 31/5/24	1219.2 d			-						
81	Contractor's Design	64%	1234 days Tue	29/11/22 W	/ed 13/1/27	438 days									
82 21.DES.PAB.1	Design submission and Approval for Hoarding at PAB	100%	111 days Fri 9,	9/12/22 Th	nu 27/4/23	0 days									
83 D-1130	Design submission and Approval for Ground and Vibration Monitoring		84 days Tue 2		/ed 12/7/23	0 days									
84 D-1100	Design submission and Approval for Cathodic Protection of Watermains		26 days Mon		ue 19/9/23	0 days	_								
85 D-1050	Design submission and Approval for Architectual Works		75 days Mon		i 23/8/24	688.2 days									
86 D-1040	Design submission and Approval for E&M systems incl. ventilation, lighting,	100%	124 days Thu	ı 25/5/23 Sa	at 21/10/23	0 days									
87	electrical, FS for Tunnel Design for Mainlaying Works	34%	374.7 days Mon	n 10/7/23 Tu	ue 8/10/24	1118.4 d									
88	Design for Pipe Jacking Alignment for Drive 1 & 2		78 days Fri 1		i 21/6/24	1209.2 d	•		<u> </u>						
89 21.DES.WM.1	Prepare and Submit Pipe Jacking Alignment Design for Mainlaying		24 days Fri 1		ue 16/4/24	0 days		•	•						
	Works to Binnies for Acceptance					, .									
90 21.DES.WM.1	Binnies Review Design and Comment on Pipe Jacking Alignment Desig	n 66%	18 days Wed	d 17/4/24 W	/ed 8/5/24	1209.4			1						
91 21.DES.WM.1	for Mainlaying Works Revise and Resubmit the Pipe Jacking Alignment Design for Mainlaying	g 0%	18 days Thu	19/5/24 Th	nu 30/5/24	days 1209.4			_						
51 21.DL3.WW.1	Works	, 070	10 days Tild .	13/3/24	10 30/3/24	days			T						
92 21.DES.WM.1	Binnies Review and Accept the Pipe Jacking Alignment Design for	0%	18 days Thu	ı 30/5/24 Fr	i 21/6/24	1202.2									
02	Mainlaying Works	100%	40 dove Mar	~ 10/7/22 F-	: 25 /0/22	days									
93 94 21.DES.WM.2	Temporary Work Design for Trench Excavation Prepare and Submit Trench Excavation Design for Mainlaying Works to		40 days Mon 24 days Mon		i 25/8/23 Ion 7/8/23	0 days									
94 21.DE3. WIVI.2	Binnies for Acceptance	J 100%	24 days ivion	11 10/7/23	1011 7/6/23	0 days	_								
95 21.DES.WM.2	Binnies Review Design and Accept on Trench Excavation Design for	100%	16 days Mon	n 7/8/23 Fr	i 25/8/23	0 days	_								
	Mainlaying Works														
96	Temporary Work Design for Pit 6		72.8 days Fri 1			0 days									
97 21.DES.WM.3	Prepare and Submit Temporary Work Design for Pit 6 to Binnies for Acceptance	100%	24 days Fri 12	12/1/24 Fr	i 9/2/24	0 days									
98 21.DES.WM.3	Binnies Review Design and Comment on Temporary Work Design for F	Pit 100%	16 days Fri 9,	9/2/24 Fr	i 1/3/24	0 days									
99 21.DES.WM.3	Revise and Resubmit the Temporary Work Design for Pit 6	100%	15 days Fri 1,	1/3/24 Tu	ue 19/3/24	0 days									
100 21.DES.WM.3	Binnies Review and Accept the Temporary Work Design for Pit 6	100%	18 days Mon	n 18/3/24 Fr	i 12/4/24	0 days									
101	Temporary Work Design for Pit 2	0%	78 days Tue	e 2/7/24 W	/ed 2/10/24	124.6 days			—						
102 21.DES.WM.4	Prepare and Submit Temporary Work Design for Pit 2 to Binnies for	0%	24 days Tue 2	2/7/24 M	lon 29/7/24	124.6 days									
	Acceptance														
103 21.DES.WM.4	Binnies Review Design and Comment on Temporary Work Design for F		18 days Tue 3			124.6 days			_						
104 21.DES.WM.4	Revise and Resubmit the Temporary Work Design for Pit 2	0%	18 days Mon			124.6 days									
105 21.DES.WM.4	Binnies Review and Accept the Temporary Work Design for Pit 2	0%	18 days Mon			124.6 days									
106 107 21.DES.WM.5	Temporary Work Design for Pit 3		78 days Mon		ue 3/9/24	0.6 days									
10/ 21.DES.WIVI.5	Prepare and Submit Temporary Work Design for Pit 3 to Binnies for Acceptance	0%	24 days Mon	11 3/0/24 IU	ue 2/7/24	0.6 days			_						
108 21.DES.WM.5	Binnies Review Design and Comment on Temporary Work Design for F	Pit 0%	18 days Wed	d 3/7/24 Tu	ue 23/7/24	0.6 days			_						
109 21.DES.WM.5	Revise and Resubmit the Temporary Work Design for Pit 3	0%	18 days Wed	d 24/7/24 Tu	ue 13/8/24	0.6 days			_						
110 21.DES.WM.5	Binnies Review and Accept the Temporary Work Design for Pit 3	0%	18 days Wed	d 14/8/24 Tu	ue 3/9/24	0.6 days			-						
111	Temporary Work Design for Pit 5	0%	78 days Mon	n 8/7/24 Tu	ue 8/10/24	46.6 days									
112 21.DES.WM.6	Prepare and Submit Temporary Work Design for Pit 5 to Binnies for	0%	24 days Mon	n 8/7/24 Sa	nt 3/8/24	46.6 days			_						
112 21 DEC 14/14 C	Acceptance	Di+ 00/	10 days 14	n E /0/24	+ 24/0/24	16 6 da			_						
113 21.DES.WM.6	Binnies Review Design and Comment on Temporary Work Design for F		18 days Mon		nt 24/8/24	46.6 days									
114 21.DES.WM.6	Revise and Resubmit the Temporary Work Design for Pit 5		18 days Sat 2 18 days Sat 1		et 14/9/24	46.6 days									
115 21.DES.WM.6	Binnies Review and Accept the Temporary Work Design for Pit 5 Temporary Work Design for Pit 7		78 days Thu		ie 8/10/24 at 6/7/24	46.6 days									
117 21.DES.WM.7	Prepare and Submit Temporary Work Design for Pit 7 to Binnies for				ue 30/4/24				'						
. 17 ZI.DLJ. W WI. /	Acceptance	100/0	27 uays IIIU	. 20/3/24	ac 30/4/24	0 days									
118 21.DES.WM.7	Binnies Review Design and Comment on Temporary Work Design for F	it 0%	18 days Tue 3	e 30/4/24 Th	nu 23/5/24	73.3 days			-						
119 21.DES.WM.7	Revise and Resubmit the Temporary Work Design for Pit 7	0%	18 days Thu	ı 23/5/24 Fr	i 14/6/24	1190.3 d									
120 21.DES.WM.7	Binnies Review and Accept the Temporary Work Design for Pit 7	0%	18 days Fri 14	14/6/24 Sa	at 6/7/24	1190.3 d			_						
121	Temporary Work Design for Pit 8	33%	72 days Thu	ı 28/3/24 Fr	i 28/6/24	-19.5 days			 						
								,							
	T					_									
	Task Sum	nmary		Ina	ctive Milestone	♦	Duration-only	Start-only	Е	External Milestone	♦	Critical Split			
Project: 21/WSD/21		-					_								
Revised Programme (Apr 2	Split Proj	ject Summary	у 📗		active Summary			Finish-only	3	Deadline		Progress			
	Split Proj	-	у 🗀		active Summary anual Task			Finish-only External Tasks	3	Deadline Critical	+	Progress Manual Progress			

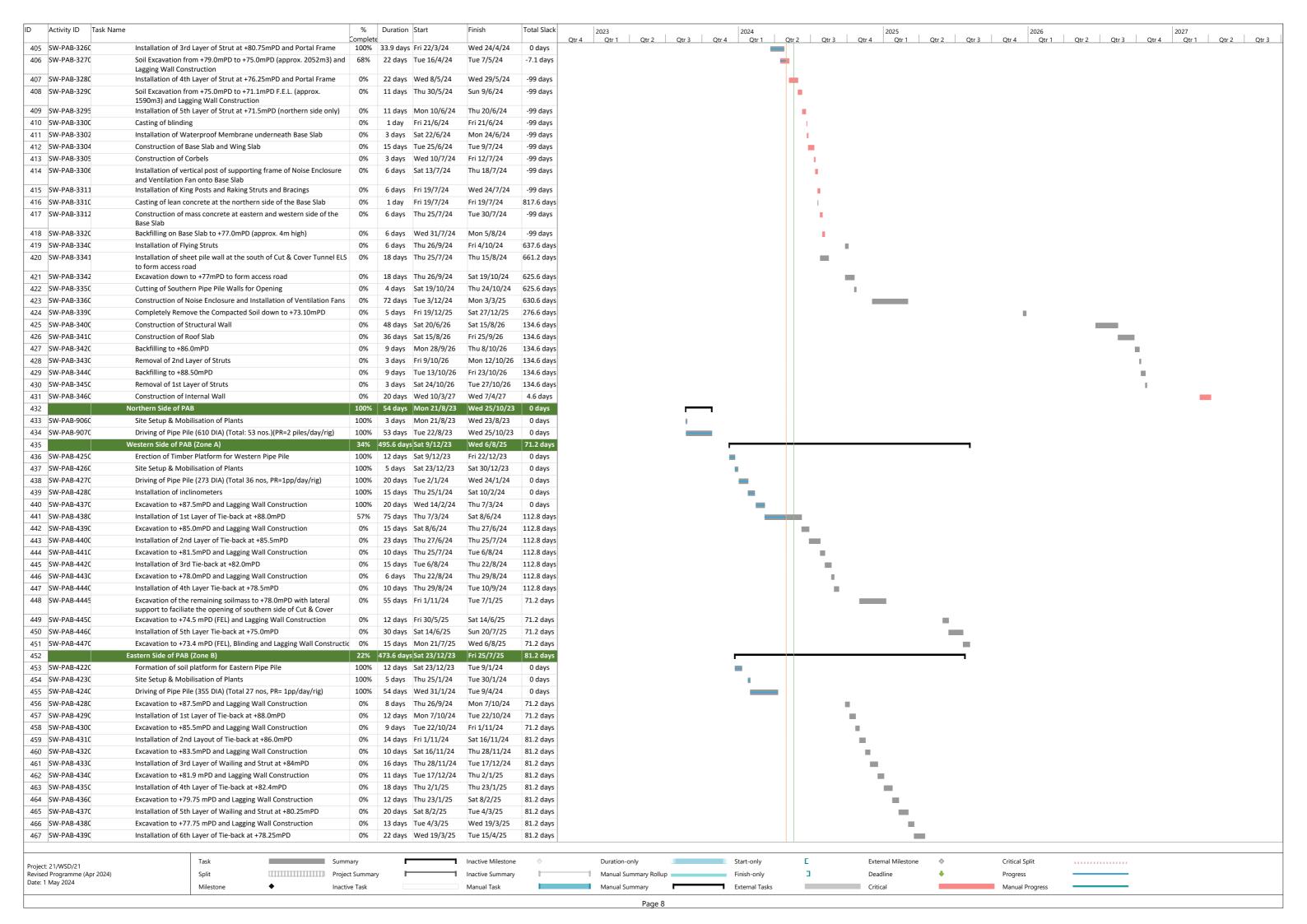




D Activity ID Task	Name	I	Duration Start	rt Fin	nish	Total Slack	2023 2024 2024 20tr 4 Qtr 1 Qtr 2 Qtr 3 Qtr 4 Qtr 1	Qtr 2 Qtr 3 Qtr 4 Qtr	1 0+2 0+2	2026	0+3 0+3	2027 Otr 4	0+-2 0+-2
230 21.DES.TC.10.	Prepare and Submit Temporary Rock Support System for Tunnel to	Complet 100%	91 days Fri 1	19/5/23 Tu	e 5/9/23	0 days	gtr 4 Qtr 1 Qtr 2 Qtr 3 Qtr 4 Qtr 1	Qtr2 Qtr3 Qtr4 Qtr	I Qtr 2 Qtr 3	Qtr 4 Qtr I	Qtr 2 Qtr 3	Qtr 4 Qtr I	Qtr 2 Qtr 3
231 21.DES.TC.10:	GEO & Binnies for Acceptance GEO & Binnies Review Design and Comment on Temporary Rock	100%	18 days Wed	ed 6/9/23 Tue	e 26/9/23	0 days	-						
232 21.DES.TC.10:	Support System for Tunnel Type T2 Revise and Resubmit the Temporary Rock Support System for Tunnel	100%	40 days Wed	d 27/9/23 We	ed 15/11/23	0 days	_						
233 21.DES.TC.10:	GEO & Binnies Review and Accept the Temporary Rock Support System to Tulmer				5/1/24	0 days							
	for Tunnel Type T2		·										
234 24 PEC TC 10	Permanent Rock Support System for Tunnel Type T2		190 days Fri 1		5/1/24	0 days							
235 21.DES.TC.10	Prepare and Submit Permanent Rock Support System for Tunnel to GEO & Binnies for Acceptance	100%	67 days Fri 1	19/5/23 Tu	e 8/8/23	0 days							
236 21.DES.TC.10	GEO & Binnies Review Design and Comment on Permanent Rock Support System for Tunnel Type T2	100%	42 days Wed	ed 9/8/23 Tue	e 26/9/23	0 days	_						
237 21.DES.TC.10	Revise and Resubmit the Permanent Rock Support System for Tunne	100%	40 days Wed	ed 27/9/23 We	ed 15/11/23	0 days	_						
238 21.DES.TC.10	GEO & Binnies Review and Accept the Permanent Rock Support Syste for Tunnel Type T2	em 100%	41 days Thu	ı 16/11/23 Fri	5/1/24	0 days	_						
239	Temporary Rock Support System for Caverns	0%	96 days Sat 1	1/6/24 Tu	e 24/9/24	80.6 days							
240 21.DES.TC.10:	Prepare and Submit Temporary Rock Support System for Caverns to	0%	36 days Sat 1	1/6/24 Mo	on 15/7/24	80.6 days		_					
241 21.DES.TC.10:	GEO & Binnies for Acceptance GEO & Binnies Review Design and Comment on Temporary Rock	0%	18 days Tue	e 16/7/24 Mo	on 5/8/24	80.6 days		_					
242 21.DES.TC.10:	Support System for Caverns Revise and Resubmit the Temporary Rock Support System for Cavern	s 0%	24 days Tue	6/8/24 Mc	on 2/9/24	80.6 days		_					
243 21.DES.TC.10:	GEO & Binnies Review and Accept the Temporary Rock Support System of Cavern		18 days Mon			80.6 days							
	for Caverns		·										
244 24 PEC TC 10	Permanent Rock Support System for Caverns		96 days Tue			56.6 days							
245 21.DES.TC.10	Prepare and Submit Permanent Rock Support System for Caverns to GEO & Binnies for Acceptance	0%	36 days Tue	e 2/1/24 Mo	on 12/8/24	56.6 days							
246 21.DES.TC.10	GEO & Binnies Review Design and Comment on Permanent Rock	0%	18 days Tue	e 13/8/24 Mo	on 2/9/24	56.6 days		=					
247 21.DES.TC.10	Support System for Caverns Revise and Resubmit the Permanent Rock Support System for Caverr	ıs 0%	24 days Mon	in 2/9/2/1	ed 2/10/24	56.6 days		_					
247 21.DES.TC.10	GEO & Binnies Review and Accept the Permanent Rock Support System for Caverr		18 days Wed			56.6 days							
	for Caverns							_					
249	Temporary Rock Support System for Junction between Caverns and Tu					80.6 days							
250 21.DES.TC.10:	Prepare and Submit Temporary Rock Support System for Junction between Caverns and Tunnel to GEO & Binnies for Acceptance	0%	36 days Sat 1	1/6/24 Mo	on 15/7/24	80.6 days		_					
251 21.DES.TC.10:	GEO & Binnies Review Design and Comment on Temporary Rock	0%	18 days Tue	e 16/7/24 Mo	on 5/8/24	80.6 days		_					
252 21.DES.TC.10:	Support System for Junction between Caverns and Tunnel Revise and Resubmit the Temporary Rock Support System for Junctic	n 0%	24 days Tue	6/8/2/1 Mc	on 2/9/24	80.6 days							
232 21.DL3.TC.10.	between Caverns and Tunnel	076	24 days Tue	0/0/24	011 2/ 3/ 24	oo.o days		_					
253 21.DES.TC.10:	GEO & Binnies Review and Accept the Temporary Rock Support Syste for Junction between Caverns and Tunnel	em 0%	18 days Mon	n 2/9/24 Tu	e 24/9/24	80.6 days		-					
254	Permanent Rock Support System for Junction between Caverns and To				1 1	56.6 days							
255 21.DES.TC.10	Prepare and Submit Permanent Rock Support System for Junction between Caverns and Tunnel to GEO & Binnies for Acceptance	0%	36 days Tue	e 2/7/24 Mo	on 12/8/24	56.6 days		_					
256 21.DES.TC.10	GEO & Binnies Review Design and Comment on Permanent Rock Support System for Junction between Caverns and Tunnel	0%	18 days Tue	e 13/8/24 Mo	on 2/9/24	56.6 days		-					
257 21.DES.TC.10	Revise and Resubmit the Permanent Rock Support System for Junction	on 0%	24 days Mon	n 2/9/24 We	ed 2/10/24	56.6 days		_					
258 21.DES.TC.10	between Caverns and Tunnel GEO & Binnies Review and Accept the Permanent Rock Support Syste	am 0%	18 days Wed	d 2/10/24 The	u 24/10/24	56.6 days							
250 21.013.16.10	for Junction between Caverns and Tunnel	.111 070	10 days VVCd	.u 2/10/24	u 24/10/24	30.0 day3		_					
259	Internal Structures - Tunnels		140 days Wed			11.8 days		-	- 1				
260 21.DES.TC.10	Prepare and Submit Internal Structures - Tunnels to GEO & Binnies fo Acceptance	or 0%	56 days Wed	d 2/10/24 Fri	6/12/24	311.8 days		_					
261 21.DES.TC.10	GEO & Binnies Review Design and Comment on Internal Structures -	Tur 0%	24 days Fri 6	6/12/24 Tu	e 7/1/25	311.8 days		_					
262 21.DES.TC.10	Revise and Resubmit the Internal Structures - Tunnels		36 days Tue		u 20/2/25	311.8 days		_					
263 21.DES.TC.10	GEO & Binnies Review and Accept the Internal Structures - Tunnels		24 days Thu			311.8 days			-				
264 21 DES TC 10	Internal Structures - Caverns Propage and Submit Internal Structures - Caverns Design to GEO &		140 days Wed			255.4 days			_				
265 21.DES.TC.10	Prepare and Submit Internal Structures - Caverns Design to GEO & Binnies for Acceptance	υ%	56 days Wed	u 2/10/24 Fri	6/12/24	255.4 days							
266 21.DES.TC.10	GEO & Binnies Review Design and Comment on Internal Structures -		24 days Fri 6			255.4 days		_					
267 21.DES.TC.10	Revise and Resubmit the Internal Structures - Caverns		36 days Tue			255.4 days			_				
268 21.DES.TC.10	GEO & Binnies Review and Accept the Internal Structures - Caverns		24 days Thu		1 1	255.4 days		<u> </u>	-				
269 21.DES.TC.10	Temporary Ventilation for Tunnel and Cavern Construction Prepare and Submit Temporary Ventilation Design for Tunnel and		204.8 days Fri 1 120.8 days Fri 1		i 19/7/24 on 8/4/24	-19 days 0 days							
21.DL3.TC.1U	Cavern Construction to Binnies for Acceptance	100%	120.0 uays FII I	1VIC	011 0/ 4/ 24	Juays		'					
271 21.DES.TC.10	Binnies Review Design and Comment on Temporary Ventilation for	79%	24 days Tue	e 9/4/24 Tu	e 7/5/24	-19 days		→					
272 21.DES.TC.10!	Tunnel and Cavern Construction Revise and Resubmit the Temporary Ventilation for Tunnel and Cave	rn 0%	36 days Wed	ed 8/5/24 The	u 20/6/24	-19 days		-					
273 21.DES.TC.10!	Construction GEO & Binnies Review and Accept the Temporary Ventilation for	0%	24 days Thu	ı 20/6/24 Fri	19/7/24	-19 days		_					
274	Tunnel and Cavern Construction Tunnel Temporary Drainage Plan	0%	80 days Sat 1	1/6/24 W	ed 4/9/24	-6.8 days							
275 21.DES.TC.10	Prepare and Submit Tunnel Temporary Drainage Plan to GEO & Binni		24 days Sat 1			-6.8 days							
	for Acceptance					-							
276 21.DES.TC.10	GEO & Binnies Review Design and Comment on Tunnel Temporary Drainage Plan	0%	24 days Tue	e 2/7/24 Mo	on 29/7/24	-6.8 days		_					
277 21.DES.TC.10!	Revise and Resubmit the Tunnel Temporary Drainage Plan	0%	8 days Tue	e 30/7/24 We	ed 7/8/24	-6.8 days							
278 21.DES.TC.10!	GEO & Binnies Review and Accept the Tunnel Temporary Drainage Pl	an 0%	24 days Thu	u 8/8/24 We		-6.8 days		_					
	Task Su	mmary		Inac	ctive Milestone	• • • • • • • • • • • • • • • • • • •	Duration-only Start-only	External Miles	tone 🔷	Critical Split			
Project: 21/WSD/21		•	•	_						·			
Revised Programme (Apr 202	24) Split Pro	oject Summa	ry 🔚	Inac	ctive Summarv	U	Manual Summary Rollup Finish-only	Deadline	◆	Progress			
Revised Programme (Apr 202 Date: 1 May 2024		oject Summa octive Task	ry		ctive Summary nual Task		Manual Summary Rollup Finish-only Manual Summary External Tasks	Deadline Critical	*	Progress Manual Progress			







Activity ID Task Name			Duration S	Start	Finish	Total Slack	2024 2025 2026 2027
68 SW-PAB-4394	Site Setup & Mobilisation of Plants	Complete 0%	3 days	Tue 15/4/25	Tue 22/4/25	81.2 days	r1 Qtr2 Qtr3 Qtr4 Qtr1 Qtr2 Qtr3 Qtr4 Qtr3 Qtr3 Qtr4 Qtr3 Qtr4
69 SW-PAB-4395	Driving of Pipe Pile (355 DIA) (Total: 28 nos.)(PR=1 piles/day/rig)	0%	28 days	Tue 22/4/25	Mon 26/5/25	81.2 days	
70 SW-PAB-4400	Soil Excavation to +75.75 mPD and Lagging Wall Construction	0%	12 days	Mon 26/5/25	Tue 10/6/25	81.2 days	
71 SW-PAB-441C	Installation of 7th Layer of Wailing and Strut at +76.25mPD	0%	24 days	Tue 10/6/25	Wed 9/7/25	81.2 days	
72 SW-PAB-442C	Soil Excavation to +73.4 mPD (FEL), Blinding and Lagging Wall	0%	15 days	Wed 9/7/25	Fri 25/7/25	81.2 days	
73	Construction Southern Side of PAB (Zone C)	0%	98 days 1	Tuo 7/1/25	Fri 9/5/25	71.2 days	
74	Site Setup & Mobilisation of plants		5 days		Mon 13/1/25	71.2 days	
75 SW-PAB-4050	Driving of Pipe Pile (610 DIA) (Total: 75 nos.)(PR=1 piles/day/rig)			Mon 13/1/25	Mon 14/4/25	71.2 days	· · · · · · · · · · · · · · · · · · ·
76 SW-PAB-4060	Excavation to +73.4 mPD (FEL), Blinding and Lagging Wall Construction			Mon 14/4/25	Fri 9/5/25	71.2 days	
	ructure Works		309.4 days F		Tue 19/5/26	71.2 days	
	Foundation Works	0%	111 days F	Fri 9/5/25	Wed 17/9/25	71.2 days	· · · · · · · · · · · · · · · · · · ·
79 SW-PAB-4270	Construction of Raft Footing Slab (Southern) (Zone C)		18 days F		Fri 30/5/25	71.2 days	
80 SW-PAB-4280	Construction of Retaining Wall RW1 and RW2	0%	30 days F	Fri 30/5/25	Mon 7/7/25	98.2 days	
SW-PAB-4290	Construction of Raft Footing Slab (Western) (Zone A)	0%	36 days	Thu 7/8/25	Wed 17/9/25	71.2 days	
32 SW-PAB-4300	Construction of Raft Footing Slab (Eastern) (Zone B)	0%	30 days 5	Sat 26/7/25	Fri 29/8/25	81.2 days	
33	Building Structure - Grid No. U - BB (Western)	0%	198.4 days	Thu 18/9/25	Tue 19/5/26	71.2 days	
4 SW-PAB-S300	Commencement of Building Superstructure	0%	0 days	Tue 23/9/25	Tue 23/9/25	85.4 days	♦ 23/9
5 SW-PAB-S200	Installation of Tower Crane	0%	5 days T	Thu 18/9/25	Tue 23/9/25	71.2 days	
66 SW-PAB-S301	Column, Beam & Floor Slab @ Ground Floor +78mPD (from Pile Cap	0%	35 days	Wed 24/9/25	Tue 28/10/25	85.4 days	
7 SW-PAB-S302	@ +75mPD) incl. scaffold erection RC Column and RC Wall @ above Ground Floor	0%	26 days	Wed 29/10/25	Sun 23/11/25	85.4 days	
88 SW-PAB-S303	RC Beam & Floor Slab @ First Floor +84.25mPD incl. scaffold erection			Mon 24/11/25		85.4 days	
9 SW-PAB-S304	RC Column and RC Wall @ above First Floor			Mon 29/12/25		85.4 days	
90 SW-PAB-S305	RC Beam & Floor Slab @ Roof +91.5mPD incl. scaffold erection		-	Sat 24/1/26	Fri 27/2/26	85.4 days	
91 SW-PAB-S306	RC Column and RC Wall @ above Roof			Sat 28/2/26	Fri 13/3/26	85.4 days	
2 SW-PAB-S308	RC Stairs	0%	21 days	Sat 28/2/26	Fri 20/3/26	145.4 days	
93 SW-PAB-S307	Roof Canopy @ +95.8mPD incl. scaffold erection	0%	21 days	Sat 14/3/26	Fri 3/4/26	85.4 days	
94 SW-PAB-S309	Waterproofing works on roof	0%	18 days	Sat 2/5/26	Tue 19/5/26	85.4 days	
5	Building Structure - Grid No. BB - EE (Eastern)	0%	214.4 days	Sat 30/8/25	Tue 19/5/26	71.2 days	
6 SW-PAB-S400	Column, Beam & Floor Slab @ Ground Floor +78mPD (from Pile Cap	0%	35 days 5	Sat 30/8/25	Fri 3/10/25	97.4 days	
7 CW DAD C401	@ +75mPD) incl. scaffold erection	00/	26 days	Cat 4/10/25	Wad 20/10/25	07.4 days	
7 SW-PAB-S401 8 SW-PAB-S402	RC Column and RC Wall @ above Ground Floor RC Beam & Floor Slab @ First Floor +84.25mPD incl. scaffold erection		-	Sat 4/10/25	Wed 29/10/25 Wed 3/12/25	97.4 days 97.4 days	
9 SW-PAB-S403	RC Column and RC Wall @ above First Floor			Thu 30/10/25 Thu 4/12/25	Mon 29/12/25	97.4 days	
SW-PAB-S404	RC Beam & Floor Slab @ Roof +91.5mPD incl. scaffold erection			Tue 30/12/25	Mon 2/2/26	97.4 days	
1 SW-PAB-S405	RC Column and RC Wall @ above Roof			Tue 3/2/26	Mon 16/2/26	97.4 days	
2 SW-PAB-S407	RC Stairs			Tue 3/2/26	Mon 23/2/26	170.4 days	
3 SW-PAB-S406	Roof Canopy @ +95.8mPD incl. scaffold erection			Thu 12/2/26	Wed 4/3/26	97.4 days	
94 SW-PAB-S408	Installation of Photovoltaic Panel	0%		Thu 2/4/26	Sun 19/4/26	97.4 days	
05 SW-PAB-S409	Waterproofing works on roof	0%		Mon 20/4/26	Thu 7/5/26	97.4 days	
06 SW-PAB-S410	Complete RC Structure	0%		Tue 19/5/26	Tue 19/5/26	85.4 days	
)7 AB	BWF/ MEP/ FS/ Fitout Works	0%	331.6 days	Thu 4/12/25	Tue 12/1/27	71.2 days	
08	For Grid No. U - BB	0%	174.4 days	Mon 29/12/25	Wed 29/7/26	115.6 days	
9	G/F - Transformer Room & LV Switch Room	0%	153.4 days	Mon 29/12/25	Sun 5/7/26	115.6 days	
SW-PAB-A501	TR &LVSR - Falsework Removal/ Preparation for ABWF & MEP Wo	0%	35 days	Mon 29/12/25	Sun 1/2/26	142 days	
1 SW-PAB-A502	TR &LVSR - ABWF Deg1 - Deg3	0%	38 days	Mon 2/2/26	Wed 11/3/26	142 days	
2 SW-PAB-A503	TR &LVSR - BS 1st Fix - 3rd Fix	0%		Mon 16/2/26	Wed 25/3/26	142 days	_
SW-PAB-A504	TR &LVSR - CLP Inspection and Defect Rectification	0%		Thu 26/3/26	Mon 6/4/26	142 days	
SW-PAB-A505	TR &LVSR - Installation of Transformer and T&C by CLP			Tue 7/4/26	Sun 5/7/26	142 days	
5 SW-PAB-A506	TR &LVSR - Completion of CLP Cable Laying Leading to PAB			Wed 18/2/26	Fri 20/3/26	249.6 days	
SW-PAB-A507	TR &LVSR - Power-on Date	0%	-	Sun 5/7/26	Sun 5/7/26	142 days	<u>♦ 5/7</u>
7	1/F - Genset Room			Sat 28/2/26	Wed 29/7/26	96.6 days	
SW-PAB-A511	Genset Rm - Falsework Removal/ Preparation for ABWF & MEP W			Sat 28/2/26	Fri 3/4/26	118 days	
SW-PAB-A512	Genset Rm - Concrete Plinth, Waterproofing & Test		12 days S		Wed 15/4/26	118 days	<u> </u>
SW-PAB-A513	Floor Screeding, Wall Plastering & Doors & Wall Lining			Thu 16/4/26	Wed 13/5/26	118 days	
SW-PAB-A514	MEP Works			Thu 14/5/26	Wed 10/6/26	118 days	
SW-PAB-A515	Move-In Generator Equipments	0%		Thu 11/6/26	Wed 17/6/26	118 days	
CIALDAD VETT	Final Coat to Wall & Sealer to Floor Install Generator Equipments & Testing	0%	14 days 1 28 days 1	Thu 18/6/26	Wed 1/7/26 Wed 29/7/26	118 days	
	matan denerator Equipments & resuing			Mon 29/12/25		118 days 147.6 days	
SW-PAB-A517	Other Rooms		-Jan-uays			235 days	
SW-PAB-A517	Other Rooms G/F - Falsework Removal/ Preparation for ARWE & MEP Works		42 days	201 12/20	3411 0/2/20	235 days	
SW-PAB-A517 SW-PAB-A521	G/F - Falsework Removal/ Preparation for ABWF & MEP Works	0%	42 days N		Sun 19/4/26	200 00,3	
SW-PAB-A521 SW-PAB-A522	G/F - Falsework Removal/ Preparation for ABWF & MEP Works G/F - ABWF Deg1 - Deg3	0% 0%	70 days	Mon 9/2/26	Sun 19/4/26 Sun 3/5/26	235 days	
SW-PAB-A521 SW-PAB-A522 SW-PAB-A522 SW-PAB-A525	G/F - Falsework Removal/ Preparation for ABWF & MEP Works	0% 0%	70 days N	Mon 9/2/26 Mon 23/2/26	Sun 3/5/26	235 days 174 days	
4 SW-PAB-A517 5 SW-PAB-A521 7 SW-PAB-A522 8 SW-PAB-A523 9 SW-PAB-A524	G/F - Falsework Removal/ Preparation for ABWF & MEP Works G/F - ABWF Deg1 - Deg3 G/F - BS 1st Fix - 3rd Fix	0% 0% 0% 0%	70 days M 70 days M 42 days S	Mon 9/2/26		174 days	<u> </u>
4 SW-PAB-A517 5 SW-PAB-A521 7 SW-PAB-A522 8 SW-PAB-A523 9 SW-PAB-A524 0 SW-PAB-A525	G/F - Falsework Removal/ Preparation for ABWF & MEP Works G/F - ABWF Deg1 - Deg3 G/F - BS 1st Fix - 3rd Fix 1/F - Falsework Removal/ Preparation for ABWF & MEP Works	0% 0% 0% 0% 0%	70 days M 70 days M 42 days S 70 days S	Mon 9/2/26 Mon 23/2/26 Sat 28/2/26	Sun 3/5/26 Fri 10/4/26		
4 SW-PAB-A517 5 SW-PAB-A521 7 SW-PAB-A522 8 SW-PAB-A523 9 SW-PAB-A524 0 SW-PAB-A525 1 SW-PAB-A526	G/F - Falsework Removal/ Preparation for ABWF & MEP Works G/F - ABWF Deg1 - Deg3 G/F - BS 1st Fix - 3rd Fix 1/F - Falsework Removal/ Preparation for ABWF & MEP Works 1/F - ABWF Deg1 - Deg3	0% 0% 0% 0% 0% 0%	70 days N 70 days N 42 days S 70 days S 70 days S	Mon 9/2/26 Mon 23/2/26 Sat 28/2/26 Sat 11/4/26	Sun 3/5/26 Fri 10/4/26 Fri 19/6/26 Fri 3/7/26	174 days 174 days	
4 SW-PAB-A517 5 SW-PAB-A521 7 SW-PAB-A522 8 SW-PAB-A523 9 SW-PAB-A524 0 SW-PAB-A525 1 SW-PAB-A526	G/F - Falsework Removal/ Preparation for ABWF & MEP Works G/F - ABWF Deg1 - Deg3 G/F - BS 1st Fix - 3rd Fix 1/F - Falsework Removal/ Preparation for ABWF & MEP Works 1/F - ABWF Deg1 - Deg3 1/F - BS 1st Fix - 3rd Fix	0% 0% 0% 0% 0% 0%	70 days N 70 days N 42 days S 70 days S 70 days S	Mon 9/2/26 Mon 23/2/26 Sat 28/2/26 Sat 11/4/26 Sat 25/4/26	Sun 3/5/26 Fri 10/4/26 Fri 19/6/26 Fri 3/7/26	174 days 174 days 174 days	
4 SW-PAB-A517 5 SW-PAB-A521 7 SW-PAB-A522 8 SW-PAB-A525 9 SW-PAB-A524 0 SW-PAB-A525 1 SW-PAB-A526	G/F - Falsework Removal/ Preparation for ABWF & MEP Works G/F - ABWF Deg1 - Deg3 G/F - BS 1st Fix - 3rd Fix 1/F - Falsework Removal/ Preparation for ABWF & MEP Works 1/F - ABWF Deg1 - Deg3 1/F - BS 1st Fix - 3rd Fix	0% 0% 0% 0% 0% 0%	70 days N 70 days N 42 days S 70 days S 70 days S	Mon 9/2/26 Mon 23/2/26 Sat 28/2/26 Sat 11/4/26 Sat 25/4/26	Sun 3/5/26 Fri 10/4/26 Fri 19/6/26 Fri 3/7/26	174 days 174 days 174 days	
3 SW-PAB-A516 4 SW-PAB-A517 5 6 SW-PAB-A521 7 SW-PAB-A522 8 SW-PAB-A522 9 SW-PAB-A522 0 SW-PAB-A522 1 SW-PAB-A526 2 sw-PAB-A526 3 sw-PAB-A526 2 sw-PAB-A526 3 sw-PAB-A526 3 sw-PAB-A526 4 sw-PAB-A526 3 sw-PAB-A526 4 sw-PAB-A526 5 sw-PAB-A526 5 sw-PAB-A526 5 sw-PAB-A526 5 sw-PAB-A526 6 sw-PAB-A526	G/F - Falsework Removal/ Preparation for ABWF & MEP Works G/F - ABWF Deg1 - Deg3 G/F - BS 1st Fix - 3rd Fix 1/F - Falsework Removal/ Preparation for ABWF & MEP Works 1/F - ABWF Deg1 - Deg3 1/F - BS 1st Fix - 3rd Fix For Grid No. BB - EE	0% 0% 0% 0% 0% 0%	70 days N 70 days S 42 days S 70 days S 70 days S 132.6 days N	Mon 9/2/26 Mon 23/2/26 Sat 28/2/26 Sat 11/4/26 Sat 25/4/26	Sun 3/5/26 Fri 10/4/26 Fri 19/6/26 Fri 3/7/26 Sun 17/5/26	174 days 174 days 174 days	

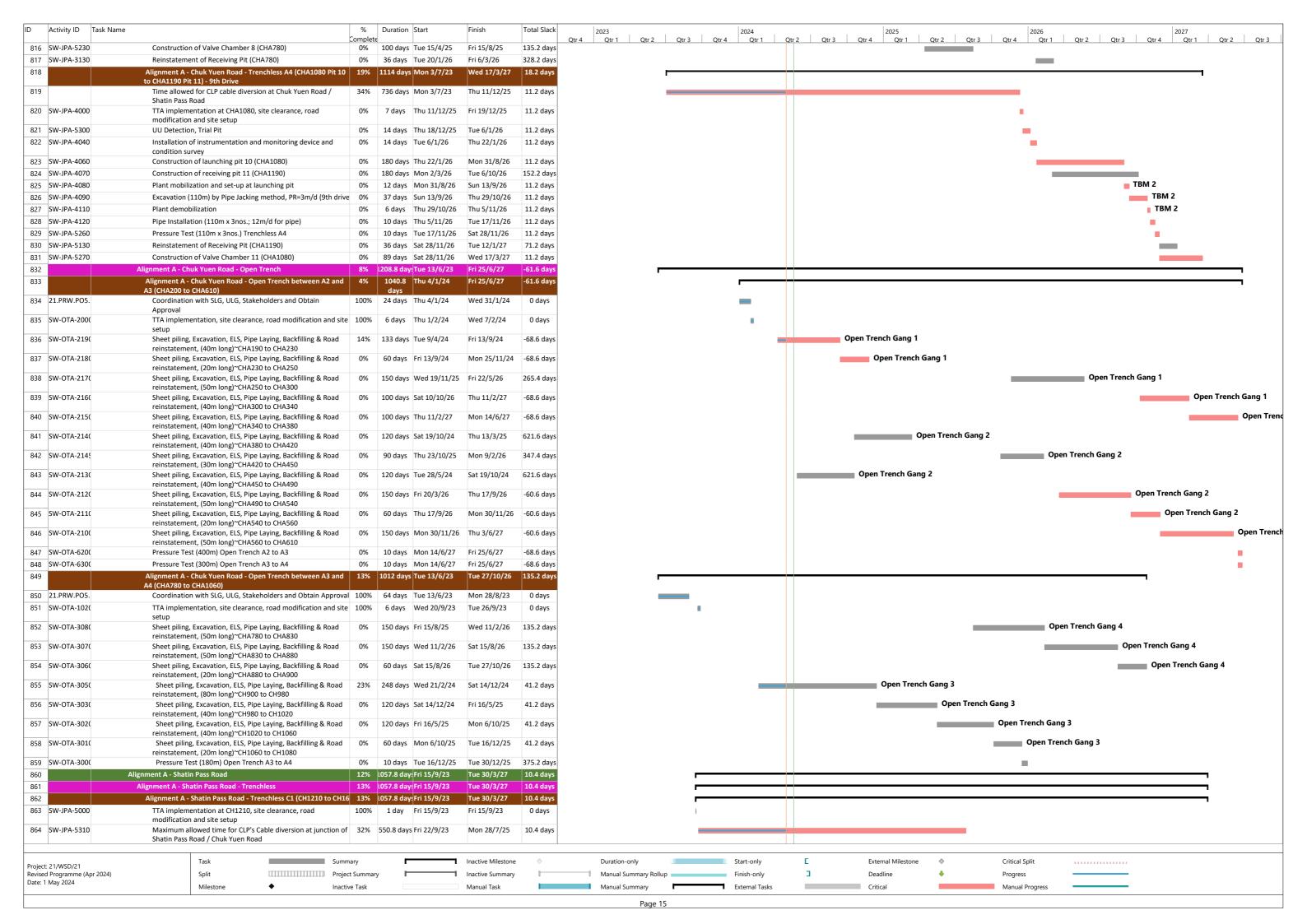
Activity ID Task Name	2		Duration	Start	Finish	Total Slack	2023	2025 2026 2027
	G/F - FS Water Tank & FS Pump Room	Complete 0% 1	LO3.6 days	Thu 4/12/25	Sat 11/4/26	184.4 days	Qtr 4 Qtr 1 Qtr 2 Qtr 3 Qtr 4 Qtr 1	Qtr 2 Qtr 3 Qtr 4 Qtr 1 Qtr 2 Qtr 3 Qtr 4 Qtr 1 Qtr 2 Qtr 3 Qtr 4 Qtr 1 Qtr 2
SW-PAB-A601	FS Water Tank & Pump Rm - Falsework Removal/ Preparation for	0%	35 days	Thu 4/12/25	Wed 7/1/26	227 days		
	ABWF & MEP Works			_, _,,,				
SW-PAB-A602	FS Water Tank & Pump Rm - Waterproofing & Testing			Thu 8/1/26	Wed 21/1/26	227 days		
SW-PAB-A603	FS Water Tank & Pump Rm - Plastering Works Inside Tank			Thu 22/1/26	Wed 4/2/26	227 days		
7 SW-PAB-A604	FS Water Tank & Pump Rm - Wall and Floor Tiling Works			Thu 5/2/26	Wed 25/2/26	227 days		
SW-PAB-A605	FS Water Tank & Pump Rm - Install Equipment			Thu 26/2/26	Sat 11/4/26	227 days		
9 SW-PAB-A606	FS Water Tank & Pump Rm - Install Cat Ladder & Hatch Cover			Thu 2/4/26	Sat 11/4/26	227 days		
)	Other Rooms			Thu 4/12/25	Sun 17/5/26	186.4 days		
1 SW-PAB-A611	G/F - Falsework Removal/ Preparation for ABWF & MEP Works			Thu 4/12/25	Wed 14/1/26	260 days		
2 SW-PAB-A612	G/F - ABWF Deg1 - Deg3			Thu 15/1/26	Wed 25/3/26	260 days		
3 SW-PAB-A613	G/F - BS 1st Fix - 3rd Fix			Thu 29/1/26	Wed 8/4/26	260 days		
4 SW-PAB-A61 ²	1/F - Falsework Removal/ Preparation for ABWF & MEP Works			Tue 3/2/26	Wed 4/3/26	221 days		
5 SW-PAB-A615	1/F - ABWF Deg1 - Deg3			Thu 5/3/26	Sun 3/5/26	221 days		
6 SW-PAB-A616	1/F - BS 1st Fix - 3rd Fix			Thu 19/3/26	Sun 17/5/26	221 days		
7	External Works			Wed 4/2/26	Tue 12/1/27	71.2 days		
8 SW-PAB-E100	Underground Utilities Works, Drainage Works, Watermain Works &	0%	100 days	Wed 4/2/26	Tue 9/6/26	71.2 days		
9 SW-PAB-E101	Testing at the Periphery of PAB Backfilling to Ground Level	0%	30 days	Wed 10/6/26	Thu 16/7/26	117.2 days		<u> </u>
0 SW-PAB-E102	Site preparation and erect external falsework around building			Thu 16/7/26	Thu 30/7/26	117.2 days		
1 SW-PAB-E103	Extenal wall plastering/ painting works			Thu 30/7/26	Thu 27/8/26	117.2 days 165.2 days		"_
2 SW-PAB-E104	External wall plastering/ painting works External wall tiles			Thu 30/7/26	Thu 27/8/26	165.2 days		
3 SW-PAB-E104				Thu 27/8/26	Fri 18/9/26			
4 SW-PAB-E106	Install Metal Doors, Roller Shutter, Cat-Ladder and Metal Railings				Fri 18/9/26	165.2 days		
	Install Steel Claddings, Ventilation Louvres, External Ceiling Construction of vehicular road			Thu 27/8/26		117.2 days		
5 SW-PAB-E107				Fri 18/9/26	Fri 13/11/26	120.2 days		
6 SW-PAB-E108	Install Bi-folding gate, security fenece, footpath, boundary wall			Fri 18/9/26		117.2 days		
7 SW-PAB-E109	Underground Utilities Works, Drainage Works, Watermain Works & Testing along Lion Rock Park Access Road	0%	το∩ aaλs	Wed 10/6/26	Tue 12/1/27	71.2 days		
8 SW-PAB-E110	Complete External Works	0%	0 days	Tue 12/1/27	Tue 12/1/27	71.2 days		→ 12/1
9	Testing and Commisioning	0%	70.8 days	Thu 30/7/26	Thu 22/10/26	98.8 days		
0 SW-PAB-T100	1A - West Fire Sta - Testing and Commissioning (FS - Related)	0%	18 days	Thu 30/7/26	Sun 16/8/26	118 days		
1 SW-PAB-T200	1A - West Fire Sta - Testing and Commissioning (Non FS - Related)		67 days	Mon 17/8/26	Thu 22/10/26	130 days		
2	Landscaping and Architectural Roof			Wed 4/3/26		169.2 days		
3 A1000	Construction of Gabion Wall			Wed 4/3/26	Wed 6/5/26	242.6 days		
4 A1030	Tree Transplant near Gabion Wall			Tue 31/3/26	Fri 5/6/26	242.6 days		
5 A1040	Installation of Landscape Fence			Fri 5/6/26	Sat 20/6/26	242.6 days		
6 A1050	Architectural Roof hardwork			Wed 20/5/26	Mon 14/9/26	169.2 days		
7 A1060	Architectural Roof softwork and Tree transplant			Thu 18/6/26	Mon 17/8/26	194.2 days		
8	Statutory Approval & Inspection			Fri 1/5/26		91.8 days		
9	WSD Inspection			Fri 1/5/26	Tue 3/11/26	96.6 days		
0 SW-PAB-8000	Submit WWO 46 Part IV (PD) and Wait for Inspection by WSD		•	Fri 1/5/26	Thu 4/6/26	200 days		
1 SW-PAB-8010	Inspection and Re-inspection by WSD (PD) (including water test)			Fri 5/6/26	Thu 23/7/26	200 days		<u> </u>
2 SW-PAB-8020	Issuance Period of WWO 46 Part V (PD)			Fri 24/7/26	Thu 13/8/26	200 days		
3 SW-PAB-8030	Obtain WWO 46 Part V (PD) by WSD	0%		Thu 13/8/26	Thu 13/8/26	200 days		♦ 13/8
4 SW-PAB-7010	Inspection and Re-inspection by WSD (FS)			Mon 17/8/26	Tue 13/10/26	118 days		
5 SW-PAB-7020	Issuance Period of WWO 46 Part V (FS)			Wed 14/10/26		118 days		
6 SW-PAB-7030	Obtain WWO 46 Part V (FS) by WSD			Tue 3/11/26	Tue 3/11/26	118 days		→ 3/11
7 SW-PAB-7000	Submit WWO 46 Part IV (FS) and Wait for Inspection by WSD			Mon 13/7/26	Sun 16/8/26	118 days		
					Tue 15/12/26			
8 SW-PAR-9000	FSD and OP Inspection Submit Form 214 / FSISO1 and Wait for Inspection by ESD					91.8 days		
9 SW-PAB-9000	Submit Form 314 / FSI501 and Wait for Inspection by FSD			Mon 17/8/26		176 days		
0 SW-PAB-9010	FS Inspection and Re-inspection			Wed 2/12/26	Tue 1/12/26	118 days		
1 SW-PAB-9020	Issue Fire Certificate (FS172)			Wed 2/12/26		118 days		→ 15/12
2 SW-PAB-9030	Obtain Fire Certificate (FS172) by FSD			Tue 15/12/26		118 days		♦ 13/12
	cular Access Tunnel			Fri 9/12/22		-11.4 days		
	unnel Works CH 0 - 24 by Cut and Cover Method			Fri 9/12/22	Wed 4/3/26	206 days	. 9/12	
5 SW WAT 1000	Preliminary Works			Fri 9/12/22	Fri 9/12/22	0 days	♦ 9/12 • 9/12	
6 SW-VAT-1000	Access to Portion 1			Fri 9/12/22	Fri 9/12/22	0 days	♦ 9/12	
7 514 147 4546	Structure Works			Sat 4/10/25	Wed 4/3/26	206 days		
8 SW-VAT-1510	Construction of temporary wall, waterproofing layer and wall (Total: 960m3, 8bays (10x10), PR= 12d/bay)	: 0%	48 days	Sat 4/10/25	Mon 1/12/25	206 days		
9 SW-VAT-1520	Erection of working platform	0%	21 davs	Mon 1/12/25	Sat 27/12/25	206 days		_
0 SW-VAT-1530	Construction of top slab (Total: 792m3, 4bays(10x16.5), PR =			Sat 27/12/25	Sat 24/1/26	206 days		
	12d/bay, 2workfront)		,0	,,	, _, _,			_
1 SW-VAT-1540	Backfilling to existing level	0%	30 days	Sat 24/1/26	Wed 4/3/26	206 days		
	unnel Works CH 24 - 697.8 & Caverns (5no.) by Mechanical Break &	0%	852 days	Sat 22/6/24	Mon 26/4/27	-44.8 days		
	rill & Blast Method	22/	00 :	C + 22 /2/= :	mi colota	025 :		
3 SW-VAT-2060	Application of CNP to extend working hours (7 work days/week) in Tunnel & Cavern	0%	90 days	Sat 22/6/24	Thu 19/9/24	935 days		
4 SW-VAT-2001	Pre-excavation grouting (with Dextra self-drilling piping system)	0%	17 days	Tue 6/8/24	Sat 24/8/24	-81.8 days		
	Installation of Face Nail Support in Top Heading			Tue 6/8/24	Sat 24/8/24 Sat 10/8/24	-69.8 days		
		070	Juuys	. 40 0/0/24	501 10/0/24	03.0 uays		
5 SW-VAT-2002								
	Task Summ	mary			Inactive Milestone	\Diamond	Duration-only Start-only	External Milestone ♦ Critical Split
ject: 21/WSD/21 ised Programme (Apr 2024) e: 1 May 2024	Task Summ	-			Inactive Milestone Inactive Summary	•	Duration-only Start-only Manual Summary Rollup Finish-only	Critical Split ☐ Deadline Progress ———

Activity ID Ta	ark Nama	%	Duration	Stort	Finish	Total Slack	
Activity ID Ta	SK Name	Complete	Duration	Start	FIIIISII	TOTAL SIACK	2023 2024 2025 2026 2027 Qtr 4 Qtr 1 Qtr 2 Qtr 3 Qtr 4 Q
96 SW-VAT-200	Installation of remaining raking struts	0%		Sun 18/8/24	Sat 24/8/24	786.6 d	
97 SW-VAT-2003	Flame Cut Slots in Pipe Piles for Canopy Tube Installation	0%		Sat 24/8/24	Fri 30/8/24	-81.8 days	
98 SW-VAT-2004	Double Layer Canopy Tube (18m length) Installation & Grouting	0%		Fri 30/8/24	Thu 26/9/24	-81.8 days	
99 SW-VAT-200	Removal of 3rd Layer of Struts	0%		Thu 19/9/24	Thu 26/9/24	759.6 d	
00 SW-VAT-2005	Installation of Portal Frame	0%		Thu 26/9/24	Fri 27/9/24	-81.8 days	
01 SW-VAT-2006	Part Removal of Pipe Piles for TL & Shotcreting for Quadrant 1	0%	-	Fri 27/9/24	Wed 2/10/24	-81.8 days	
502	Tunnel Works CH24 to CH74 by Initial Mechanical Excavation			Wed 2/10/24	Thu 21/8/25	-81.8 days	ı
03 SW-VAT-3200	Initial Mechanical Excavation - Top Heading Left - CH24 to CH74		52 days	Wed 2/10/24	Mon 2/12/24	-81.8 days	
04 SW-VAT-3205	(1m/day) (incl. 2d for Double Layer Canopy Tube (6m) Installation at Part Removal of Pipe Piles for TL & Shotcreting for Quadrant 2		3 days	Sat 26/10/24	Wed 30/10/24	623.6 days	
505 SW-VAT-3210	Initial Mechanical Excavation - Top Heading Right - CH24 to CH74	0%		Wed 30/10/24		623.6 days	
300-VAI-3210	(1m/day)	0%	30 uays	weu 30/10/24	341 20/12/24	023.0 uays	
06 SW-VAT-3220	Excavation of Backfill Material inside the Cut and Cover Tunnel	0%	34 days	Wed 21/5/25	Wed 2/7/25	530.6 days	
	Cofferdam - Bottom Bench Left						
507 SW-VAT-3215	Excavation of Backfill Material inside the Cut and Cover Tunnel	0%	3 days	Wed 2/7/25	Sat 5/7/25	530.6 days	
508 SW-VAT-3230	Cofferdam - Bottom Bench Left Initial Mechanical Excavation - Bottom Bench Right - CH74 to CH24	0%	24 days	Thu 10/7/25	Mon 18/8/25	489.6 days	
300 3VV-VAT-323C	(1.5m/day)	0%	54 uays	111u 10/7/25	101011 10/0/23	409.0 uays	
509 SW-VAT-3225	Excavation of Backfill Material inside the Cut and Cover Tunnel	0%	3 days	Tue 19/8/25	Thu 21/8/25	489.6 days	
	Cofferdam - Bottom Bench Right						
10	Tunnel Works CH74 to CH276 by Mechanical Excavation & Drill & Blast		•		Fri 19/12/25	-81.8 days	
11 SW-VAT-3235	Pre-excavation Grouting at CH74 to CH104	0%		Mon 2/12/24	Tue 3/12/24	-81.8 days	
12 SW-VAT-3240	Mechanical Excavation - Top Heading Left - CH74 to CH133 (1m/day)) 0%		Tue 3/12/24	Sat 15/2/25	-81.8 days	
13 SW-VAT-3250	Mechanical Excavation - Top Heading Right - CH74 to CH133 (1m/day	y 0%	59 days	Sat 28/12/24	Tue 11/3/25	623.6 days	
514 SW-VAT-3900	Mechanical Excavation - Full Heading - CH133 to CH175 (1.2m/day)	0%	35 days	Sat 15/2/25	Fri 28/3/25	-81.8 days	
515 SW-VAT-3910	Mechanical Excavation - Full Heading - CH175 to CH276 (1.2m/day)	0%	85 days	Fri 28/3/25	Mon 14/7/25	-81.8 days	
516 SW-VAT-3260	Mechanical Excavation - Bottom Bench Left - CH133 to CH110 (1m/da	d: 0%	23 days	Fri 28/3/25	Mon 28/4/25	489.6 days	
517 SW-VAT-3270	Mechanical Excavation - Bottom Bench Left - CH110 to CH74 (2m/day	0%	18 days	Mon 28/4/25	Wed 21/5/25	489.6 days	
518 SW-VAT-3280	Mechanical Excavation - Bottom Bench Right - CH133 to CH110 (1m/	0%	23 days	Wed 21/5/25	Wed 18/6/25	489.6 days	
519 SW-VAT-3290	Mechanical Excavation - Bottom Bench Right - CH110 to CH74 (2m/d	d 0%	18 days	Wed 18/6/25	Thu 10/7/25	489.6 days	
620 SW-VAT-3920	D&B Excavation - Bottom Bench Left - CH276 to CH133 (3.5m/day)	0%	41 days	Fri 12/9/25	Sat 1/11/25	85.6 days	
521 SW-VAT-3930	D&B Excavation - Bottom Bench Right - CH276 to CH133 (3.5m/day)	0%	41 days	Sat 1/11/25	Fri 19/12/25	85.6 days	
22	Tunnel Works CH276 to CH286 by Drill & Blast Excavation (Initial)	0%	97 days	Fri 28/3/25	Sat 26/7/25	-32.8 days	
23 SW-VAT-3080	Blast Door - Erect Steel Frame	0%	21 days	Fri 28/3/25	Fri 18/4/25	-37.8 days	
24 SW-VAT-3090	Blast Door - Install Blast Door	0%	14 days	Fri 18/4/25	Fri 2/5/25	-37.8 days	
525 SW-VAT-3100	Blast Door - Inspection by Mines Dept.	0%		Fri 2/5/25	Fri 9/5/25	-37.8 days	
526 SW-VAT-3280	D&B Excavation - Top Heading Left - CH276 to CH286 (3m/day)	0%		Mon 14/7/25	Fri 18/7/25	-81.8 days	
527 SW-VAT-3290	D&B Excavation - Top Heading Right - CH276 to CH286 (3m/day)	0%		Mon 14/7/25	Fri 18/7/25	85.6 days	
528 SW-VAT-3300	D&B Excavation - Bottom Bench Left - CH276 to CH286 (3m/day)	0%		Fri 18/7/25	Tue 22/7/25	85.6 days	
629 SW-VAT-3310	D&B Excavation - Bottom Bench Right - CH276 to CH286 (3m/day)			Wed 23/7/25		137.6 days	
630	Tunnel Works CH286 to CH337.15 by Drill & Blast Excavation			Fri 18/7/25		-81.8 days	· —
631 SW-VAT-3320	D&B Excavation - Top Heading Left - CH286 to CH337.15 (3m/day)			Fri 18/7/25	Thu 7/8/25	-81.8 days	<u> </u>
532 SW-VAT-3330	D&B Excavation - Top Heading Right - CH286 to CH337.15 (3m/day)			Fri 18/7/25	Thu 7/8/25	145.6 days	
633 SW-VAT-3340	D&B Excavation - Bottom Bench Left - CH286 to CH337.15 (3m/day)			Wed 23/7/25	Tue 12/8/25	99.6 days	
534 SW-VAT-3350	D&B Excavation - Bottom Bench Right - CH286 to CH337.15 (3m/day			Mon 28/7/25	Sat 16/8/25	137.6 days	
635 SW-VAT-3350	Tunnel Works CH337.15 to CH387.15 by Mechanical Excavation		-	Fri 8/8/25	Fri 21/11/25	-81.8 days	
536 SW-VAT-3355	Pre-excavation Grouting at CH360 to CH390	0%		Fri 8/8/25	Fri 8/8/25	-81.8 days	
637 SW-VAT-3360	Mechanical Excavation - Top Heading Left - CH337.15 to CH387.15 (1.2m/day)	0%	42 udys	Sat 9/8/25	Fri 26/9/25	-81.8 days	
638 SW-VAT-3370	Mechanical Excavation - Top Heading Right - CH337.15 to CH387.15	0%	42 days	Fri 8/8/25	Thu 25/9/25	145.6 days	
	(1.2m/day)						
639 SW-VAT-3380	Mechanical Excavation - Bottom Bench Left - CH337.15 to CH387.15	5 0%	42 days	Wed 13/8/25	Tue 30/9/25	99.6 days	
640 SW-VAT 2200	(1.2m/day) Mechanical Excavation - Bottom Bench Right - CH337 15 to	00/	42 dave	Thu 2/10/25	Fri 21/11/25	99 6 days	
640 SW-VAT-3390	Mechanical Excavation - Bottom Bench Right - CH337.15 to CH387.15 (1.2m/day)	U%	42 udys	Thu 2/10/25	Fri 21/11/25	99.6 days	
541	Tunnel Works CH387.15 to CH416 by Mechanical Excavation	0%	71 days	Fri 26/9/25	Sat 20/12/25	-80.8 days	
542 SW-VAT-3395	Pre-excavation Grouting at CH410 to CH440		-	Sat 27/9/25	Sat 27/9/25	-81.8 days	
543 SW-VAT-3400	Mechanical Excavation - Top Heading Left - CH387.15 to CH416			Mon 29/9/25	Thu 30/10/25	-81.8 days	
	(1.2m/day)			-, -,		, -	
644 SW-VAT-3410	Mechanical Excavation - Top Heading Right - CH387.15 to CH416	0%	25 days	Fri 26/9/25	Mon 27/10/25	145.6 days	
CAE CHANGE 5 := 5	(1.2m/day)	601	25 '	Th 2 /4 2 /5 =	C-+ 4 /4 : /0-	144.5	
545 SW-VAT-3420	Mechanical Excavation - Bottom Bench Left - CH387.15 to CH416 (1.2m/day)	0%	25 days	Thu 2/10/25	Sat 1/11/25	141.6 days	
646 SW-VAT-3430	(1.2m/day) Mechanical Excavation - Bottom Bench Right - CH387.15 to CH416	0%	25 days	Fri 21/11/25	Sat 20/12/25	99.6 days	
	(1.2m/day)						
547	Tunnel Works CH416 to CH456 by Drill & Blast Excavation	0%	12 days	Thu 30/10/25	Thu 13/11/25	-81.8 days	
548 SW-VAT-3440	D&B Excavation - Top Heading Expanding to Full Width and Height -	0%	12 days	Thu 30/10/25	Thu 13/11/25	-81.8 days	
1	CH416 to CH456 (3.5m/day)		48.1	TI 40/40/00		04.0	
140	Tunnel Works CH456 to CH506 by Drill & Blast Excavation				Mon 1/12/25	-81.8 days	
549		y 0%	-		Mon 1/12/25	-81.8 days	
550 SW-VAT-3470	D&B Excavation - Full Width and Height - CH456 to CH506 (3.5m/day			Mon 1/12/25	Fri 19/12/25	-81.8 days	
550 SW-VAT-3470 551	Tunnel Works CH506 to CH557 by Drill & Blast Excavation		•				
50 SW-VAT-3470 51 SW-VAT-3475	Tunnel Works CH506 to CH557 by Drill & Blast Excavation Pre-excavation Grouting at CH510 to CH540	0%	1 day	Mon 1/12/25		-81.8 days	
550 SW-VAT-3470 551 SW-VAT-3475 553 SW-VAT-3490	Tunnel Works CH506 to CH557 by Drill & Blast Excavation	0%	1 day		Tue 2/12/25 Fri 19/12/25	-81.8 days -81.8 days	
50 SW-VAT-3470 51 SW-VAT-3475	Tunnel Works CH506 to CH557 by Drill & Blast Excavation Pre-excavation Grouting at CH510 to CH540 D&B Excavation - Full Width and Height - CH506 to CH557 (3.5m/day	0% y 0%	1 day	Mon 1/12/25	Fri 19/12/25	-	
50 SW-VAT-3470 51 SW-VAT-3475 52 SW-VAT-3475 53 SW-VAT-3490 oject: 21/WSD/21	Tunnel Works CH506 to CH557 by Drill & Blast Excavation Pre-excavation Grouting at CH510 to CH540 D&B Excavation - Full Width and Height - CH506 to CH557 (3.5m/day Task Summ	0% y 0% mary	1 day 15 days	Mon 1/12/25	Fri 19/12/25 Inactive Milestone	-	Duration-only Start-only E External Milestone 🔷 Critical Split
550 SW-VAT-3470 551 SW-VAT-3475	Tunnel Works CH506 to CH557 by Drill & Blast Excavation Pre-excavation Grouting at CH510 to CH540 D&B Excavation - Full Width and Height - CH506 to CH557 (3.5m/day Task Summ Summ 2024) Split Project	0% y 0% mary	1 day 15 days	Mon 1/12/25	Fri 19/12/25 Inactive Milestone Inactive Summary	-	Duration-only Start-only E External Milestone ♦ Critical Split Manual Summary Rollup Finish-only 3 Deadline ♣ Progress
50 SW-VAT-3470 51 SW-VAT-3475 53 SW-VAT-3490 59 SW-VAT-3490 50 SW-VAT-3490 51 SW-VAT-3490	Tunnel Works CH506 to CH557 by Drill & Blast Excavation Pre-excavation Grouting at CH510 to CH540 D&B Excavation - Full Width and Height - CH506 to CH557 (3.5m/day Task Summ Summ 2024) Split Project	0% y 0% mary	1 day 15 days	Mon 1/12/25	Fri 19/12/25 Inactive Milestone	-	Duration-only Start-only E External Milestone 🔷 Critical Split

Activity ID Task Na	ame		Duration	Start	Finish	Total Slack	2023	2025 2026 2027 Qtr 2 Qtr 3 Qtr 4 Qtr 1 Qtr 2 Qtr 3 Qtr 4 Qtr 1 Qtr 2 Qtr 3 Qtr 4 Qtr 1 Qtr 2 Qtr 3 Qtr 4 Qtr 3 Qtr 4
	Tunnel Works CH557 to CH607 by Drill & Blast Excavation	Complete 0%	15 days	Fri 19/12/25	Thu 8/1/26	-81.8 days	r 4 Qtr 1 Qtr 2 Qtr 3 Qtr 4 Qtr 1	Qtr2 Qtr3 Qtr4 Qtr1 Qtr2 Qtr3 Qtr4 Qtr1 Qtr2 Qtr4 C
SW-VAT-3510	D&B Excavation - Full Width and Height - CH557 to CH607 (3.5m/da	ay 0%	15 days	Fri 19/12/25	Thu 8/1/26	-81.8 days		■ ·
5	Tunnel Works CH607 to CH645 by Drill & Blast Excavation			Thu 8/1/26	Wed 21/1/26	-81.8 days		п
SW-VAT-3530	D&B Excavation - Full Width and Height - CH607 to CH645 (3.5m/da Tunnel Works Cavern A (SWSR1) by Drill & Blast Excavation (CH527.0	,		Thu 8/1/26 Fri 12/12/25	Wed 21/1/26 Tue 5/5/26	-81.8 days		
) SW-VAT-3800	Junction Pre-support			Fri 12/12/25	Thu 18/12/25	-42.8 days		
SW-VAT-3570	D&B Excavation - Cavern A Top Heading - CHA00 to CHA22			Mon 29/12/25	Tue 6/1/26	-49.8 days		
SW-VAT-3580	(3.5m/day) (J2, Drained) D&B Excavation - Cavern A Top Heading - CHA22.0 to CHA92.0 (3.5)	im 0%	20 days	Tue 6/1/26	Thu 29/1/26	-49.8 days		_
SW-VAT-3585	D&B Excavation - Cavern A Top Heading - CHA92.0 to CHA125.428			Thu 29/1/26	Wed 25/2/26	-81.8 days		
SW VAT 2600	(3.5m/2 day cycle)	00/	24 days	Wod 11/2/26	F=: 10/4/26	01 0 dove		_
3 SW-VAT-3600	D&B Excavation - Cavern A Bottom Bench - CHA22 to CHA125.428 (25m/3 day cycle)	0%	24 days	Wed 11/3/26	Fri 10/4/26	-81.8 days		
SW-VAT-3610	D&B Excavation - Cavern A Bottom Bench - CHA6.774 to CHA22	0%	6 days	Fri 10/4/26	Fri 17/4/26	-81.8 days		
5 SW-VAT-3615	(25m/3 day cycle) (J2, Drained) Mucking Out	0%	14 days	Fri 17/4/26	Tue 5/5/26	-81.8 days		
5	Tunnel Works Cavern B (SWSR2) by Drill & Blast Excavation (CH567.	52 0%	140 days	Tue 30/12/25	Sat 20/6/26	-67.8 days		· · · · · · · · · · · · · · · · · · ·
SW-VAT-3810	Junction Pre-support	0%	5 days	Tue 30/12/25	Mon 5/1/26	-67.8 days		
3 SW-VAT-3630	D&B Excavation - Cavern B Top Heading - CHB00 to CHB23 (3.5m/day) (J2, Drained)	0%	7 days	Wed 21/1/26	Thu 29/1/26	-81.8 days		
SW-VAT-3640	D&B Excavation - Cavern B Top Heading - CHB23 to CHB121.595	0%	57 days	Fri 30/1/26	Mon 13/4/26	-51 days		
) SW-VAT-3650	(3.5m/2 day cycle) D&B Excavation - Cavern B Bottom Bench - CHB23 to CHB121.595	0%	24 days	Mon 27/4/26	Wed 27/5/26	-51 days		_
344-441-2030	(25m/3 day cycle)	0%	24 udys	14/1011 27/4/20	vveu 2//3/20	-51 days		
SW-VAT-3660	D&B Excavation - Cavern B Bottom Bench - CHB8.057 to CHB23	0%	6 days	Wed 27/5/26	Wed 3/6/26	-51 days		
2 SW-VAT-3665	(25m/3 day cycle) (J2, Drained) Mucking Out	0%	14 days	Wed 3/6/26	Sat 20/6/26	-51 days		
3	Tunnel Works Cavern C (FWSR1) by Drill & Blast Excavation (CH620.6		105 days	Sat 17/1/26	Thu 28/5/26	-34.8 days		
SW-VAT-3820	Junction Pre-support			Sat 17/1/26	Fri 23/1/26	-29.8 days		•
SW-VAT-3710	D&B Excavation - Cavern C Top Heading - CHC00 to CHC21 (3.5m/2 day cycle) (J2, Drained)	2 0%	12 days	Thu 29/1/26	Thu 12/2/26	-34.8 days		•
5 SW-VAT-3720	D&B Excavation - Cavern C Top Heading - CHC21 to CHC85.453	0%	37 days	Thu 12/2/26	Mon 30/3/26	-34.8 days		
7 SW-VAT-3730	(3.5m/2 day cycle) D&B Excavation - Cavern C Bottom Bench - CHC21 to CHC85.453	0%	18 days	Thu 16/4/26	Fri 8/5/26	-34.8 days		_
	(20m/3 day cycle)							
SW-VAT-3740	D&B Excavation - Cavern C Bottom Bench - CHC6.680 to CHC21 (20m/3 day cycle) (J2, Drained)	0%	6 days	Fri 8/5/26	Fri 15/5/26	-34.8 days		•
SW-VAT-3745	Mucking Out	0%	10 days	Fri 15/5/26	Thu 28/5/26	-34.8 days		
	Tunnel Works Cavern D (FWSR2) by Drill & Blast Excavation (CH645)			Wed 21/1/26	Fri 29/5/26	-48 days		
SW-VAT-3830	Junction Pre-support			Wed 21/1/26	Tue 27/1/26	-45 days		<u> </u>
2 SW-VAT-3750	D&B Excavation - Cavern D Top Heading - CHD00 to CHD16 (3.5m/2 day cycle) (J2, Drained)	2 0%	TO gays	Fri 30/1/26	Wed 11/2/26	-48 days		•
SW-VAT-3760	D&B Excavation - Cavern D Top Heading - CHD16 to CHD82.750	0%	39 days	Wed 11/2/26	Tue 31/3/26	-48 days		_
SW-VAT-3770	(3.5m/2 day cycle) D&B Excavation - Cavern D Bottom Bench - CHD16 to CHD82.750	0%	18 days	Fri 17/4/26	Sat 9/5/26	-48 days		_
	(20m/3 day cycle)							
SW-VAT-3780	D&B Excavation - Cavern D Bottom Bench - CHD00 to CHD16 (20m/ day cycle) (J2, Drained)	/3 0%	6 days	Sat 9/5/26	Sat 16/5/26	-48 days		
SW-VAT-3785	Mucking Out			Sat 16/5/26	Fri 29/5/26	-48 days		•
	Remaining Works			Mon 1/9/25	Mon 26/4/27	-11.4 days		T-
SW-VAT-3000	Manufacture of DfMA for compartment construction			Mon 1/9/25	Tue 3/3/26	153.6 days		
SW-VAT-3001 SW-VAT-3010	Delivery of DfMA for compartment construction [CH24-337.15] Construction of drainage layer, base slab, lower part			Tue 28/10/25 Fri 19/12/25	Tue 24/3/26 Thu 2/7/26	153.6 days 85.6 days		
	(276m from exc.) 313.15m, PR=12m/wk (157d)							
SW-VAT-3020	[CH24-337.15] Construction of RC Lining (min 24m from base slab + 2wk erection) 313.15m, PR=2m/d	+ 0%	169 days	Mon 19/1/26	Thu 13/8/26	85.6 days		
SW-VAT-3030	[CH24-337.15] Construction of compartment RHS (min 24m from	0%	157 days	Mon 16/2/26	Thu 27/8/26	85.6 days		
SW-VAT-3035	Lining), 313.15m, PR=2m/d [CH24-337.15] Construction of compartment LHS (min 24m from	0%	157 davs	Thu 12/3/26	Wed 16/9/26	85.6 days		
	RHS Lining), 313.15m, PR=2m/d							
SW-VAT-3010	[CH337.15-644.3] Construction of drainage layer, base slab, lower part (after all excavation) 307.15m, PR=12m/wk (154d)	0%	154 days	Wed 3/6/26	Thu 3/12/26	-32.4 days		
SW-VAT-3020	[CH337.15-644.3] Construction of RC Lining (min 24m from base sla	ab 0%	166 days	Thu 2/7/26	Mon 18/1/27	-32.4 days		
;	+ 2wk erection) 307.153m, PR=2m/d [CH337.15-644.3] Construction of compartment RHS (min 24m fror	m 00/	15/1 davis	Thu 27/0/26	Wed 2/2/27	-32 4 days		
SW-VAT-3035	[CH337.15-644.3] Construction of compartment RHS (min 24m frof Lining), 307.153, PR=2m/d	III U%	134 uays	Thu 27/8/26	Wed 3/3/27	-32.4 days		
SW-VAT-3030	[CH337.15-644.3] Construction of compartment LHS (min 24m fron	m 0%	154 days	Thu 3/9/26	Wed 10/3/27	-32.4 days		
3 SW-VAT-3040	Lining), 307.15m, PR=2m/d Installation of pipeworks below proposed road level (Total: 3726m)) 0%	135 days	Sat 14/11/26	Mon 29/3/27	-15.8 days		
	PR=36m/d incl. 1M for Pressure Test (135d)							
SW-VAT-3070 SW-VAT-3080	Construction of OHVD, 620.3m, PR=12d/50m Installation of FS and E&M along VAT			Tue 8/12/26 Mon 9/11/26	Thu 22/4/27 Wed 7/4/27	-9.8 days		
SW-VAT-3080	FS Inspection for VAT	0%		Wed 7/4/27	Wed 14/4/27	-1.4 days		
2 SW-VAT-3060	Installation of CLP power cable along VAT			Thu 11/2/27	Mon 26/4/27	-32.4 days		
	averns A - Salt Water Service Reservoir No.1 (CH527.03)			Wed 25/2/26	Fri 18/6/27	-81.8 days		
SW-C1-1000	Caverns A - Completion of Tunnel Works			Fri 17/4/26	Fri 17/4/26	-83 days		♦ 17/4
SW-C1-1010	Caverns A - Construction of Permanent Shotcrete Lining (Top Heading)	0%	12 days	Wed 25/2/26	Wed 11/3/26	-81.8 days		<u> </u>
ect: 21/WSD/21	Task Sum	,	_		Inactive Milestone		Duration-only Start-only	E External Milestone ♦ Critical Split
sed Programme (Apr 2024) : 1 May 2024	Split Proj		_		Inactive Summary		Manual Summary Rollup Finish-only	☐ Deadline
•	Milestone ◆ Inac	ctive Task			Manual Task		Manual Summary External Tasks	Critical Manual Progress

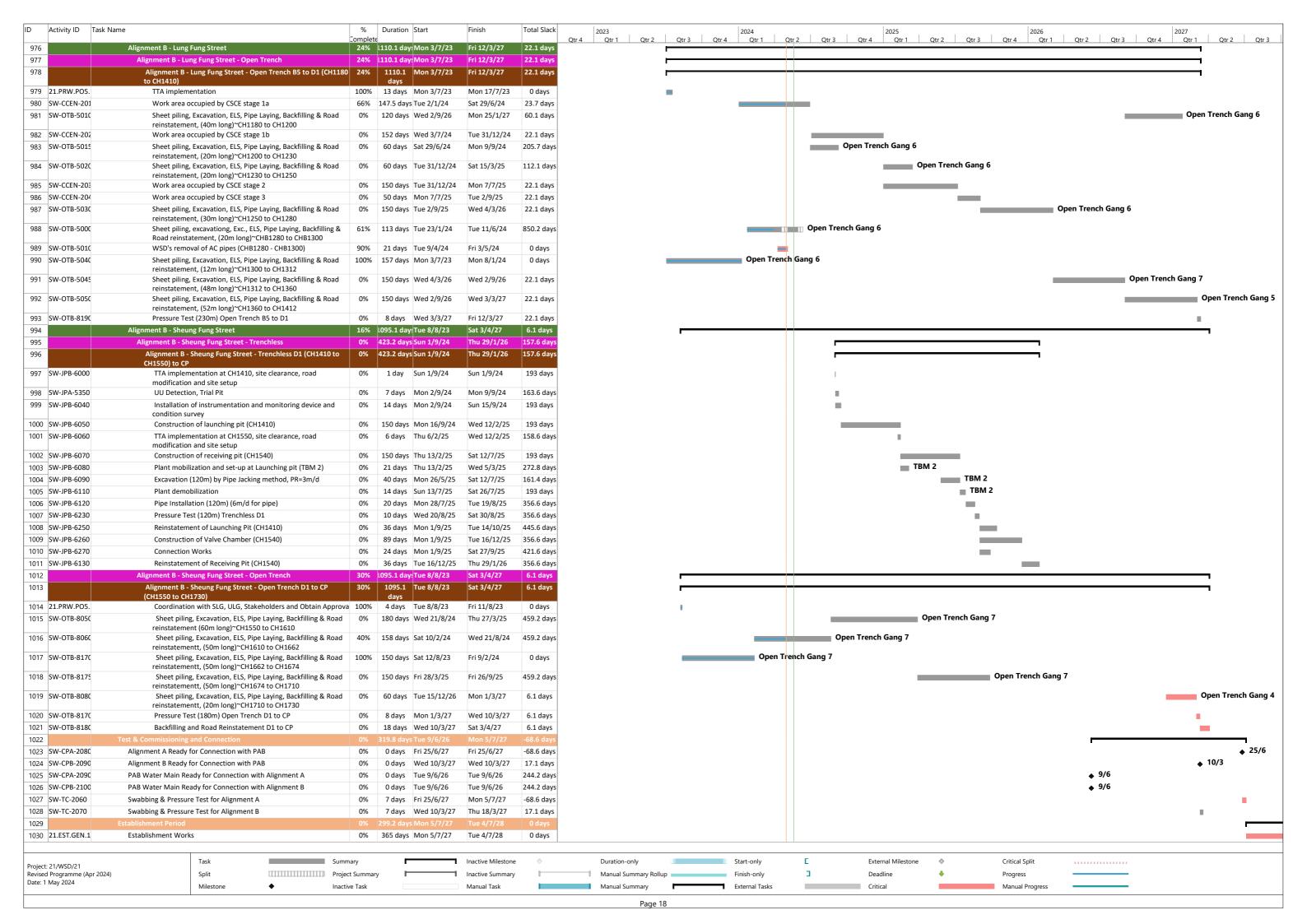
Activity ID	Took Name	01	Duration Start	Finish-	Total Cl.			1
	Task Name	% Complete	Duration Start	Finish	Total Slack	2023 Qtr 4 Qtr 1 Qtr 2 Qtr 3 Otr 4 Otr 1	Qtr 2 Qtr 3 Qtr 4 Qtr 1 Qtr 2 Qtr 3 Qtr 4 Qtr 1 Qtr 2 Qtr 3 Qtr 4 Qtr 1 Qtr 2 Qtr 3 Qtr 3 Qtr 4 Qtr 1 Qtr 2 Qtr 3 Qtr 3 Qtr 4 Qtr 1 Qtr 2 Qtr 3 Qtr 3 Qtr 4 Qtr 1 Qtr 2 Qtr 3 Qtr 3 Qtr 3 Qtr 4 Qtr 1 Qtr 2 Qtr 3 Qtr 3 Qtr 4 Qtr 4 Qtr 1 Qtr 2 Qtr 3 Qtr 3 Qtr 4 Qtr 3 Qtr 3 Qtr 4 Qtr 4 Qtr 3 Qtr 4 Qtr 3 <th< td=""><td>2027 tr 4</td></th<>	2027 tr 4
06 SW-C1-1011	Caverns A - Construction of Permanent Shotcrete Lining (Bottom Bench)		12 days Wed 22/4/26	Thu 7/5/26	-81.8 days			
707 SW-C1-1020		0%	16 days Thu 7/5/26	Wed 27/5/26	-81.8 days		■ ·	
08 SW-C1-1030	2wk for erection) Caverns A - Waterproofing system and protection layer to Wall and Slab	0%	60 days Wed 27/5/26	Sun 26/7/26	-104 days			
08 SW-C1-1030 09 SW-C1-1040			60 days Sat 13/6/26	Mon 24/8/26	-104 days			
.5 5VV C1-1U4U	1939m3, 12bays(11x9), PR= 15d/bay, 3workfronts)	070	30 day3 3at 13/0/20	141011 24/0/20	01.0 uays			
0 SW-C1-1050	Caverns A - Construction of wall, beam & slab up to 91.35mPD for water	r ta 0%	48 days Mon 24/8/26	Wed 21/10/26	-54.8 days			
11 SW-C1-1060	1 111	0%	44 days Mon 24/8/26	Thu 15/10/26	-81.8 days		_	
12 SW-C1-1070	(Total:1200m3, 11bays(12x9), PR=12d/bay, 3 workfront) Caverns A - Construction of soil filling, pipeworks and at-grade slab for	0%	24 days Fri 16/10/26	Sun 8/11/26	-97 days		_	
344 61 1070	pump/ plant room area	070	24 00/3 111 10/10/20	3uii 0/11/20	37 days			
13 SW-C1-1080		0%	48 days Mon 9/11/26	Sat 26/12/26	-97 days			
14 SW-C1-1090	pump/ plant room area Caverns A - Construction of remaining works incl. staircase, partition wal	ıll 0%	48 days Wed 9/12/26	Mon 25/1/27	-97 days			
14 3VV-C1-1090	and other civil works for E&M plant	111 076	46 days Wed 9/12/20	101011 23/1/27	-97 uays			
15 SW-C1-1100	Caverns A - FS, BS, E&M works and ABWF	0%	90 days Sat 21/11/26	Thu 18/2/27	-97 days			
6 SW-C1-1110	Caverns A - Completion of BS and ABWF works and Handover to CLP	0%	0 days Thu 18/2/27	Thu 18/2/27	-97 days			♦ 18/2
7 SW-C1-1120	Caverns A - CLP installation works in Transformer Room and Switcboard	Rc 0%	60 days Fri 19/2/27	Mon 19/4/27	-97 days			
8 SW-C1-1125	Caverns A - FS Inspection	0%	6 days Mon 22/3/27	Wed 31/3/27	376.8 days			
9 SW-C1-1130	Caverns A - Testing and Commissioning	0%	90 days Sun 21/3/27	Fri 18/6/27	-67 days			
0	Caverns B - Salt Water Service Reservoir No.2 (CH567.527)		378.4 days Mon 13/4/26		-51 days			
1 SW-C2-1000	•	0%	0 days Wed 3/6/26	Wed 3/6/26	-43 days		♦ 3/6	
2 SW-C2-1010			12 days Mon 13/4/26	Mon 27/4/26	-51 days		•	
3 SW-C2-1011	Caverns B - Construction of Permanent Shotcrete Lining (Bottom Bench)		12 days Mon 8/6/26	Mon 22/6/26	-51 days		•	
4 SW-C2-1020	Caverns B - Construction of Cavern Lining (Total: 5m long, PR=12m/9d + 2wk for erection)	0%	16 days Mon 22/6/26	Sat 11/7/26	-51 days			
25 SW-C2-1030	·	0%	60 days Sat 11/7/26	Wed 9/9/26	-61.2 days			
26 SW-C2-1040	·	0%	60 days Wed 29/7/26	Thu 8/10/26	-51 days			
2 611 62 1	1880m3, 15bays (11x7), PR= 15d/bay, 3workfronts)		20 de E : 0 / : - ' = -	F-: 20 /: : /s =	F4 /			_
7 SW-C2-1060	Caverns B - Construction of Slab 1.0m thk for pump/plant room area (Total:597m3, 7bays(11x7.5), PR=12d/bay, 3 workfront)	0%	36 days Fri 9/10/26	Fri 20/11/26	-51 days			
8 SW-C2-1050		r ta 0%	48 days Fri 9/10/26	Wed 25/11/26	-32 days		_	
9 SW-C2-1070	·		24 days Sat 21/11/26	Mon 14/12/26	-63 days			
	pump/ plant room area							
0 SW-C2-1080	Caverns B - Construction of wall, beam & slab up to cavern soffit for pump/ plant room area	0%	48 days Tue 15/12/26	Sun 31/1/27	-63 days			
1 SW-C2-1090		II 0%	48 days Thu 14/1/27	Tue 2/3/27	-63 days			
	and other civil works for E&M plant							_
32 SW-C2-1100			90 days Sun 27/12/26	Fri 26/3/27	-63 days			
33 SW-C2-1110	Caverns B - Connect power cable from SWSR1 Transformer Room & Switcboard Room to SWSR2	0%	60 days Fri 19/2/27	Mon 19/4/27	-97 days			
4 SW-C2-1120		0%	0 days Mon 19/4/27	Mon 19/4/27	-97 days			♦ 19/
35 SW-C2-1125		0%	6 days Tue 20/4/27		355.8 days			
36 SW-C2-1130	·		90 days Tue 20/4/27	Sun 18/7/27	-97 days			
1	Caverns b - resting and Commissioning		-		-34.8 days			
7	Caverns C - Fresh Water Service Reservoir No.1 (CH620.61)	0%	387.4 days Mon 30/3/26	Sun 18/7/27				
	Caverns C - Fresh Water Service Reservoir No.1 (CH620.61)		387.4 days Mon 30/3/26 0 days Fri 15/5/26	Fri 15/5/26	-27.8 days		↑ 15/5	
8 SW-C4-1000	Caverns C - Fresh Water Service Reservoir No.1 (CH620.61) Caverns C - Completion of Tunnel Works	0%			-27.8 days -34.8 days		♦ 15/5	
SW-C4-1000 SW-C4-1010	Caverns C - Fresh Water Service Reservoir No.1 (CH620.61) Caverns C - Completion of Tunnel Works	0% 0%	0 days Fri 15/5/26	Fri 15/5/26	-		♦ 15/5	
SW-C4-1000 SW-C4-1010 SW-C4-1011	Caverns C - Fresh Water Service Reservoir No.1 (CH620.61) Caverns C - Completion of Tunnel Works Caverns C - Construction of Permanent Shotcrete Lining (Top Heading) Caverns C - Construction of Permanent Shotcrete Lining (Bottom Bench) Caverns C - Construction of Cavern Lining (Total: 5m long, PR=12m/9d +	0% 0%	0 days Fri 15/5/26 12 days Mon 30/3/26	Fri 15/5/26 Thu 16/4/26	-34.8 days		• 15/5 •	
8 SW-C4-1000 9 SW-C4-1010 0 SW-C4-1011 1 SW-C4-1020	Caverns C - Fresh Water Service Reservoir No.1 (CH620.61) Caverns C - Completion of Tunnel Works Caverns C - Construction of Permanent Shotcrete Lining (Top Heading) Caverns C - Construction of Permanent Shotcrete Lining (Bottom Bench) Caverns C - Construction of Cavern Lining (Total: 5m long, PR=12m/9d + 2wk for erection)	0% 0% 0 0% 0%	0 days Fri 15/5/26 12 days Mon 30/3/26 12 days Fri 15/5/26 16 days Sat 30/5/26	Fri 15/5/26 Thu 16/4/26 Sat 30/5/26 Thu 18/6/26	-34.8 days -34.8 days -34.8 days		• 15/5 •	
8 SW-C4-1000 9 SW-C4-1010 0 SW-C4-1011 1 SW-C4-1020 2 SW-C4-1030	Caverns C - Fresh Water Service Reservoir No.1 (CH620.61) Caverns C - Completion of Tunnel Works Caverns C - Construction of Permanent Shotcrete Lining (Top Heading) Caverns C - Construction of Permanent Shotcrete Lining (Bottom Bench) Caverns C - Construction of Cavern Lining (Total: 5m long, PR=12m/9d + 2wk for erection) Caverns C - Waterproofing system and protection layer to Wall and Slab	0% 0% 0 0% 0 0%	0 days Fri 15/5/26 12 days Mon 30/3/26 12 days Fri 15/5/26 16 days Sat 30/5/26 50 days Thu 18/6/26	Fri 15/5/26 Thu 16/4/26 Sat 30/5/26 Thu 18/6/26 Fri 7/8/26	-34.8 days -34.8 days -34.8 days		• 15/5	
88 SW-C4-1000 89 SW-C4-1010 40 SW-C4-1011 11 SW-C4-1020 42 SW-C4-1030	Caverns C - Fresh Water Service Reservoir No.1 (CH620.61) Caverns C - Completion of Tunnel Works Caverns C - Construction of Permanent Shotcrete Lining (Top Heading) Caverns C - Construction of Permanent Shotcrete Lining (Bottom Bench) Caverns C - Construction of Cavern Lining (Total: 5m long, PR=12m/9d + 2wk for erection) Caverns C - Waterproofing system and protection layer to Wall and Slab	0% 0% 0 0% 0 0%	0 days Fri 15/5/26 12 days Mon 30/3/26 12 days Fri 15/5/26 16 days Sat 30/5/26	Fri 15/5/26 Thu 16/4/26 Sat 30/5/26 Thu 18/6/26	-34.8 days -34.8 days -34.8 days		15/5	
8 SW-C4-1000 9 SW-C4-1010 0 SW-C4-1011 1 SW-C4-1020 2 SW-C4-1030 3 SW-C4-1040	Caverns C - Fresh Water Service Reservoir No.1 (CH620.61) Caverns C - Completion of Tunnel Works Caverns C - Construction of Permanent Shotcrete Lining (Top Heading) Caverns C - Construction of Permanent Shotcrete Lining (Bottom Bench) Caverns C - Construction of Cavern Lining (Total: 5m long, PR=12m/9d + 2wk for erection) Caverns C - Waterproofing system and protection layer to Wall and Slab Caverns C - Construction of Slab 1.6m thk for water tank area (Total: 2482m3, 15bays (11x9), PR= 15d/bay, 3workfronts) Caverns C - Construction of Slab 1.0m thk for pump/plant room area	0% 0% 0% 0% 0% 0%	0 days Fri 15/5/26 12 days Mon 30/3/26 12 days Fri 15/5/26 16 days Sat 30/5/26 50 days Thu 18/6/26	Fri 15/5/26 Thu 16/4/26 Sat 30/5/26 Thu 18/6/26 Fri 7/8/26	-34.8 days -34.8 days -34.8 days		15/5	
8 SW-C4-1000 9 SW-C4-1010 0 SW-C4-1011 1 SW-C4-1020 2 SW-C4-1030 3 SW-C4-1040 4 SW-C4-1060	Caverns C - Fresh Water Service Reservoir No.1 (CH620.61) Caverns C - Completion of Tunnel Works Caverns C - Construction of Permanent Shotcrete Lining (Top Heading) Caverns C - Construction of Permanent Shotcrete Lining (Bottom Bench) Caverns C - Construction of Cavern Lining (Total: 5m long, PR=12m/9d + 2wk for erection) Caverns C - Waterproofing system and protection layer to Wall and Slab Caverns C - Construction of Slab 1.6m thk for water tank area (Total: 2482m3, 15bays (11x9), PR=15d/bay, 3workfronts) Caverns C - Construction of Slab 1.0m thk for pump/plant room area (Total: 553m3, 6bays (11x9), PR=12d/bay, 3 workfront)	0% 0% 0% 0% 0% 0% 0%	0 days Fri 15/5/26 12 days Mon 30/3/26 12 days Fri 15/5/26 16 days Sat 30/5/26 50 days Thu 18/6/26 60 days Mon 13/7/26 24 days Mon 21/9/26	Fri 15/5/26 Thu 16/4/26 Sat 30/5/26 Thu 18/6/26 Fri 7/8/26 Sat 19/9/26 Wed 21/10/26	-34.8 days -34.8 days -34.8 days -41.8 days -34.8 days		·	
8 SW-C4-1000 9 SW-C4-1010 0 SW-C4-1011 1 SW-C4-1020 2 SW-C4-1030 3 SW-C4-1040 4 SW-C4-1060 5 SW-C4-1050	Caverns C - Fresh Water Service Reservoir No.1 (CH620.61) Caverns C - Completion of Tunnel Works Caverns C - Construction of Permanent Shotcrete Lining (Top Heading) Caverns C - Construction of Permanent Shotcrete Lining (Bottom Bench) Caverns C - Construction of Cavern Lining (Total: 5m long, PR=12m/9d + 2wk for erection) Caverns C - Waterproofing system and protection layer to Wall and Slab Caverns C - Construction of Slab 1.6m thk for water tank area (Total: 2482m3, 15bays (11x9), PR= 15d/bay, 3workfronts) Caverns C - Construction of Slab 1.0m thk for pump/plant room area (Total:553m3, 6bays (11x9), PR=12d/bay, 3 workfront) Caverns C - Construction of wall, beam & slab up to 91.35mPD for water	0% 0% 0% 0% 0% 0% 0%	0 days Fri 15/5/26 12 days Mon 30/3/26 12 days Fri 15/5/26 16 days Sat 30/5/26 50 days Thu 18/6/26 60 days Mon 13/7/26 24 days Mon 21/9/26 48 days Sun 20/9/26	Fri 15/5/26 Thu 16/4/26 Sat 30/5/26 Thu 18/6/26 Fri 7/8/26 Sat 19/9/26 Wed 21/10/26 Fri 6/11/26	-34.8 days -34.8 days -34.8 days -41.8 days -34.8 days -34.8 days 25 days		·	
8 SW-C4-1000 9 SW-C4-1010 0 SW-C4-1011 1 SW-C4-1020 2 SW-C4-1030 3 SW-C4-1040 4 SW-C4-1060 5 SW-C4-1050	Caverns C - Fresh Water Service Reservoir No.1 (CH620.61) Caverns C - Completion of Tunnel Works Caverns C - Construction of Permanent Shotcrete Lining (Top Heading) Caverns C - Construction of Permanent Shotcrete Lining (Bottom Bench) Caverns C - Construction of Cavern Lining (Total: 5m long, PR=12m/9d + 2wk for erection) Caverns C - Waterproofing system and protection layer to Wall and Slab Caverns C - Construction of Slab 1.6m thk for water tank area (Total: 2482m3, 15bays (11x9), PR= 15d/bay, 3workfronts) Caverns C - Construction of Slab 1.0m thk for pump/plant room area (Total:553m3, 6bays (11x9), PR=12d/bay, 3 workfront) Caverns C - Construction of wall, beam & slab up to 91.35mPD for water	0% 0% 0% 0% 0% 0% 0%	0 days Fri 15/5/26 12 days Mon 30/3/26 12 days Fri 15/5/26 16 days Sat 30/5/26 50 days Thu 18/6/26 60 days Mon 13/7/26 24 days Mon 21/9/26	Fri 15/5/26 Thu 16/4/26 Sat 30/5/26 Thu 18/6/26 Fri 7/8/26 Sat 19/9/26 Wed 21/10/26 Fri 6/11/26	-34.8 days -34.8 days -34.8 days -41.8 days -34.8 days		·	ı
88 SW-C4-1000 89 SW-C4-1010 10 SW-C4-1011 11 SW-C4-1020 12 SW-C4-1030 13 SW-C4-1040 14 SW-C4-1060 15 SW-C4-1050 16 SW-C4-1070	Caverns C - Fresh Water Service Reservoir No.1 (CH620.61) Caverns C - Completion of Tunnel Works Caverns C - Construction of Permanent Shotcrete Lining (Top Heading) Caverns C - Construction of Permanent Shotcrete Lining (Bottom Bench) Caverns C - Construction of Cavern Lining (Total: 5m long, PR=12m/9d + 2wk for erection) Caverns C - Waterproofing system and protection layer to Wall and Slab Caverns C - Construction of Slab 1.6m thk for water tank area (Total: 2482m3, 15bays (11x9), PR=15d/bay, 3workfronts) Caverns C - Construction of Slab 1.0m thk for pump/plant room area (Total:553m3, 6bays (11x9), PR=12d/bay, 3 workfront) Caverns C - Construction of wall, beam & slab up to 91.35mPD for water Caverns C - Construction of soil filling, pipeworks and at-grade slab for pump/ plant room area	0% 0% 0% 0% 0% 0% 0% 0% 0% 0%	0 days Fri 15/5/26 12 days Mon 30/3/26 12 days Fri 15/5/26 16 days Sat 30/5/26 50 days Thu 18/6/26 60 days Mon 13/7/26 24 days Mon 21/9/26 48 days Sun 20/9/26	Fri 15/5/26 Thu 16/4/26 Sat 30/5/26 Thu 18/6/26 Fri 7/8/26 Sat 19/9/26 Wed 21/10/26 Fri 6/11/26 Sat 14/11/26	-34.8 days -34.8 days -34.8 days -41.8 days -34.8 days -34.8 days 25 days		·	
8 SW-C4-1000 9 SW-C4-1010 0 SW-C4-1011 1 SW-C4-1020 2 SW-C4-1030 3 SW-C4-1040 4 SW-C4-1060 5 SW-C4-1050 6 SW-C4-1070 7 SW-C4-1080	Caverns C - Fresh Water Service Reservoir No.1 (CH620.61) Caverns C - Completion of Tunnel Works Caverns C - Construction of Permanent Shotcrete Lining (Top Heading) Caverns C - Construction of Permanent Shotcrete Lining (Bottom Bench) Caverns C - Construction of Cavern Lining (Total: 5m long, PR=12m/9d + 2wk for erection) Caverns C - Waterproofing system and protection layer to Wall and Slab Caverns C - Construction of Slab 1.6m thk for water tank area (Total: 2482m3, 15bays (11x9), PR= 15d/bay, 3workfronts) Caverns C - Construction of Slab 1.0m thk for pump/plant room area (Total:553m3, 6bays (11x9), PR=12d/bay, 3 workfront) Caverns C - Construction of wall, beam & slab up to 91.35mPD for water Caverns C - Construction of soil filling, pipeworks and at-grade slab for pump/ plant room area Caverns C - Construction of wall, beam & slab up to cavern soffit for pump/ plant room area	0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0%	0 days Fri 15/5/26 12 days Mon 30/3/26 12 days Fri 15/5/26 16 days Sat 30/5/26 50 days Thu 18/6/26 60 days Mon 13/7/26 24 days Mon 21/9/26 48 days Sun 20/9/26 24 days Sun 15/11/26	Fri 15/5/26 Thu 16/4/26 Sat 30/5/26 Thu 18/6/26 Fri 7/8/26 Sat 19/9/26 Wed 21/10/26 Fri 6/11/26 Sat 14/11/26 Fri 1/1/27	-34.8 days -34.8 days -34.8 days -41.8 days -34.8 days -34.8 days -25 days -43 days		·	
8 SW-C4-1000 9 SW-C4-1010 0 SW-C4-1011 1 SW-C4-1020 2 SW-C4-1030 3 SW-C4-1040 4 SW-C4-1060 5 SW-C4-1050 6 SW-C4-1070 7 SW-C4-1080	Caverns C - Fresh Water Service Reservoir No.1 (CH620.61) Caverns C - Completion of Tunnel Works Caverns C - Construction of Permanent Shotcrete Lining (Top Heading) Caverns C - Construction of Permanent Shotcrete Lining (Bottom Bench) Caverns C - Construction of Cavern Lining (Total: 5m long, PR=12m/9d + 2wk for erection) Caverns C - Waterproofing system and protection layer to Wall and Slab Caverns C - Construction of Slab 1.6m thk for water tank area (Total: 2482m3, 15bays (11x9), PR= 15d/bay, 3workfronts) Caverns C - Construction of Slab 1.0m thk for pump/plant room area (Total:553m3, 6bays (11x9), PR=12d/bay, 3 workfront) Caverns C - Construction of wall, beam & slab up to 91.35mPD for water Caverns C - Construction of soil filling, pipeworks and at-grade slab for pump/ plant room area Caverns C - Construction of wall, beam & slab up to cavern soffit for pump/ plant room area Caverns C - Construction of remaining works incl. staircase, partition wal	0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0%	0 days Fri 15/5/26 12 days Mon 30/3/26 12 days Fri 15/5/26 16 days Sat 30/5/26 50 days Thu 18/6/26 60 days Mon 13/7/26 24 days Mon 21/9/26 48 days Sun 20/9/26 24 days Thu 22/10/26	Fri 15/5/26 Thu 16/4/26 Sat 30/5/26 Thu 18/6/26 Fri 7/8/26 Sat 19/9/26 Wed 21/10/26 Fri 6/11/26 Sat 14/11/26 Fri 1/1/27	-34.8 days -34.8 days -34.8 days -41.8 days -34.8 days -34.8 days 25 days -43 days		·	
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D Activity ID	Task Name		Duration S	Start	Finish	Total Slack	2023	20	024	2025	1 1	2026	Qtr 2	1
760 SW-C5-1040	Caverns D - Construction of Slab 1.6m thk for water tank area (Total:	Complete 0%	60 days T	ue 28/7/26	Wed 7/10/26	-49.2 days	Qtr 4 Qtr 1 Qtr 2	Qtr 3 Qtr 4	Qtr 1 Qtr 2	Qtr 3 Qtr 4 Qtr 1 C	Qtr 2 Qtr 3 Qtr	4 Qtr 1	Qtr 2 Qtr 3 Qtr 4 Qtr 1	Qtr 2 Qtr 3
761 SW-C5-1060	1961m3, 12bays (11x9), PR= 15d/bay, 3workfronts) Caverns D - Construction of Slab 1.0m thk for pump/plant room area	0%	36 days V	Wed 7/10/26	Thu 19/11/26	-49.2 days							_	
762 SW-C5-1050	(Total:986m3, 9bays (11x9), PR=12d/bay, 3 workfront) Caverns D - Construction of wall, beam & slab up to 91.35mPD for water	0%	48 days W	Wed 7/10/26	Tue 24/11/26	-30.2 days								
	tank area													
763 SW-C5-1070	Caverns D - Construction of soil filling, pipeworks and at-grade slab for pump/ plant room area	0%	24 days T	Thu 19/11/26	Sun 13/12/26	-61.2 days							-	
764 SW-C5-1080	Caverns D - Construction of wall, beam & slab up to cavern soffit for pump/ plant room area	0%	48 days S	Sun 13/12/26	Sat 30/1/27	-61.2 days							_	
765 SW-C5-1090	Caverns D - Construction of remaining works incl. staircase, partition wall	0%	48 days T	ue 12/1/27	Mon 1/3/27	-61.2 days							_	
766 SW-C5-1100	and other civil works for E&M plant Caverns D - FS, BS, E&M works and ABWF	0%	90 days F	ri 25/12/26	Thu 25/3/27	-61.2 days							_	
767 SW-C5-1110	Caverns D - Connect power cable from SWSR1 Transformer Room &	0%	60 days F	ri 19/2/27	Mon 19/4/27	-97 days							_	
768 SW-C5-1120	Switcboard Room to FWSR2 Caverns D - Energization of FWSR2	0%	0 days N	Mon 19/4/27	Mon 19/4/27	-97 days								♦ 19/4
769 SW-C5-1125	Caverns D - FS Inspection	0%		ue 20/4/27		355.8 days								1
770 SW-C5-1130 771	Caverns D - Testing and Commissioning Revised Watermain Works @ Portion 5			Tue 20/4/27 Ned 28/12/22	Sun 18/7/27	-97 days								
772 A1070	XP Application				Mon 12/6/23	0 days								
773	Alignment A			ue 13/6/23		-61.6 days	_							
774 775	Alignment A - Chuk Yuen Road Alignment A - Chuk Yuen Road - Trenchless			Tue 13/6/23 Mon 3/7/23	Fri 25/6/27 Mon 12/4/27	-61.6 days	-							 1
776	Alignment A - Chuk Yuen Road - Trenchless A1 (CHA70 Pit 2 to	-	201 days T		Wed 9/9/26	0 days								•
777 SW-JPA-1080	CHA0) - 7th Drive Plant mobilization and set-up at Launching pit 2 (CHA70)	0%	12 days T	Thu 21/5/26	Fri 5/6/26	36 days							■ TBM 1	
778 SW-JPA-1085	Construction of Receiving Pit 0 at PAB		180 days T		Sat 15/8/26	0 days							_	
779 SW-JPA-1090	Excavation (70m) by Pipe Jacking method, PR=3m/d (7th drive)		24 days F		Sat 4/7/26	36 days							■■ TBM 1 ■ TBM 1	
780 SW-JPA-1110 781 SW-JPA-1120	Plant demobilisation Pipe Installation (70m x 3nos.) (12m/d for pipe)	0%	6 days S	Sun 16/8/26 Sat 22/8/26	Fri 21/8/26 Fri 28/8/26	0.4 days 48.4 days							I DIVI I	
782 SW-JPA-5200	Pressure Test (70m x 3nos.) Trenchless A1		10 days S		Wed 9/9/26	48.4 days								
783	Alignment A - Chuk Yuen Road - Trenchless A2 (CHA70 Pit 2 to CHA190 Pit 3) - 5th Drive	12%	1088.8 T days	ue 22/8/23	Mon 12/4/27	0.4 days		-					1	ı
784 SW-JPA-2000	TTA implementation at CHA190, site clearance, road	100%		Tue 22/8/23	Tue 22/8/23	0 days		1						
785 SW-JPA-5290	modification and site setup UU Detection, Trial Pit at CHA190	100%	62 days V	Ved 23/8/23	Mon 6/11/23	0 days								
786 SW-JPA-2040	Installation of instrumentation and monitoring device and	100%	7 days V	Wed 23/8/23	Wed 30/8/23	0 days								
787 SW-JPA-2045	condition survey TTA implementation at CH70, site clearance, road modification	100%	25 days V	Wed 22/11/23	Thu 21/12/23	0 days								
788 SW-JPA-2046	and site setup and UU Detection Trial sheet piling work to verify the obstruction by boulders at	F 100%	1 day T	Thu 21/12/23	Fri 22/12/23	0 days		1						
789 SW-JPA-2050	Construction of launching pit 2 (CHA70) (Common pit with B2)		180 days S		Mon 15/9/25	18.4 days		'						
790 SW-JPA-2051	Trial sheet piling work to verify the obstruction by boulders at			Tue 7/11/23	Tue 7/11/23	0 days		T.						
791 SW-JPA-2060792 SW-JPA-2080	Construction of receiving pit 3 (CHA190) (Common pit with B2) Plant mobilization and set-up at Launching pit 2 (CHA70)	0%		Mon 25/11/24 Tue 30/12/25	Mon 7/7/25 Tue 13/1/26	18.4 days						■ TBM 1		
793 SW-JPA-2090	Excavation (120m) by Pipe Jacking method, PR=3m/d (5th drive			Tue 13/1/26	Wed 4/3/26	-68.6 days						TE	BM 1	
794 SW-JPA-2110	Plant demobilization	0%		Wed 4/3/26	Wed 11/3/26	-68.6 days						. Т	BM 1	
795 SW-JPA-2120 796 SW-JPA-5240	Pipe Installation (120m x 3nos.; 12m/d for pipe) Pressure Test (120m) Trenchless A2	0%		Thu 21/5/26 Wed 3/6/26	Wed 3/6/26 Mon 15/6/26	-59.6 days							- N	
797 SW-JPA-5210	Construction of Valve Chamber 2 (CHA70) - Alignment A	0%		hu 10/9/26	Thu 24/12/26	48.4 days								
798 SW-JPA-2130	Reinstatement of Jacking Pit (CHA70)			Thu 25/2/27	Mon 12/4/27	0.4 days								l
799 SW-JPA-5230 800 SW-JPA-1130	Construction of Valve Chamber 3 (CHA190) after Trenchless B2 Reinstatement of Receiving Pit (CHA190) after Trenchless B2		89 days F 36 days S	ri 26/6/26 Sat 10/10/26	Sat 10/10/26 Mon 23/11/26	-68.6 days 112.4 days								
801	Alignment A - Chuk Yuen Road - Trenchless A3 (CHA610 Pit 6 to					328.2 days						 1	—	
802 SW-JPB-4000	CHA780 Pit 8) - 1st Drive TTA implementation at CHA610, site clearance, road	100%	23 days T	hu 3/8/23	Tue 29/8/23	0 days								
803 SW-CCEN-206	modification and site setup Delay due to KMB Company's requirement on bus shelter		38 days T		Wed 20/9/23	0 days		_						
	removal (EWN-0010)							_						
804 SW-JPA-5330 805 SW-JPB-4040	UU Detection, Trial Pit Installation of instrumentation and monitoring device and		30 days T 14 days V	Tue 15/8/23 Wed 30/8/23	Mon 18/9/23 Thu 14/9/23	0 days 0 days		-						
	condition survey							_						
806 SW-JPB-4041 807 SW-CCEN-207	Trial sheet piling work to verify the obstruction by boulders at Delay due to encountering boulder (unable to drive sheetpile,		1 day V 85 days F	Wed 11/10/23 Fri 15/9/23	Wed 11/10/23 Thu 28/12/23	0 days 0 days		1						
	design amendment to suit)													
808 SW-JPB-4060 809 SW-JPA-3040	Construction of launching pit 6 (CHA610) TTA implementation at CHA780 (Pit 8), site clearance, road		6 days T	ri 29/12/23 Tue 9/4/24	Sat 26/10/24 Mon 15/4/24	-60.8 days 0 days		_						
810 SW-JPA-3050	modification and site setup								-					
810 SW-JPA-3050 811 SW-JPA-3080	Construction of receiving pit 8 (CHA780) Plant mobilization and set-up at Launching pit 6 (CHA610)		180 days T 18 days S	at 26/10/24	Thu 9/1/25 Fri 15/11/24	-19.5 days -60.8 days				TBM 1				
812 SW-JPA-3090	Excavation (170m) by Pipe Jacking method, PR=2m/d (1st drive	e 0%	85 days F	ri 15/11/24	Fri 28/2/25	-60.8 days				TBM 1				
813 SW-JPA-3110 814 SW-JPA-3120	Plant demobilization Pipe Installation (170m x 3nos.) (12m/d for pipe)		12 days S		Fri 14/3/25 Tue 1/4/25	-60.8 days 135.2 days				■ TBM	11			
814 SW-JPA-3120 815 SW-JPA-5220	Pripe installation (170m x 3nos.) (12m/d for pipe) Pressure Test (170m x 3nos.) Trenchless A3		15 days S 10 days V			135.2 days								
			-				5		4 b. 5		A -:	il C-li:		
Project: 21/WSD/21 Revised Programme (Ap	r 2024) Task Sumn	mary ct Summary			Inactive Milestone Inactive Summary	·	Duration-only Manual Summary Rollup	Stari	*	External Milestone Deadline	_	ical Split gress		
Date: 1 May 2024		ive Task	•	•	Manual Task		Manual Summary		,	Critical		nual Progress		
							Page 14							



March Marc	D Activity ID	Task Name	%	Duration Start	Finish	Total Slack	2023	2024		2025	2026 2027
			Complete			0	tr 4 Qtr 1 Qtr 2 Qtr 3	3 Qtr 4 Qtr 1	Qtr 2 Qtr 3 Qtr 4	Qtr 1 Qtr 2 Qtr 3	Qtr 4 Qtr 1 Qtr 2 Qtr 3 Qtr 4 Qtr 1 Qtr 2 Qtr 3
20	865 SW-JPA-5040	S C C C C C C C C C C C C C C C C C C C	100%	14 days Sat 16/9/23	Wed 4/10/23	0 days					
State	866 SW-JPA-5050	•	0%	150 days Mon 28/7/25	Fri 23/1/26	10.4 days					
Control Cont	867 SW-JPA-5055	· · · · · · · · · · · · · · · · · · ·	0%	6 days Thu 3/7/25	Wed 9/7/25	95.4 days				1	
1	868 SW-IPA-5060	·	0%	150 days Mon 28/7/25	Fri 23/1/26	79 / days				_	
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Mathematical Math		·									_
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Martin M		·				-					-
March Process Proces						-					TBM 2
18	877 SW-JPA-5120	Pipe Installation (380m x 2nos.; 12m/d for pipe)	0%			10.4 days					_
March Marc	878 SW-JPA-5250	Pressure Test (380m) Trenchless C1	0%	10 days Mon 14/9/26	Fri 25/9/26	10.4 days					and the second s
Martin Control Contr	879 SW-JPA-5280	Construction of Valve Chamber (CH1210)	0%	89 days Fri 25/9/26	Wed 13/1/27	10.4 days					
Mary Section Mary		Construction of Valve Chamber (CH1600)	0%	89 days Fri 25/9/26		10.4 days					
Part						-					-
1	882 SW-JPA-5190	• • • • • • • • • • • • • • • • • • • •	0%	36 days Sat 13/2/27	Tue 30/3/27	10.4 days					_
Control Cont	883		0%	93 days Mon 2/2/26	Fri 29/5/26	261 days					
10 10 10 10 10 10 10 10	884		0%	93 days Mon 2/2/26	Fri 29/5/26	261 days					
March Marc	995 21 DDW DOS	· · · · · · · · · · · · · · · · · · ·	00/	1 day Mar 3/3/20	Mon 3/2/26	261 days					
Second S		·				-					_
Part						-					_
Mary			2,0	20,2,20							
Magnoral A. Toy May Decorate Service Magnoral A. Toy May Decorate Magnoral											•
		-		,							
Part											
Mathematical Control	032		25,0		1100 14/4/27	1.2 days	•				•
Part		Coordinate with SLG, ULG, Stakeholders and Obtain Approval	100%	4 days Thu 3/8/23	Mon 7/8/23	-	1				
Medical Medi	894 SW-OTA-6080		0%	120 days Thu 27/2/25	Thu 24/7/25	434.2 days				Оре	n Trench Gang 4
10 10 10 10 10 10 10 10	895 SW-OTA-6070		0%	120 days Thu 3/10/24	Wed 26/2/25	434.2 days				Open Trench Gang 4	
Part	200 514 074 5056		240/	407 1 7 20/2/24	TI 2/40/24	424.2.1			Onen Tr	anch Gana A	
Part	896 SW-UTA-6060		31%	187 days Tue 20/2/24	Inu 3/10/24	434.2 days			Open ir	ench dang 4	
Mode Seet plans, Excession, U.S. Poet plans, Excession, Clas Poet plans, Excession Clas Poet Mode M	897 SW-OTA-6050		100%	120 days Fri 15/9/23	Fri 9/2/24	0 days		Open T	rench Gang 4		
Part Private meth [1300 Open Tech [1300	898 SW-0TA-6090		0%	60 days Mon 4/1/27	Wed 17/3/27	-1 2 days					_
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Cubic Cubi				* * * * * * * * * * * * * * * * * * * *		-					· ·
106 Succession (70m) by Pipe Jacking method, PR-3m/d (8th drive) 0% 2 days 5at 5y/10/5 0% days 0% day		CHBO) - 8th Drive									_ TD\$4.4
Plant demobilization						-					-
909 SW-JP8-5120 Pipe Installation (70m) (6m/d for pipe) 0% 12 days Mon 12/130/26 0.4 days 909 SW-JP8-5160 Pressure Test (80m) Terachless 82 (101870 Pit 2 to 0% 132 days Wed 13/3/26 0.4 days 12 days Wed 13/3/26 0.6 dis days 12		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				-					
90 SW-IP8-6160 Pressure Test (80m) Trenchless B1 0 kg 10 days Tue 27/10/26 58.5 days Wed 11/3/26											I Diri I
Alignment B - Chuk Yean Road - Trenchless B2 (CHB70 Pit 2 to 0% 224 days Wed 11/3/25 Mon 12/4/27 Se8.6 days CHB30 Pit 3) - 6th Drive CHB20 Pit 3) - 6th Driv 3) - 6th Drive CHB20 Pit 3) - 6th Drive CHB20 Pit 3) - 6th Driv						-					
May PB-2080 Plant mobilization and set-up at Launching pit 2 (CH870) 0% 12 days Wed 25/3/26 68.6 days SW PB-2090 Excavation (120m) by Pipe Jacking method, PR-3m/d (6th drink 0% 40 days Wed 25/3/26 7 thu 14/5/26 68.6 days SW PB-2110 Plant demonibilization		• •		-		-					
912 SW-JPB-2090	044 614 102 225		201	12 days 14 12 12 12	W- Lor /2 /22	50.5.1					TPM 1
913 SW-JPB-2110 Plant demobilization 0% 6 days Thu 1/5/26 7 Thu 21/5/26 -68.6 days 914 SW-JPB-2120 Pipe Installation (110m; 6m/d for pipe) 0% 19 days Thu 21/5/26 5e8.6 days 915 SW-JPB-2130 Pressure Test (110m) Trenchless B2 0% 10 days Sat 13/6/26 Thu 25/6/26 -68.6 days 916 SW-JPB-2130 Pressure Test (110m) Trenchless B2 0% 10 days Sat 13/6/26 Thu 25/6/26 -68.6 days 916 SW-JPB-130 Reinstatement of Receiving Pit (CH190) 0% 36 days Thu 25/2/27 0.4 days 918 Alignment B - Chuk Yuen Road - Trenchless B3 (CH190) Pit 3 to 0% 548.2 days Mon 8/7/24 Use 5/5/26 50.6 days 919 SW-JPB-3000 TTA implementation at CH190, site clearance, road modification and site setup 920 SW-JPA-5320 UU Detection, Trial Pit 0% 14 days Sat 9/11/24 Mon 25/11/24 0 days 921 SW-JPB-3040 Installation of instrumentation and monitoring device and condition survey 1 Task Summary 1 Task Summar						-					
914 SW-JPB-2120 Pipe Installation (110m; 6m/d for pipe) 0% 19 days Thu 21/5/26 5at 13/6/26 -68.6 days 915 SW-JPB-2130 Pressure Test (110m) Trenchless B2 0% 10 days Sat 13/6/26 Thu 25/6/26 -68.6 days 916 SW-JPB-170 Construction of Valve Chamber 2A (CH70) Alignment B 0% 89 days Sat 7/11/26 Thu 25/2/27 0.4 days 917 SW-JPB-130 Reinstatement of Receiving Pit (CH190) 0% 36 days Thu 25/2/27 Non 8/8/2 days Mon 8/7/24 Thu 25/2/27 0.4 days 918 CHB420 Pit 5)-3rd Drive 1.0 modification and site setup 1.0 modification and site setup 1.0 modification of instrumentation and monitoring device and 0% 14 days 5at 9/11/24 Mon 25/11/24 0 days 1.0 modification of instrumentation and monitoring device and 0.0 modification of instrumentation of instrumentation and monitoring device and 0.0 modification of instrumentation of instrumentation and monitoring device and 0.0 modification of instrumentation of i		· · · · · · · · · · · · · · · · · · ·				-					
915 SW-JPB-2130						-					
915 SW-JPB-6170 Construction of Valve Chamber 2A (CH70) Alignment B 0% 89 days Sat 7/11/26 Thu 25/2/27 Mon 12/4/27 0.4 days						-					_
Alignment B - Chuk Yuen Road - Trenchless B3 (CHB190 Pit 3 to 0% 548.2 days Mon 8/7/24 Tue 5/5/26 50.6 days CHB420 Pit 5) - 3rd Drive 919 SW-JPB-3000 TTA implementation at CH190, site clearance, road modification and site setup 920 SW-JPA-5320 UU Detection, Trial Pit 0% 14 days Sat 9/11/24 Mon 25/11/24 0 days 921 SW-JPB-3040 Installation of instrumentation and monitoring device and condition survey 1		·				-					_
SW-JPB-3000 TTA implementation at CH190, site clearance, road modification and site setup 920 SW-JPA-5320 UU Detection, Trial Pit 921 SW-JPB-3040 Installation of instrumentation and monitoring device and condition survey 122 SW-JPB-3040 Condition survey 123 SW-JPB-3040 Survey 124 Sat 13/7/24 92.2 days 125 Survey 126 Sat 9/11/24 Mon 25/11/24 0 days 127 Sat 91/1/24 Mon 25/11/24 0 days 128 Sat 9/11/24 Mon 25/11/24 0 days 128 Survey 129 Su	917 SW-JPB-1130	Reinstatement of Receiving Pit (CH190)	0%	36 days Thu 25/2/27	Mon 12/4/27	0.4 days					_
919 SW-JPB-3000 TTA implementation at CH190, site clearance, road modification and site setup 920 SW-JPA-5320 UU Detection, Trial Pit 0% 14 days Sat 9/11/24 Mon 25/11/24 0 days 921 SW-JPB-3040 Installation of instrumentation and monitoring device and condition surver 922 SW-JPB-3040 Condition surver 923 SW-JPB-3040 Installation of instrumentation and monitoring device and condition surver 924 Sat 9/11/24 Mon 25/11/24 0 days 925 Duration-only Start-only 926 External Milestone Progress 927 Project 21/WSD/21 828 Summary Inactive Summary Inactive Summary Inactive Summary Inactive Summary Manual Summary Rollup 928 SW-JPB-3040 Duration-only Inactive Summary Inactive Summary Manual Summary Rollup 929 SW-JPB-3040 Installation of instrumentation and monitoring device and condition surverselves	918		0%	548.2 days Mon 8/7/24	Tue 5/5/26	50.6 days					
modification and site setup 920 SW-JPA-5320 UU Detection, Trial Pit 0% 14 days Sat 9/11/24 Mon 25/11/24 0 days 921 SW-JPB-3040 Installation of instrumentation and monitoring device and condition survey Task Summary Froject 21/WSD/21 Revised Programme (Apr 2024) Date: 1 May 2024 Task Split To sk Split	919 SW-IPR-3000	·	0%	6 days Mon 8/7/24	Sat 13/7/24	92.2 days					
SW-JPB-3040 Installation of instrumentation and monitoring device and condition survey Task Summary Inactive Milestone Duration-only Start-only External Milestone Original Summary Inactive Summary Inactive Summary Manual Summary Rollup Finish-only Deadline Progress	5.5 5vv 3i b-3000	· · · · · · · · · · · · · · · · · · ·	070	3 44,3 141011 0/ // 24	501 15/ //24						
condition survey Project: 21/WSD/21 Revised May and Summary Rollup Project: 21/WSD/21 Revised May and Summary Rollup Revis											
Project: 21/WSD/21 Revised Program(Apr 2024) Split Inactive Milestone Duration-only Start-only External Milestone Critical Split Inactive Milestone Project Summary Inactive Summary Manual Summary Rollup Finish-only Deadline Progress	921 SW-JPB-3040		0%	14 days Sat 9/11/24	Mon 25/11/24	0 days			•		
Project: 21/MSD/21 Split Inactive Summary Inactive Summa		· · · · · · · · · · · · · · · · · · ·			1 Inneth - At'		Duratit-	Carra 1	F 5:	mal Milastona	Critical Calit
Date: 1 May 2024			•			·	*	ŕ	_		•
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Page 16		ivillestofie ▼ Inacti	uve 1a5K		ividilual IdSK			■ External Tasks	Critic	.uı	

O Activity ID T	Task Name	%	Duration	Start	Finish	Total Slack	2022
,		Comple	ete				2023 2024 2025 2026 2027 Qtr 4 Qtr 1 Qtr 2 Qtr 3 Qtr 4 Qtr 3 Qtr 4
922 SW-JPB-3060	Construction of launching pit 3 (CH190)	0%		Mon 25/11/24		-68.6 days	
923 SW-JPB-3055	TTA implementation at CH420, site clearance, road modification and site setup	0%	6 days	Sat 5/10/24	Sat 12/10/24	42.8 days	
924 SW-JPB-3050	Construction of receiving pit 5 (CH410)	0%	180 days	Thu 2/1/25	Mon 11/8/25	-24.6 days	
925 SW-JPB-3080	Plant mobilization and set-up at Launching pit 3	0%		Tue 8/7/25	Mon 21/7/25	-68.6 days	TBM 1
926 SW-JPB-3090	Excavation (220m) by Pipe Jacking method, PR=3m/d (ord drive 0%		Mon 21/7/25	Thu 16/10/25	-68.6 days	TBM 1
927 SW-JPB-3110	Plant demobilization	0%	6 days	Thu 16/10/25	Thu 23/10/25	-68.6 days	■ TBM 1
928 SW-JPB-3120	Pipe Installation (130m) (6m/d for pipe)	0%	22 days	Thu 23/10/25	Wed 19/11/25	-60.6 days	
929 SW-JPB-6180	Pressure Test (130m)	0%	10 days	Wed 19/11/25	Mon 1/12/25	-60.6 days	
930 SW-JPB-6240	Construction of Valve Chamber 5 (CH410)	0%	89 days	Mon 1/12/25	Fri 20/3/26	-60.6 days	
931 SW-JPB-3130	Reinstatement of Receiving Pit & Launching Pit	0%	36 days	Fri 20/3/26	Tue 5/5/26	273.4 days	
932	Alignment B - Chuk Yuen Road - Trenchless B4 (CHB610	Pit 6 to 0%	442 days	Fri 2/8/24	Tue 20/1/26	0 days	1
933 SW-JPB-4040	CHB740 Pit 7) - 2nd Drive TTA implementation at CH760, site clearance, road	0%	6 days	Fri 2/8/24	Fri 9/8/24	0 days	
333 311 31 3 10 10	modification and site setup	0,0	o days	2, 3, 2 .	3, 3, 2 .	0 00,5	
934 SW-JPB-4050	Construction of receiving pit 7 (CHB760)	0%	180 days	Fri 9/8/24	Fri 14/3/25	0 days	
935 SW-JPB-4070	Plant mobilization and set-up at Launching pit 6 (CHB6	10) 0%	12 days	Sat 15/3/25	Fri 28/3/25	-60.8 days	■ TBM 1
936 SW-JPB-4080	Excavation (130m) by Pipe Jacking method, PR=3m/d (Sat 29/3/25	Fri 20/6/25	-60.8 days	TBM 1
937 SW-JPB-4100	Plant demobilization	0%		Fri 20/6/25	Fri 27/6/25	-60.8 days	■ TBM 1
938 SW-JPB-4110	Pipe Installation (130m x 2nos.) (6m/d for pipe)	0%		Fri 27/6/25		328.2 days	
939 SW-JPB-6190	Pressure Test (130m)	0%		Wed 23/7/25	Mon 4/8/25	328.2 days	
940 SW-JPB-6195	Construction of Air Valve Chamber 7 (CHB760)	0%		Mon 4/8/25		380.2 days	
941 SW-JPB-4120	Reinstatement of Receiving Pit (CHB760)	0%		Tue 18/11/25	Fri 2/1/26	380.2 days	
942 SW-JPB-6200	Construction of Valve Chamber 6 (CHB610) Reinstatement of Launching Pit (CH610) after Pipe Inst	0%		Mon 4/8/25	Sat 6/12/25	328.2 days	
943 SW-JPB-6140	Reinstatement of Launching Pit (CH610) after Pipe Inst at Alignment A Trenchless A3	allation 0%	36 days	Sat 6/12/25	Tue 20/1/26	328.2 days	
944	Alignment B - Chuk Yuen Road - Trenchless B5 (CHB990	Pit 9 to 0%	466.6 day	rs Tue 24/12/24	Sat 18/7/26	-27 days	
0.45	CHB1100 Pit 11) - 4th Drive			T 0.1/1-1-	T 01/15/5	27 :	
945 SW-JPB-5000	TTA implementation at CHB990, site clearance, road modification and site setup	0%	1 day	Tue 24/12/24	Tue 24/12/24	-27 days	
946 SW-JPA-5340	UU Detection, Trial Pit	0%	14 days	Fri 27/12/24	Mon 13/1/25	-27 days	
947 SW-JPB-5040	Installation of instrumentation and monitoring device	and 0%	14 days	Fri 27/12/24	Mon 13/1/25	-27 days	
	condition survey						
948 SW-JPB-5060	Construction of launching pit 9 (CHB990)			Tue 14/1/25	Thu 21/8/25	-27 days	
949 SW-JPB-5045	TTA implementation at CH1180, site clearance, road modification and site setup	0%	6 days	Thu 20/3/25	Wed 26/3/25	-26.8 days	
950 SW-JPB-5050	Construction of receiving pit 11 (CHB1180)	0%	180 days	Thu 27/3/25	Sat 1/11/25	-27 days	
951 SW-JPB-5080	Plant mobilization and set-up at Launching pit 9	0%		Thu 23/10/25	Fri 7/11/25	-68.6 days	■ TBM 1
952 SW-JPB-5090	Excavation (110m) by Pipe Jacking method, PR=3m/d	4th drive 0%		Fri 7/11/25	Sat 20/12/25	-68.6 days	TBM 1
953 SW-JPB-5110	Plant demobilization	0%	6 days	Sat 20/12/25	Tue 30/12/25	-68.6 days	■ TBM 1
954 SW-JPB-5120	Pipe Installation (110m x 2nos.; 6m/d for pipe)	0%	29 days	Tue 30/12/25	Mon 2/2/26	218.4 days	
955 SW-JPB-5130	Reinstatement of Receiving Pit (CHB1170)	0%	36 days	Fri 13/2/26	Mon 30/3/26	271.4 days	
956 SW-JPB-6150	Reinstatement of Launching Pit (CHB990)	0%	36 days	Fri 5/6/26	Sat 18/7/26	218.4 days	
957 SW-JPB-6210	Pressure Test (110m) Trenchless B5	0%	10 days	Mon 2/2/26	Fri 13/2/26	218.4 days	
958 SW-JPB-6220	Construction of Valve Chamber 9 (CHB990)	0%	89 days	Fri 13/2/26	Fri 5/6/26	218.4 days	
959	Alignment B - Chuk Yuen Road - Open Trench	12%	L106.8 day	y:Sun 1/10/23	Mon 14/6/27	-51.6 days	
960	Alignment B - Chuk Yuen Road - Open Trench between	3 and 0%	913.2 day	rs Tue 28/5/24	Mon 14/6/27	-51.6 days	
961 SW-OTB-3090	B4 (CH420 to CH610) Sheet piling, Excavation, ELS, Pipe Laying, Backfilling &	Road 0%	90 days	Thu 23/10/25	Mon 9/2/26	347.4 days	Open Trench Gang 2
3W-01B-309C	reinstatement, (30m long)~CHB420 to CHB450	Nodu 0/6	90 uays	111u 23/10/23	101011 9/2/20	347.4 uays	Open Hench daily 2
962 SW-OTB-3080	Sheet piling, Excavation, ELS, Pipe Laying, Backfilling &	Road 0%	120 days	Tue 28/5/24	Sat 19/10/24	741.6 days	Open Trench Gang 2
062 SW OTB 2076	reinstatement, (40m long) CHB450 to CHB490	Dood 00/	150 days	F=: 20/2/26	Th.: 17/0/26	F1 C dove	Open Trench Gang 3
963 SW-OTB-3070	Sheet piling, Excavation, ELS, Pipe Laying, Backfilling & reinstatement, (50m long)∼CHB490 to CHB540	Road 0%	TOO gays	Fri 20/3/26	Thu 17/9/26	-51.6 days	Open Trench Gang 3
964 SW-OTB-3010	Sheet piling, Excavation, ELS, Pipe Laying, Backfilling &	Road 0%	60 days	Thu 17/9/26	Mon 30/11/26	-51.6 days	Open Trench Gang 2
065 644 070 222	reinstatement, (20m long)~CHB540 to CHB560	Dood Co.	450 '	Ma- 20/44/2-	Th.: 2/6/27	F1.C.1	
965 SW-OTB-3020	Sheet piling, Excavation, ELS, Pipe Laying, Backfilling & reinstatement, (50m long)∼CHB560 to CHB610	Road 0%	150 days	Mon 30/11/26	Thu 3/6/27	-51.6 days	Open Tren
966 SW-OTB-8110	Pressure Test (190m) Open Trench B3 to B4	0%	8 days	Thu 3/6/27	Mon 14/6/27	-51.6 days	
967	Alignment B - Chuk Yuen Road - Open Trench B4 to B5 (CH770 21%	820.8 day	s Sun 1/10/23	Mon 29/6/26	227.4 days	· · · · · · · · · · · · · · · · · · ·
0::	to CH990)				- 1 - 1 - 1		
968 21.PRW.PO5.	TTA implementation			Sun 1/10/23	Fri 20/10/23	0 days	
969 SW-OTB-4110	Sheet piling, Excavation, ELS, Pipe Laying, Backfilling & reinstatement, (20m long)∼CH770 to CH790	koad 0%	60 days	Fri 6/2/26	Thu 23/4/26	227.4 days	Open Trench Gang 5
970 SW-OTB-4100	Sheet piling, Excavation, ELS, Pipe Laying, Backfilling &	Road 0%	180 days	Tue 8/7/25	Fri 6/2/26	227.4 days	Open Trench Gang 5
	reinstatement, (60m long)~CH790 to CH850						
971 SW-OTB-4090	Sheet piling, Excavation, ELS, Pipe Laying, Backfilling &	Road 0%	180 days	Mon 25/11/24	Mon 7/7/25	227.4 days	Open Trench Gang 5
972 SW-OTB-4080	reinstatement, (60m long)~CH850 to CH910 Sheet piling, Excavation, ELS, Pipe Laying, Backfilling &	Road 6%	186 days	Wed 17/4/24	Mon 25/11/24	227.4 days	Open Trench Gang 5
3 3.5 4000	reinstatement, (48m long)~CH910 to CH958					aays	
973 SW-OTB-4070	Sheet piling, Excavation, ELS, Pipe Laying, Backfilling &	Road 100%	143.8 day	rs Sat 21/10/23	Tue 16/4/24	0 days	Open Trench Gang 5[101%]
974 SW-OTB-4060	reinstatement, (15m long)~CH958 to CH973 Sheet piling, Excavation, ELS, Pipe Laying, Backfilling &	Road 0º/	45 days	Thu 23/4/26	Wed 17/6/26	227.4 days	
34V-01B-400C	reinstatement, (15m long)~CH973 to CH990	Noau U%	45 udys	111u 23/4/20	vveu 1//0/20	221.4 UdyS	
975 SW-OTB-8130	Pressure Test (220m) Open Trench B4 to B5	0%	10 days	Wed 17/6/26	Mon 29/6/26	227.4 days	
Project: 21/WSD/21	Task	Summary	г		Inactive Milestone	\langle	Duration-only Start-only External Milestone 🔷 Critical Split
Revised Programme (Apr		,	ary F		Inactive Milestone Inactive Summary	*	Duration-only Start-only External Milestone Critical Split Manual Summary Rollup Finish-only Deadline Progress
		,	ary l	1		\rightarrow	







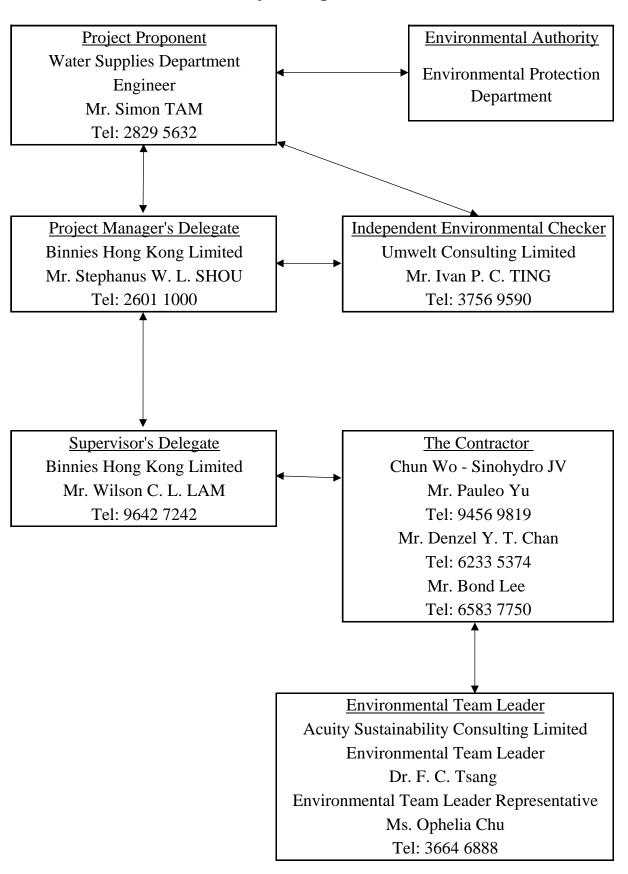
Appendix B

Project Organization Chart and Key Personnel Contact





Project Organization Chart







Appendix C Event and Action Plans





Table C1 Event and Action Plan for Air Quality (Dust)

_		Ac	ction	
Event	ET Leader	IEC	ER	Contractor
Action Level exceedance for one sample	 Identify source, investigate the causes of exceedance and propose remedial measures; Inform IEC and ER; Repeat measurement to confirm finding; Increase monitoring frequency to daily. 	 Check monitoring data submitted by ET; Check contractor's working method. 	Notify Contractor.	 Rectify any unacceptable practice; Amend working methods if appropriate.
Action level exceedance for two or more consecutive samples	 Identify source; Inform IEC and ER; Advise the ER on the effectiveness of the proposed remedial measures; Repeat measurements to confirm findings; Increase monitoring frequency to daily; Discuss with IEC and Contractor on remedial actions required; If exceedance continues, arrange meeting with IEC and ER; If exceedance stops, cease additional monitoring. 	 Check monitoring data submitted by ET; Check Contractor's working method; Discuss with ET and Contractor on possible remedial measures; Advise the ET on the effectiveness of the proposed remedial measures; Supervise Implementation of remedial measures. 	 Confirm receipt of notification of failure in writing; Notify Contractor; Ensure remedial measures properly implemented. 	 Submit proposals for remedial actions to ER within 3 working days of notification; Implement the agreed proposals; Amend proposal if appropriate.
Limit level exceedance for one sample	• Identify source, investigate the causes of exceedance and propose remedial measures;	• Check monitoring data submitted by ET;	Confirm receipt of notification of failure in writing;	Take immediate action to avoid further exceedance;





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





Table C2 Event/Action Plan for Construction Noise

Table C2	Event/Action Plan for Construction	II INUISE		
Event		A	ction	
Event	ET	IEC	ER	Contractor
Action Level Exceedance	 Notify IEC, ER and Contractor; Carry out investigation; Report the results of investigation to the IEC, ER and Contractor; Discuss with the Contractor and formulate remedial measures; Increase monitoring frequency to check mitigation effectiveness. 	 Review the analysed results submitted by the ET; Review the proposed remedial measures by the Contractor and advise the ER accordingly; Supervise the implementation of remedial measures. 	 Confirm receipt of notification of failure in writing; Notify Contractor; Require Contractor to propose remedial measures for the analysed noise problem; Ensure remedial measures are properly implemented. 	 Submit noise mitigation proposals to IEC and ER; Implement noise mitigation proposals.
Limit Level Exceedance	 Identify source; Inform IEC, ER, EPD and Contractor; Repeat measurements to confirm findings; Increase monitoring frequency; Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; Inform IEC, ER and EPD the causes and actions taken for the exceedances; Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; If exceedance stops, cease additional monitoring. 	 Discuss amongst ER, ET, and Contractor on the potential remedial actions; Review Contractors remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; Supervise the implementation of remedial measures. 	 Confirm receipt of notification of failure in writing; Notify Contractor; Require Contractor to propose remedial measures for the analysed noise problem; Ensure remedial measures properly implemented; If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated. 	 Take immediate action to avoid further exceedance; Submit proposals for remedial actions to the IEC within three working days of notification; Implement the agreed proposals; Resubmit proposals if problem still not under control; Stop the relevant portion of works as determined by the ER until the exceedance is abated.



Table C3 Event/Action Plan for Landscape and Visual

F	•	Ac	etion	
Event	ET	IEC	ER	Contractor
Action Level Exceedance	 Inform the IEC, ER and the Contractor; Discuss remedial actions with IEC, ER and Contractor; and Monitor remedial actions until rectification has been completed. 	 Check inspection report; Check Contractor's working method; Discuss with ET, ER and Contractor on possible remedial measures; Advise ER on effective of proposed remedial measures; and Check implementation of remedial measures. 	 Confirm receipt of notification of non-conformity in writing; Review and agree on the remedial measures proposed by the Contractor; and Ensure remedial measures are properly implemented. 	 Identify source and investigate the non-conformity; Amend working methods agreed with ER as appropriate; and Rectify damage and undertake any necessary replacement.
Limit Level Exceedance	 Identify sources; Inform the Contractor, IEC and ER; Discuss inspection frequency; Discuss remedial actions with IEC, ER and Contractor; Monitor remedial actions until rectification has been completed; and If non-conformity stops, cease additional monitoring. 	 Check inspection report; Check Contractor's working method; Discuss with ET, ER and Contractor on possible remedial measures; and Advise ER on effectiveness of proposed remedial measures. 	Notify the Contractor; In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented; and Supervise implementation of remedial measures.	 Identify source and investigate the non-conformity; Implement remedial measures; Amend working methods agreed with ER as appropriate; Rectify damage and undertake any necessary replacement. Stop relevant portion of works as determined by ER until the non-conformity is abated.

Notes:

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





Appendix D Project Implementation Schedule





Environmental Mitigation Implementation Schedule (EMIS)

EM&A Log Ref.	Recommended Mitigation Measures	Objective of the recommended measure & main concerns to address	Implement Agent	Location / Timing	Implementation Timing	Requirements and / or Standards to be Achieved	Implementation status
Air Qua	lity						
D1	Dust suppression measures, including watering once per hour, will be incorporated in accordance with the requirements of the Air Pollution Control (Construction Dust) Regulation. Dust filter shall be installed at the ventilation system of the emission source at the tunnel portal chimney. The proposed dust control measures presented in Table 3.11 of the EIA report shall be followed.	Minimize dust impact at the nearby sensitive receivers	Contractor	Tunnel Portal	Construction Phase	Air Pollution Control Ordinance To control the dust impact to meet HKAQO and EIAO- TM criteria	Implemented
D2	 The following dust suppression measures should be incorporated into contract document. The standard dust suppression measures as stipulated in the Air Pollution Control (Construction Dust) Regulation to control the dust nuisance shall be implemented throughout the construction phase: The contractor shall observe and comply with Air Pollution Control (Construction Dust) Regulation and implement all the required mitigation measures. The contractor shall undertake precautions at all times to prevent dust nuisance and smoke as a result of his activities. The contractor shall ensure a highly efficient dust filter (at least 80% efficiency) to be installed at the ventilation exhaust to treat the exhausting air from cavern. The contractor shall frequently clean and water the site to minimize fugitive dust emissions. The contractor shall ensure that there will be adequate water supply/storage for dust suppression. 	Minimize dust impact at the nearby sensitive receivers	Contractor	All Construction sites	Construction Stage	Air Pollution Control Ordinance To control the dust impact to meet HKAQO and EIAO- TM criteria	Implemented





EM&A Log Ref.	Recommended Mitigation Measures	Objective of the recommended measure & main concerns to address	Implement Agent	Location / Timing	Implementation Timing	Requirements and / or Standards to be Achieved	Implementation status
	 The working area of any pavement breaking, excavation or earth moving operation should be sprayed with water immediately before, during and after the operation to avoid dust generation. Any stockpile of dusty material should be properly covered by tarpaulin or other impervious sheeting. Vehicles leaving a site loaded with dusty materials should be covered by tarpaulin or other impervious sheeting. Wheel washing facilities shall be installed and used by all vehicles leaving the site. No earth, mud, debris, dust and the like shall be deposited on public roads. Water in the wheel cleaning facility shall be changed at frequent intervals and sediments shall be removed regularly. The contractor shall submit details of proposals for the wheel cleaning facility. Such wheel washing facilities shall be usable prior to any earthworks excavating activity on the site. The Contractor shall also provide a hard-surfaced road between any washing facility and the public road. Any materials dropped on paved roads shall be cleaned up immediately to prevent dust nuisance. The contractor shall devise, arrange methods of working and carrying out the works in such a manner so as to minimize dust impacts on the surrounding environment, and shall provide experienced personnel with suitable training to ensure that these methods are implemented. 						
D3	The contractor shall also implement specific dust mitigation measures for excavation, drilling and blasting activities during the construction of tunnel portal. These include the use of blast nets / canvas covers and ensure portal door is properly closed.	Minimize dust impact at the nearby sensitive receivers	Contractor	All Construction sites	Construction Stage	Air Pollution Control Ordinance To control the dust impact to meet	To be Implemented





EM&A Log Ref.	Recommended Mitigation Measures	Objective of the recommended measure & main concerns to address	Implement Agent	Location / Timing	Implementation Timing	Requirements and / or Standards to be Achieved	Implementation status
						HKAQO and EIAO- TM criteria	
D4	Before the commencement of any works, the Engineer may require the contractor to submit the methods of working, construction plant or equipment and air pollution control measures to be used on the site to be made available for inspection and approval.	Minimize dust impact at the nearby sensitive receivers	Contractor	All Construction sites	Construction Stage	Air Pollution Control Ordinance To control the dust impact to meet HKAQO and EIAO- TM criteria	Implemented
D5	 The following precautionary measures shall be incorporated into contract document and implemented throughout the construction. The contractor shall ensure the use of electricity power equipment is connected to the main electricity supply for better emission estimation. The contractor shall avoid the use of diesel power machines and generators as far as practicable. The contractor shall avoid the use of non-road mobile machineries which exempt by the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation, and seek the ones with proper label issued by EPD. The contractor shall observe the requirement of DEVB TC(W) No. 13/2020, to apply a temporary electricity and water supply with a target that the necessary cables/water mains laying works could be completed before the commencement of the works contract. 	Avoid burdening the surrounding NO ₂ concentration	Contractor	All Construction sites	Construction Stage	Air Pollution Control Ordinance To control the dust impact to meet HKAQO and EIAO-TM criteria DEVB TC(W) No. 13/2020	Implemented





EM&A Log Ref.	Recommended Mitigation Measures	Objective of the recommended measure & main concerns to address	Implement Agent	Location / Timing	Implementation Timing	Requirements and / or Standards to be Achieved	Implementation status
Construc	tion Noise						
N1	The contractor should limit the pipe section to be constructed by open cut method in a length of no more than 30 m at any one time when works are in close proximity to NSRs. Each work front along the proposed watermain laying should be separated by a clearance distance of at least 60 m.	Control construction noise impacts	Contractor	All construction area for watermain laying works	Construction stage	• EIAO-TM	To be implemented
N2	Use of quiet PME is considered to be a practicable means to mitigate the construction noise impact. Quiet plant is defined as a PME having actual SWL lower than the value specified in the GW-TM.	Control construction noise impacts	Contractor	All construction area for watermain laying works	Construction stage	EIAO-TM A Practical Guile for the Reduction of Noise from construction works	Implemented
N3	The use of noise barrier for certain PME could generally provide a 5 dB(A) reduction for movable PME and 10 dB(A) for stationary PME. The barrier material shall have a superficial surface density of not less than 10 kg/m² and have no opening or gaps. Sound absorbent lining inside the enclosure should be at least 25 mm thick.	Control construction noise impacts	Contractor	All construction area for watermain laying works	Construction stage	• EIAO-TM	Implemented
N4	Provision of movable noise barriers of 3m or above in height and with a short-cantilevered section on the top with skid footing should be used and located within a few metres of stationary plant and mobile plant such that the line of sight to the NSR is blocked by the barriers.	Control construction noise impacts	Contractor	All construction area for watermain laying works	Construction stage	• EIAO-TM	To be implemented
N5	Noise enclosure lined with absorptive materials shall be provided at the tunnel portal to mitigate the noise from tunnel/cavern construction. The enclosure is a gap free enclosure with acoustic doors for vehicular access purpose. The acoustic doors shall remain closed throughout the construction period. The sheet material mass of the noise enclosure should be at least 10 kg/m² and sound-absorbent lining inside the enclosure should be at least 25 mm thick.	Control construction noise impacts	Contractor	Tunnel Portal	Construction stage	EIAO-TM A Practical Guile for the Reduction of Noise from construction works	To be implemented





EM&A Log Ref.	Recommended Mitigation Measures	Objective of the recommended measure & main concerns to address	Implement Agent	Location / Timing	Implementation Timing	Requirements and / or Standards to be Achieved	Implementation status
N6	Noise barrier/enclosure should be inspected and maintained regularly. The contractor should design and provide details of the temporary noise barriers and noise enclosure to the Engineer for approval.	Control construction noise impacts	Contractor	All Construction sites	Construction stage	• EIAO-TM	Implemented
N7	For NSR5, NSR14, NSR19 and NSR 22, the construction works of Fresh Water/Salt Water Mainlaying (Reinstatement Works) shall be arranged and carried out during School Holidays (i.e., the section of the mainlaying alignment is 20m measured from the school site boundary).	Control construction noise impacts	Contractor	All Construction area for watermain laying works	Construction stage	• EIAO-TM	To be Implemented
N8	During examination period, no mainlaying works will be carried out within 30m (for NSR 14, NSR 19 and NSR 22) or 50m (for NSR 5) from the school site boundary.	Control construction noise impacts	Contractor	All Construction area for watermain laying works	Construction stage	• EIAO-TM	To be Implemented
N9	For NSR13, NSR20 and P1, the concrete lorry mixer shall be located 10 m away from the residential site boundary during the construction works of Fresh Water/Salt Water Mainlaying (Reinstatement Works).	Control construction noise impacts	Contractor	All Construction area for watermain laying works	Construction stage	• EIAO-TM	To be Implemented
N10	 Good Site Management Practices Only well-maintained plant should be operated onsite, and plant will be serviced regularly during the construction phase; Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction phase; Mobile plant, if any, should be sited away from NSRs; Machines and plant (such as trucks) that may be in intermittent use should be shut down between work periods or will be throttled down to a minimum; Plant known to emit noise strongly in one direction should be orientated so that the noise is directed away from the nearby NSRs; 	Control construction noise impacts	Contractor	All Construction sites	Construction stage	• EIAO-TM	Implemented





EM&A Log Ref.	Recommended Mitigation Measures	Objective of the recommended measure & main concerns to address	Implement Agent	Location / Timing	Implementation Timing	Requirements and / or Standards to be Achieved	Implementation status
	 Material stockpiles and other structures should be effectively utilised in screening noise from on-site construction activities; The contractor should devise, arrange methods of working and carrying out the works in such manner as to minimise noise impacts on the surrounding environment, and should provide experience personnel with suitable training to ensure that all these measures are implemented properly; and; The contractor should minimise construction noise exposure to the school (especially during examination periods) as much as possible. The contractor should liaise with the school and Examination Authority to ascertain the exact dates and times of all examination periods during the course of the contract and to avoid noisy activities during these periods. 						
Operatio	n Noise						
N11	 Choose quieter plant; Include noise levels specification when ordering new mechanical equipment such as pumps and ventilation systems; Locate fixed plant, louvres or openings away from NSRs; Locate fixed plant in walled plant rooms or in specially designed enclosures; Ensure pump room doors and tunnel portal doors are kept closed; Silencers, acoustic louvres or acoustic doors should be used where necessary; and Develop and implement a regularly scheduled plant maintenance programme so that equipment is properly 	Reduce the operation noise	Project Proponent	Tunnel Portal / Ancillary building / SRs in carven	Prior to operation of the Project for planned NSRs	• EIAO-TM	To be implemented





•	1						
EM&A Log Ref.	Recommended Mitigation Measures	Objective of the recommended measure & main concerns to address	Implement Agent	Location / Timing	Implementation Timing	Requirements and / or Standards to be Achieved	Implementation status
	operated and serviced in order to maintain controlled level of noise. The programme should be implemented by properly trained personnel.						
Water Qu	uality (Construction Phase)						
W1	General Construction Site Practice The Contractor should observe and comply with the Water Pollution Control Ordinance and its subsidiary regulations and obtain a discharge license under the Ordinance for discharge of effluent from the construction site. 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. The Contractor should carry out the Project works in such a manner as to minimise adverse impacts on the water quality during execution of the works. In particular, the Contractor should arrange the working method to minimise the effects on the water quality within and outside the Project Site and on the transport routes. In addition, the management of construction site drainage from the Project will follow guidelines provided in ProPECC PN 1/94 – "Construction Site Drainage". The mitigation measures described in ETWB TC(W) No. 5/2005 shall also be followed where necessary for construction activities in close vicinity to inland watercourses.	To minimise water quality impact from construction site runoff and general construction activities	Contractor	All construction sites where applicable	Construction stage	• Water Pollution Control Ordinance • ProPECC PN1/94 • ETWB TC(W) No. 5/2005 • EIAO-TM • TM-DSS	Implemented
W2	Construction Site Runoff and General Construction Activities Proper site management measures should be implemented to control site runoff and drainage, and thereby prevent high sediment loadings from reaching	To minimize water quality impact from construction site runoff and general	Contractor	All construction sites where applicable	Construction stage	• Water Pollution Control Ordinance • ProPECC PN1/94 • ETWB TC(W) No. 5/2005 • EIAO-TM	Implemented





EM&A Log Ref.	Recommended Mitigation Measures	Objective of the recommended measure & main concerns to address	Implement Agent	Location / Timing	Implementation Timing	Requirements and / or Standards to be Achieved	Implementation status
	downstream sections of the river/stream. The mitigation measures shall include the following practices:	construction activities				• TM-DSS	
	• Provision of perimeter channels to intercept storm- runoff from outside the site. These should be constructed in advance of the construction works.						
	 Temporary ditches such as channels, earth bunds or sandbag barriers should be included to facilitate runoff discharge into the stormwater drain, via a sand/silt basin/trap. 						
	 Works programme should be designed to minimise works areas at any one time, thus minimizing exposed soil areas and reducing the potential for increased siltation and site runoff. 						
	Sand/silt removal facilities such as sand traps, silt traps and sediment basins should be provided to remove the sand/silt particles from run-off where necessary. These facilities should be properly and regularly cleaned and maintained. These facilities should be carefully planned to ensure that they would be installed at appropriate locations to capture all surface water generated on site.						
	• Careful programming of the works to avoid excavation works during the rainy season (April to September).						
	Temporary access roads (if any) should be protected by crushed gravel and exposed slope surfaces shall be protected (e.g. by tarpaulin) when rainstorms are likely;						
	Open stockpiles of construction materials on-site should be covered with tarpaulin or similar fabric during rainstorms to prevent erosion. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system						





Earthwork final surfaces should be well compacted, and the subsequent permanent work or surface protection should be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate drainage like intercepting channels should be provided where necessary. Measures should be taken to minimise the ingress of rainwater into trenches. If excavation of trenches in wet seasons is necessary, they should be dug and backfilled in short sections. Rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities. Manholes should always be adequately covered and	y Eliterative port					
and the subsequent permanent work or surface protection should be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate drainage like intercepting channels should be provided where necessary. • Measures should be taken to minimise the ingress of rainwater into trenches. If excavation of trenches in wet seasons is necessary, they should be dug and backfilled in short sections. Rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities. • Manholes should always be adequately covered and	Recommended Mitigation Measures	recommended measure & main concerns to	-		Standards to be	Implementation status
materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers. Discharge of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system. • Water used in ground boring and drilling for site investigation or rock/soil anchoring should as far as practicable be recirculated after sedimentation. When there is a need for final disposal, the wastewater should be discharged into storm drains via silt removal facilities. • All vehicles and plant should be cleaned before they leave a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. A wheel washing bay should be provided at every site if practicable and wash-water should have sand and silt settled out or removed before discharging into storm drains. The section of construction road between the wheel washing bay and the public road should be	 and the subsequent permanent work or surface protection should be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate drainage like intercepting channels should be provided where necessary. Measures should be taken to minimise the ingress of rainwater into trenches. If excavation of trenches in wet seasons is necessary, they should be dug and backfilled in short sections. Rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities. Manholes should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers. Discharge of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system. Water used in ground boring and drilling for site investigation or rock/soil anchoring should as far as practicable be recirculated after sedimentation. When there is a need for final disposal, the wastewater should be discharged into storm drains via silt removal facilities. All vehicles and plant should be cleaned before they leave a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. A wheel washing bay should be provided at every site if practicable and wash-water should have sand and silt settled out or removed before discharging into storm drains. The section of construction road between the 					





EM&A Log Ref.	Recommended Mitigation Measures	Objective of the recommended measure & main concerns to address	Implement Agent	Location / Timing	Implementation Timing	Requirements and / or Standards to be Achieved	Implementation status
	paved with backfall to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.						
W3	Reuse of treated site runoff shall be considered as far as practicable for onsite activities such as dust suppression, wheel washing and general cleaning, etc.	To minimize water quality impact from construction site runoff and general construction activities	Contractor	All construction sites where applicable	Construction stage	 Water Pollution Control Ordinance ProPECC PN1/94 ETWB TC(W) No. 5/2005 EIAO-TM TM-DSS 	N/A
W4	Sewage Generated by Construction Workforce No discharge of sewage to the storm drains and inland watercourse will be allowed. Domestic sewage /wastewater generated by workforce on-site should be collected in a suitable storage facility such as portable chemical toilets. An adequate number of portable toilets will be provided during the construction phase, with a licensed collector employed to clean the chemical toilets on a regular basis and be responsible for collection and disposal of the sewage. According to the Reference Materials on Construction Site Welfare, Health and Safety Measures that issued by the Construction Industry Council, the number of toilet facilities provided on site shall be at a ratio of not less than one for every 25 workers. These toilets should be maintained in a state that will not deter the workers from using them.	To minimise water quality impact from sewage effluent in construction phase	Contractor	All construction sites where applicable	Construction stage	• Water Pollution Control Ordinance • ProPECC PN1/94 • ETWB TC(W) No. 5/2005 • EIAO-TM • TM-DSS	Implemented
W5	Accidental Spillage of Chemicals The following mitigation measures should be implemented to avoid adverse impacts of chemical spillage:	To prevent water quality impact due to chemical spillage	Contractor	All construction sites where applicable	Construction stage	Water Pollution Control Ordinance Waste Disposal (Chemical Waste) (General) Regulation ProPECC PN1/94	Implemented





EM&A Log Ref.	Recommended Mitigation Measures	Objective of the recommended measure & main concerns to address	Implement Agent	Location / Timing	Implementation Timing	Requirements and / or Standards to be Achieved	Implementation status
	 Waste streams classifiable as chemical wastes should be properly stored, collected and treated for compliance with the requirements set out in the Waste Disposal Ordinance and its subsidiary Waste Disposal (Chemical Waste) (General) Regulation. All fuel tanks and chemical storage areas should be provided with locks and be sited on paved areas. The storage areas should be surrounded by bunds with a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled oil, fuel and chemicals from reaching the receiving waters. Waste oil should be collected and stored for recycling or disposal, in accordance with the Waste Disposal Ordinance. Vehicle and plant servicing areas, vehicle wash bays and lubrication bays should, as far as possible, be located within roofed areas. The drainage in these covered areas should be connected to foul sewers via a petrol interceptor. 					• ETWB TC(W) No. 5/2005 • EIAO-TM • TM-DSS	
W6	 Groundwater infiltration and Groundwater Drawdown To minimize the groundwater infiltration, the following groundwater control measures are recommended: The Contractor shall undertake rigorous probing of the ground ahead of excavation works to identify zones of significant water inflow that could occur as a result of discrete, permeable features. In such zones of significant water inflow, the overall inflow would be reduced by means of cut-off grouting executed ahead of the tunnel/cavern advance. Where water inflow quantities are excessive, pregrouting will be required to reduce the water inflow into the tunnel/cavern. 	To minimise water quality impact from groundwater infiltration	Contractor	All construction sites where applicable	Construction stage	 Water Pollution Control Ordinance ProPECC PN1/94 ETWB TC(W) No. 5/2005 EIAO-TM TM-DSS 	To be Implemented





EM&A Log Ref.	Recommended Mitigation Measures	Objective of the recommended measure & main concerns to address	Implement Agent	Location / Timing	Implementation Timing	Requirements and / or Standards to be Achieved	Implementation status
	 In case of excessive infiltration being observed as a result of the tunnelling or excavation works even after pre- grouting measures, post-grouting should be applied as far as practicable. Waterproof lining will be installed after the formation of the tunnels and caverns. In the event of seepage of groundwater occurs, groundwater should be pumped out from works areas and discharged to the storm drains via silt removal facilities. The discharges during construction phase shall comply with WPCO requirements 	Tominimin	Contractor	All	Construction	• Water Pollution	To be
W7	Construction Works in Close Proximity of Inland Watercourses The mitigation measures proposed for "General Construction Site Practice" and "Construction Site Runoff and General Construction Activities" in Sections 5.8.2 and 5.8.3 of the EIA report shall be implemented properly to minimize the water quality impacts during to the construction works in close proximity of inland watercourse.	To minimise water quality impact from construction site near watercourses	Contractor	All construction sites where applicable	Construction stage	• ProPECC PN1/94 • ETWB TC(W) No. 5/2005 • EIAO-TM • TM-DSS	Inplemented
W8	The practices outlined in ETWB TC(W) No. 5/2005 shall also be adopted where applicable to minimise the water quality impacts upon any natural streams or other inland watercourses. Relevant mitigation measures are listed below: • The use of less or smaller construction plants may be specified in areas close to the inland watercourses to reduce the disturbance to the surface water. • Temporary storage of materials (e.g. equipment, chemicals and fuel) and temporary stockpile of	To minimise water quality impact from construction site near watercourses	Contractor	The relocated DHSRs	Construction stage	 Water Pollution Control Ordinance ProPECC PN1/94 ETWB TC(W) No. 5/2005 EIAO-TM TM-DSS 	Implemented





EM&A Log Ref.	Recommended Mitigation Measures	Objective of the recommended measure & main concerns to address	Implement Agent	Location / Timing	Implementation Timing	Requirements and / or Standards to be Achieved	Implementation status
	 construction debris and spoil should be located well away from any watercourses. Stockpiling of construction materials and dusty materials should be covered and located away from any watercourses. Construction debris and spoil should be covered up and/or disposed of as soon as possible to avoid being washed into the nearby inland watercourses. Adequate lateral support may need to be erected in order to prevent soil/mud from slipping into the watercourses. Construction works close to the inland watercourses should be carried out in dry season as far as practicable where the flow in the surface channel or stream is low. Cleansing Effluent Generated from Washing of Interior of Structures 	To minimise water quality	Contractor	The relocated DHSRs	Construction	• Water Pollution Control Ordinance	To be Implemented
W9	The cleaning effluent containing SS and residual chlorine should be settled out through the sedimentation tank and dechlorinated by the de-chlorination plant. The discharge quality of the cleansing effluent generated from washing of interior of structures after the construction shall meet the requirements specified in the discharge licence and the cleaning effluent should be treated properly so that it satisfies all the standards listed in the TM-DSS	impact from construction site effluent		DIISKS	stage	 ProPECC PN1/94 ETWB TC(W) No. 5/2005 EIAO-TM TM-DSS 	Implemented
Water Q	uality (Operation Phase)						
W10	The ProPECC PN 5/93 "Drainage Plans subject to Comments by Environmental Protection Department" provides guidelines and practices for handling, treatment and disposal of various effluent discharges to stormwater drains and foul sewers. The design of site drainage and disposal of various site effluents generated within the	To control operational site effluents	Further Operator	The relocated DHSRs	Operation stage	• Water Pollution Control Ordinance • ProPECC PN5/93	To be Implemented





EM&A Log Ref.	Recommended Mitigation Measures	Objective of the recommended measure & main concerns to address	Implement Agent	Location / Timing	Implementation Timing	Requirements and / or Standards to be Achieved	Implementation status
	development area should follow the relevant guidelines and practices as given in the ProPECC PN 5/93.						
W11	Effluents from Cleaning of Service Reservoir Treatment and disposal of cleansing water during annual cleaning and maintenance of the service reservoirs shall follow the WSD's current normal practice with reference to Sections 23.24 – 23.25 of the General Specification for Civil Engineering Works. Portable water incorporated with a mixture of sterilizing chemicals shall be used for washing water retaining structures. The cleansing effluent shall be settled out through the sedimentation task and dechlorinated by a dechlorination unit before being discharged to drainage system. Agreement of DSD and discharge license from EPD shall be obtained before commencing any of the discharges during operation phase	To control operational site effluents	Further Operator	The relocated DHSRs	Operation stage	Water Pollution Control Ordinance Sections 23.23-23.24 of the General Specification for Civil Engineering Works TM-DSS	To be Implemented
W12	 Non-point Source Surface Runoff Best Management Practices (BMPs) to reduce non-point source surface water pollution are proposed as follows: Exposed surface shall be avoided within access road and portal/ancillary building areas to minimise soil erosion. The access road and the portal/ancillary building areas shall be either hard paved or covered by landscaping area where appropriate. Screening facilities such as standard gully grating and trash grille, with spacing which is capable of screening off large substances such as fallen leaves and rubbish should be provided at the inlet of drainage system. Road gullies with standard design and silt traps should be provided to remove particles present in stormwater runoff, where appropriate. Good management measures such as regular cleaning and sweeping of road surface/ open areas are suggested. The road surface/ open area cleaning 	To minimize water quality impact from non-point source surface run-off	Further Operator	The relocated DHSRs	Design and Operation stages	Water Pollution Control Ordinance ProPECC PN5/93	To be Implemented





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	 should also be carried out prior to occurrence of rainstorm. Manholes, as well as storm water gullies, ditches provided at the Project site should be regularly inspected and cleaned (e.g. monthly). Additional inspection and cleansing should be carried out before forecast heavy rainfall. 						
Waste M	anagement (Construction Phase)						
WM1	The waste management hierarchy shall apply to the construction waste management (i.e. in order of desirability: avoidance, minimization, recycling, treatment and safe disposal of waste).	Minimize waste generation during construction	Contractor	All construction sites	Design and Construction stages	• Waste Disposal Ordinance • EIAO	Implemented
WM2	The contractor should develop and provide toolbox talk for on-site sorting of C&D materials to enhance workers' awareness in handling, sorting, reuse and recycling of C&D materials. Requirements for staff training should be included in the contractor's Environmental Management Plan (EMP). The EMP shall be submitted to the Architect/Engineer for approval before construction works in accordance with ETWB TC(W) No.19/2005.	Minimize waste generation during construction	Contractor	All construction sites	Construction stages	• Waste Disposal Ordinance • EIAO • ETWB TC(W) No. 19/2005 • DEVB TC(W) No. 6/2010	Implemented
WM3	Good planning and site management practice should be employed to eliminate over-ordering or mixing of construction materials to reduce wastage. Proper storage and site practices will minimise the damage or contamination of construction materials.	Ensure proper waste management system throughout the construction	Contractor	All construction sites	Construction stages	 Waste Disposal Ordinance EIAO ETWB TC(W) No. 19/2005 DEVB TC(W) No. 6/2010 	Implemented
WM4	Where waste generation is unavoidable, the potential for recycling or reuse should be rigorously explored. If waste cannot be recycled, disposal routes described in the EMP should be followed. A recording system for the amount of wastes generated, recycled and disposed (including the	Reduce waste generation	Contractor	All Construction sites	Construction stage	• Waste Disposal Ordinance • EIAO • ETWB TC(W) No. 19/2005	Implemented





EM&A Log Ref.	Recommended Mitigation Measures	Objective of the recommended measure & main concerns to address	Implement Agent	Location / Timing	Implementation Timing	Requirements and / or Standards to be Achieved	Implementation status
	disposal sites) should be implemented. In order to monitor the disposal of C&D material and solid wastes at public filling facilities and landfills and to control flytipping, a trip-ticket system should be included. One may make reference to DEVB TC(W) No. 6/2010 for details.					• DEVB TC(W) • No. 6/2010	
WM5	Regular cleaning and maintenance of the waste storage area should be provided.	Avoid odour, pest, and litter impacts	Contractor	All construction sites	Construction stage	• DEVB TC(W) No.8/2010 • ETWB TC(W) No. 19/2005	Implemented after observation
WM6	 Best Management Practice An on-site environmental co-ordinator should be identified at the outset of the works. The co-ordinator shall prepare an Environmental Management Plan (EMP) incorporating waste management in accordance with the requirements set out in the ETWB TCW No. 19/2005, Environmental Management on Construction Sites. The EMP shall include monthly and yearly Waste Flow Tables (WFT) that indicate the amounts of waste generated, recycled and disposed of (including final disposal site), and which should be regularly updated. WFT will be provided in the WMP which will form part of the EMP in accordance with ETWB TCW No.19/2005; The reuse/recycling of all materials on site shall be investigated prior to treatment/ disposal off- site; Good site practices shall be adopted from the commencement of works to avoid the generation of waste, reduce cross contamination of waste and to promote waste minimisation; All waste materials shall be sorted onsite into inert and non-inert C&D materials, and where the materials can be recycled or reused, they shall be further segregated. 	Ensure proper waste management system throughout the construction	Contractor	All construction sites	• Construction stage	• EIAO • Waste Disposal Ordinance • ETWB TCW No. 19/2005, Environmental Management on Construction Sites • DEVB TCW No.6/2010 • DEVB TCW No. 8/2010 • WBTC No.12/2000	Implemented after reminder





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	 The contractor shall be responsible for identifying what materials can be recycled/ reused, whether onsite or offsite. In the event of the latter, the contractor shall make arrangements for the collection of the recyclable materials. Any remaining non-inert C&D materials shall be collected and disposed of to the landfills whilst any inert C&D materials shall be reused on site as far as possible. Alternatively, if inert C&D materials cannot be reused on-site, the materials would be delivered to public fill reception facilities for beneficial reuse after obtaining the appropriate licence; With reference to DEVB TCW No.6/2010, Trip-ticket System for Disposal of Construction and Demolition Material, a trip ticket system should be established at the outset of the construction to monitor the disposal of C&D materials and solid wastes from the site to public filling facilities and landfills; Under the Waste Disposal (Chemical Waste) (General) Regulation, the Contractor shall register as a Chemical Waste Producer if chemical wastes such as spent lubricants and paints are generated on site. Only licensed chemical waste collectors shall be employed to collect any chemical waste generated at site. The handling, storage, transportation and disposal of chemical wastes shall be conducted in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes and A Guide to the Chemical Waste Control Scheme both published by EPD; A sufficient number of covered bins shall be provided on site for the containment of general refuse. These bins shall be cleared daily and the collected waste disposed of to the refuse transfer station. Further to the 						





	/ EM&A Report						
EM&A Log Ref.	Recommended Mitigation Measures	Objective of the recommended measure & main concerns to address	Implement Agent	Location / Timing	Implementation Timing	Requirements and / or Standards to be Achieved	Implementation status
	 issue of DEVB TCW No. 8/2010, Enhanced Specification for Site Cleanliness and Tidiness, the contractor is required to maintain a clean and hygienic site throughout the Project works; Tool-box talks should be provided to workers about the concepts of site cleanliness and appropriate waste management procedures, including waste reduction, reuse, and recycling; and The contractor shall comply with all relevant statutory requirements and guidelines and their updated versions that may be issued during the course of Project construction. 						
WM7	On-site Sorting, Reuse and Recycling All waste materials should be segregated into categories covering: Inert C&D materials suitable for reuse on-site; Inert C&D materials suitable for public fill reception facilities; Recyclable C&D materials for recycling; Remaining C&D materials for landfill; Chemical waste; and General refuse for landfill.	Reduce waste generation	Contractor	All construction sites	Construction stage	Waste Disposal Ordinance ETWB TCW No. 19/2005, Environmental Management on Construction Sites	Implemented
WM8	Proper segregation and disposal of construction waste should be implemented. Separate containers should be provided for inert and non-inert materials.	Reduce waste generation	Contractor	All construction sites	Construction stage	 Waste Disposal Ordinance ETWB TCW No. 19/2005, Environmental Management on Construction Sites 	Implemented





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WM9	Specific area should be allocated for on-site sorting of C&D materials and to provide a temporary storage area for those sorted materials. If area is limited, all C&D materials should at least be sorted on-site into inert and non-inert components. Non-inert C&D materials such as bamboo, timber, vegetation, packaging waste and other organic materials should be reused and recycled to local recycler wherever possible and disposed to the designated landfill only as a last resort. Inert C&D materials such as concrete, stone, clay, brick, soil, asphalt and the like should be separated and reused in this or other projects (subject to approval by the relevant parties in accordance with the DEVB TC(W) No. 6/2010) before disposed of at a public filling facility operated by CEDD. Steel and other metals should be recovered from demolition waste stream and recycled	Ensure proper waste management system throughout the construction in order to reduce waste generation	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance • ETWB TCW No. 19/2005, Environmental Management on Construction Sites • DEVB TCW No.6/2010 • DEVB TCW No.8/2010	Implemented
WM10	The reuse of inert C&D materials such as soil, rock and broken concrete should be maximised. Waste should be separated into fine, soft and hard materials. With the use of a crusher. coarse materials can be crushed to make it suitable for use as fill materials where fill is required in the works. This minimises the use of imported materials and maximises the use of the C&D materials produced. Approval from CEDD and EPD shall be obtained for the use of site crusher in accordance with WBTC No. 11/2002.	Ensure proper waste management system throughout the construction in order to reduce waste generation	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance • WBTC No. 11/2002	Implemented
WM11	Excavated Materials Excavated materials should be temporarily stored on-site for use as backfill as far as possible. It should be properly covered with tarpaulin or similar impervious sheeting to prevent dust nuisance and site runoff. Surplus excavated materials should be disposed of to public fill reception facilities.	Minimize dust, site runoff and waste impacts from excavated and C&D materials	Contractor	All construction sites	Construction stage	 Waste Disposal Ordinance Air Pollution Control Ordinance To control the dust impact to meet HKAQO and EIAO-TM criteria 	Implemented





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WM12	 Control measures for temporary stockpiles on-site should be taken, which include: Surface of stockpiled soil should be regularly wetted with water especially during dry season; Disturbance of stockpiled soil should be minimized; Stockpiled soil should be properly covered with tarpaulin especially when heavy rainstorms are predicted; Stockpiling areas should be enclosed where space is available; Stockpiling location should be away from the water bodies; and An independent surface water drainage system equipped with silt traps should be installed at the stockpiling area. 	Minimize the noise, generation of dust, pollution of water and visual impact from excavated and C&D materials	Contractor	All construction sites	Construction stage	 Waste Disposal Ordinance Air Pollution Control Ordinance To control the dust impact to meet HKAQO and EIAO-TM criteria. ETWB TC(W) No.19/2005 	Implemented
WM13	The Public Fill Committee of CEDD should be consulted for disposal of inert C&D materials to public fill reception facilities while EPD should be consulted for disposal of non-inert C&D materials to landfill. Disposal of C&D waste to landfill must not have more than 50% (by weight) inert material. The C&D waste delivered for landfill disposal should contain no free water and the liquid content should not exceed 70% by weight.	Minimise waste impacts from C&D materials	Contractor	All construction sites	Design and Construction stages	• Waste Disposal Ordinance • ETWB TCW No. 19/2005, Environmental Management on Construction Sites • DEVB TCW No.6/2010 • DEVB TCW No.8/2010	Implemented
WM14	In order to avoid dust impacts, any vehicle leaving a works area carrying C&D waste or public fill should have their load covered up before leaving the construction site.	Minimize the dust impact from transferring C&D materials	Contractor	All construction sites	Construction stages	 Air Pollution Control Ordinance ETWB TCW No. 19/2005, Environmental Management on Construction Sites 	Implemented





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						• DEVB TCW No.6/2010 • DEVB TCW No.8/2010	
WM15	C&D materials should be disposed of at designated public fill reception facilities or landfills. Disposal of these materials for the use at other construction projects is subject to the approval of the Engineer and/or other relevant reception authorities. Furthermore, unauthorised disposal of C&D materials in particular on private agricultural land is prohibited and may be subject to relevant enforcement and regulating actions. The disposal of public fill and C&D materials will be controlled through trip-ticket system in accordance with DEVB TC(W) No. 6/2010.	Minimise waste impacts from C&D materials	Contractor	All construction sites	Construction stages	• Waste Disposal Ordinance • ETWB TCW No. 19/2005, Environmental Management on Construction Sites • DEVB TCW No.6/2010 • DEVB TCW No.8/2010	Implemented
WM16	Chemical Waste Where the construction processes produce chemical waste, the contractor must register with EPD as a chemical waste producer. Wastes classified as chemical wastes are listed in the Waste Disposal (Chemical Waste) (General) Regulation. These wastes are subject to stringent disposal routes. EPD requires information on the particulars of the waste generation processes including the types of waste produced, their location, quantities and generation rates. A nominated contact person must be registered with EPD. An updated list of licensed chemical waste collector can be obtained from EPD.	Proper waste management for chemical waste	Contractor / Relevant Operators	All construction sites	Construction stages	Waste Disposal (Chemical Waste) (General) Regulation Code of Practice on the Packaging Labelling and Storage of Chemical Waste	Implemented
WM17	Storage, handling, transport, and disposal of chemical waste should be arranged in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published by EPD, and collected by a licensed chemical waste collector.	Proper waste management for chemical waste	Contractor / Relevant Operators	All construction sites	Construction stages	 Waste Disposal (Chemical Waste) (General) Regulation Code of Practice on the Packaging Labelling and 	Implemented





EM&A Log Ref.	Recommended Mitigation Measures	Objective of the recommended measure & main concerns to address	Implement Agent	Location / Timing	Implementation Timing	Requirements and / or Standards to be Achieved	Implementation status
						Storage of Chemical Waste	
WM18	Suitable containers should be used for specific types of chemical wastes. The containers should be properly labelled (in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Regulations), resistance to corrosion, stored safely and closely secured. Stored volume should not be kept more than 450 liters unless the specification has been approved by the EPD. Storage area should be enclosed by three sides by a wall, partition of fence that is at least 2 m height or height of tallest container with adequate ventilation and space.	Proper waste management for chemical waste	Contractor / Relevant Operators	All construction sites	Construction stages	Waste Disposal (Chemical Waste) (General) Regulation Code of Practice on the Packaging Labelling and Storage of Chemical Waste	Implemented
WM19	Hard standing, impermeable surfaces draining via oil interceptors should be provided in works area compounds. Interceptors should be regularly emptied to prevent release of oils and grease into the surface water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain. Oil and fuel bunkers should be bunded and/or enclosed on three sides to prevent discharge due to accidental spillages or breaches of tanks. Bunding should be of sufficient capacity to accommodate 110% of the volume of the largest container or 20% of the total volume of waste, whichever is largest. Waste collected from any oil interceptors should be collected and disposed of by a licensed collector.	Proper waste management for chemical waste	Contractor / Relevant Operators	All construction sites	Construction stages	Waste Disposal Ordinance ETWB TCW No. 19/2005, Environmental Management on Construction Sites Waste Disposal (Chemical Waste) (General) Regulation EIAO-TM criteria	Implemented
WM20	Lubricants, waste oils and other chemical wastes are likely to be generated during the maintenance of vehicles and mechanical equipment. Used lubricants should be collected and stored in individual containers which are fully labelled in English and Chinese and stored in a	Proper waste management for chemical waste	Contractor / Relevant Operators	All construction sites	Construction stages	 Waste Disposal (Chemical Waste) (General) Regulation Code of Practice on the Packaging 	Implemented





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	designated secure place. The chemical waste shall be collected by licensed chemical waste collectors.					Labelling and Storage of Chemical Waste	
WM21	chemical waste treatment facility (such as the CWTC in Tsing Yi). A trip ticket system operates to control the movement of chemical wastes.		Contractor / Relevant Operators	All construction sites	Construction stages	• Waste Disposal (Chemical Waste) (General) Regulation	Implemented
WM22	No lubricants, oils, solvents or paint products should be allowed to discharge into water courses, either by direct discharge, or as contaminants carried in surface water runoff from the construction site.	Proper waste management for chemical waste	Contractor / Relevant Operators	All construction sites	Construction stages	• Waste Disposal (Chemical Waste) (General) Regulation	Implemented
WM23	General Refuse General refuse should be disposed of to landfill as designated by EPD only after recyclable materials (e.g. paper, metals, aluminium cans, etc.) have been sorted out.	Minimise production of the general refuse and avoid odour, pest and litter impacts	Contractors	All construction sites	Construction stage	Waste Disposal Ordinance Public Health and Municipal Services Ordinance (Cap.132)	Implemented
WM24	The contractor should nominate approved site personnel to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility of all wastes generated at the site. Training of site personnel about site cleanliness, proper waste management and chemical handling procedures should be provided. Recyclable materials such as papers and aluminium cans should be separated and delivered to the local recyclers. An adequate number of waste containers should be provided to avoid spillage of waste.	Minimise production of the general refuse and avoid odour, pest and litter impacts	Contractors	All construction sites	Construction stage	Waste Disposal Ordinance Public Health and Municipal Services Ordinance (Cap.132)	Implemented
WM25	General refuse generated on-site should be stored in enclosed bins or skips and collected separately from other construction and chemical wastes and disposed of at	Minimise production of the general refuse and	Contractors	All construction sites	Construction stage	• Waste Disposal Ordinance	Implemented





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designated landfills by reputable waste collectors. The removal of waste from the site should be arranged on a daily basis or at least on every second day by the contractor to minimise any potential odour impacts, minimise the presence of pests, vermin and other scavengers and prevent unsightly accumulation of waste.		avoid odour, pest and litter impacts				• Public Health and Municipal Services Ordinance (Cap.132)	
Waste M	anagement (Operation Phase)						
WM26	The general refuse and chemical waste generated during the operation phase would follow the same handling procedures and disposal method presented in Sections 6.6.16 to 6.6.25 of the EIA report. It is expected that there would be limited quantities of general refuse and chemical waste to be generated from the operation of the Project and will be properly handled by licensed chemical waste collectors and reputable waste collector. Waste monitoring and audit programme for the operation phase of the Project would not be required.	Minimise production of the general refuse and avoid odour, pest and litter impacts	Relevant Operators	All construction sites	Operation Stage	Waste Disposal Ordinance Waste Disposal (Chemical Waste) (General) Regulation Code of Practice on the Packaging Labelling and Storage of Chemical Waste Public Health and Municipal Services Ordinance (Cap.132)	To be implemented
Ecology							
E1	Direct impact to the recognised site of conservation importance (Lion Rock Country Park)/habitats with high ecological values (e.g. watercourse, woodland, species of conservation interest shall be avoided.	Avoid any direct impacts to these sites of conservation importance /habitats with high ecological value	Detailed Design Consultant	Sites of conservation importance/ habitats with high ecological value	Design Stage	TM-EIAO	To be implemented





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E2	To minimise habitat loss to the nearby habitats and associated wildlife, the following mitigation measures should be implemented: • Confining the works within the Project Boundary; • Controlling access of site staff to avoid damage to the vegetation in surrounding areas; and • Placement of equipment or stockpile in the existing disturbed / urbanised area within the Project Boundary of the Project to minimise disturbance to vegetated area.	Minimise habitat loss to the nearby habitats and associated wildlife	Contractor	All construction sites	Construction Stage	TM-EIAO	Implemented
E3	Reinstatement and enhancement of temporarily affected habitats. Minor ecological impacts may arise from the temporary loss of plantation and developed area during construction phase. In general, replanting would be implemented upon the completion of the construction works to reinstate the temporarily affected areas to condition similar to original status.	Enhance the temporarily affected habitats	Contractor	All construction sites	Construction stage	TM-EIAO	To be implemented
E4	 Minimizing Disturbance from Construction Activities Mitigation measures including, but not limited to, erection of site hoarding, use of Quality Powered Mechanical Equipment (QPME), noise and dust reduction tarpaulin sheeting and good site practices throughout construction phase are shown as followings: Site hoarding would be established around the proposed tunnel portal and E&M building prior to the commencement of construction works to prevent construction activities from encroaching adjacent habitats as well as prevent unnecessary human activities in the surrounding habitats; QPME, noise and dust reduction tarpaulin sheeting could be used during construction phase to reduce noise disturbance and dust emission. Temporary 	To minimise disturbance from construction activities	Contractor	All construction sites	Construction stage	TM-EIAO	Implemented





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	 barriers such as movable noise barrier, temporary noise screening structures and site hoardings could further reduce the noise impact; Good site practices such as regular water spraying at dusty operation, provision of waste skips and timely collection of general refuse and construction waste are also recommended. 						
E5	Reduction of lighting can be achieved using directional lighting to prevent excessive light spill into adjacent natural habitat and disturbance to nocturnal fauna.	To minimize disturbance from construction activities	Contractor	All construction sites	Construction stage	TM-EIAO	Implemented
E6	Control of Site Runoff Best management practices should be implemented on site in accordance with the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN 1/94) as far as practicable to control site runoff and drainage at all work sites during construction phase, so that the treated runoff will be discharged to public drainage system in compliance with the WPCO. Construction effluent, site run-off and sewage should be properly collected and/or treated. Wastewater from a construction site should be managed. Proper locations for discharge outlets of wastewater treatment facilities well away from the natural watercourses should be identified. Effluent monitoring should be incorporated to make sure that the discharged effluent from construction sites meets the effluent discharge guidelines. The practices outlined in ETWB TC (Works) No. 5/2005 "Protection of natural streams/rivers from adverse impacts arising from construction works" should also be adopted where applicable to minimise the water quality impacts upon the channalised/semi-natural	To control site runoff and drainage at all work sites, thus, the aquatic ecosystem is protected.	Contractor	All construction sites	Construction stage	Water Pollution Control Ordinance ProPECC PN. 1/94	Implemented





EM&A Log Ref.	Recommended Mitigation Measures	Objective of the recommended measure & main concerns to address	Implement Agent	Location / Timing	Implementation Timing	Requirements and / or Standards to be Achieved	Implementation status
	watercourses, in order to better protect the aquatic ecosystem.						
E7	Control of Groundwater Infiltration In order to minimise groundwater infiltration or avoid potential impacts on watercourses water table and		Contractor	Works area at Cavern and tunnel portal	Design stage / Construction stage / Operation Stage	EIAO-TM	To be implemented
E8	The proposed cavern would be constructed under the measured groundwater table. Water inflow would be controlled to an acceptable level by implementing pregrouting and post-grouting measures, thus the impact of the proposed cavern on the groundwater table is considered to be limited.	To minimize groundwater infiltration / avoid potential impacts on watercourses	Contractor	Works area at Cavern and tunnel portal	Design stage / Construction stage / Operation Stage	EIAO-TM	To be implemented
E9	The permanent tunnel structure of the proposed access tunnel would be designed as drained type at the locations with adequate rock cover and designed as undrained type at locations with mix ground conditions. The water inflow would also be controlled to an acceptable level with pregrouting and postgrouting measures.	To minimize groundwater infiltration / avoid potential impacts on watercourses	Contractor	Works area at Cavern and tunnel portal	Design stage / Construction stage / Operation Stage	EIAO-TM	To be implemented
E10	During operation phase, waterproof lining would be installed to prevent water seepage and water droplets (if any) would be discharged into the sewage system	To minimize groundwater infiltration / avoid potential impacts on watercourses	Contractor	Works area at Cavern and tunnel portal	Design stage / Construction stage / Operation Stage	EIAO-TM	To be implemented
E11	All the mitigation measures regarding potential groundwater infiltration concern that has been proposed in Section 5.8.7 shall be followed.	To minimize groundwater infiltration / avoid potential impacts on watercourses	Contractor	Works area at Cavern and tunnel portal	Design stage / Construction stage / Operation Stage	EIAO-TM	To be implemented





EM&A Log Ref.	Recommended Mitigation Measures	Objective of the recommended measure & main concerns to address	Implement Agent	Location / Timing	Implementation Timing	Requirements and / or Standards to be Achieved	Implementation status		
Landscap	Landscape and Visual (Construction Phase)								
CM1	 Careful Site Planning and Management The site layout and works area including temporary access road(s), stockpiling area(s), temporary construction storage shall be carefully planned to preserve existing landscape resources and trees as far as practicable. Good site practices shall be enforced to eliminate eyesores from unappealing stockpiling/ storage areas and/or construction activities. 	To minimize site clearance, tree removal and disturbance to existing Landscape Resources, and visual obstruction to VSRs	Project Proponent (via Contractor)	All construction areas	Construction stage	N/A	Implemented		
CM2	 Careful Design of Slope Works Slope stabilization methods (i.e., insertion of soil nails and establishment of grillage, etc.) shall be carefully formulated to minimise the loss of tree and landscape cover as far as practicable. 	To minimize tree removal and to create a slope surface better blending with the surrounding environment	Project Proponent (via Contractor)	Works area at Cavern and tunnel portal	Construction stage	N/A	Implemented		
СМЗ	 Tree Preservation In accordance with DEVB TC (W) No.4/2020 – Tree Preservation or its latest version, existing vegetation shall be retained on site as far as practicable. Adequate tree protection measures shall be provided for the Trees to be retained on site. Relevant guidelines on tree care and protection promulgated by Greening, Landscape and Tree Management Section of Development Bureau shall be observed and followed. 	To minimize tree removal	Project Proponent (via Contractor)	All construction areas	Construction stage	N/A	Implemented after observation		
CM4	Tree Transplanting/ Compensatory Tree Planting Trees unavoidably affected by the project shall be transplanted as far as practicable in accordance with DEVB TC (W) No.4/2020 – Tree Preservation or its latest version and the latest guidelines promulgated by	To minimize the loss of trees To compensate for the loss of tree	Project Proponent (via Contractor)	All construction areas	Construction stage	DEVB TC(W) No. 4/2020- Tree Reservation	Implemented		





EM&A Log Ref.	Recommended Mitigation Measures	Objective of the recommended measure & main concerns to address	Implement Agent	Location / Timing	Implementation Timing	Requirements and / or Standards to be Achieved	Implementation status
	 Greening, Landscape and Tree Management Section of Development Bureau. Affected trees that are not suitable for transplantation and to be felled shall be compensated in not less than 1:1 in quantity and in accordance with DEVB TC (W) No.4/2020 – Tree Preservation or its latest version. Onsite compensation has been prioritized. However, due to land status issues, area of onsite compensatory planting locations are insufficient to compensate for the loss of trees and near site compensatory locations managed by WSD are adopted, as shown in Figure 9.9, Figure 9.10A, Figure 9.10B and Figure 9.11 of the EIA report. Tree species selected shall be compatible with surrounding existing vegetation. 	To provide quality and sustainable landscape that is compatible with the site context					
CM5	 Inspection of Tree Works Regular site inspection shall be conducted by tree specialist. 	To closely monitor the site activities in order to avoid or minimize any possible adverse impact to the retained trees	Project Proponent (via Contractor)	All construction areas	Construction stage	N/A	Implemented
CM6	Minimization of Light Impact • Lighting at construction sites shall be carefully controlled at night	To avoid disturbance to nearby VSRs	Project Proponent (via Contractor)	All construction areas and temporary works areas	Construction stage	N/A	Implemented
CM7	 Erection of Decorative Site Hoarding Decorative hoarding that is compatible with the surrounding environment shall be erected during construction. 	To enhance the visual amenity of construction hoarding	Project Proponent (via Contractor)	All construction areas and temporary work areas	Construction stage	N/A	To be implemented





EM&A Log Ref.	Recommended Mitigation Measures	Objective of the recommended measure & main concerns to address	Implement Agent	Location / Timing	Implementation Timing	Requirements and / or Standards to be Achieved	Implementation status
CM8	Reinstatement of Temporarily Disturbed Areas Temporarily disturbed landscape areas shall be reinstated.	To reinstate the disturbed landscape	Project Proponent (via Contractor)	All construction areas and temporary work areas	Construction stage	N/A	To be implemented
Landscap	pe and Visual (Operation Phase)						
OM1	 Landscape Planting Landscape planting shall be provided in accordance with DEVB TCW No.3/2012 – Site Coverage of Greenery for Government Building Projects or its latest version. Planting species shall be compatible with the nearby existing vegetation cover as far as practicable. Not less than 12-month establishment after completion shall be provided for the landscape planting. 	To soften the hard edges of the structure and make it more compatible with the surrounding environment	Project Proponent (via Contractor)	Ancillary building	Operation stage	DEVB TCW No.3/2012	To be implemented
OM2	Rooftop Greening Rooftop greening shall be implemented with reference to the references on skyrise greenery provided by the Greening, Landscape & Tree Management Section, Development Bureau.	To make the ancillary facilities more compatible with the surrounding woodland landscape and to mitigate the potential adverse visual impact on adjacent residential VSRs viewing from an elevated vantage point	Project Proponent (via Contractor)	Ancillary building	Operation stage	N/A	To be implemented
OM3	Vertical Greening Vertical greening shall be provided.	To enhance the visual amenity of the ancillary	Project Proponent	Ancillary building	Operation stage	N/A	To be implemented





EM&A Log Ref.	Recommended Mitigation Measures	Objective of the recommended measure & main concerns to address	Implement Agent	Location / Timing	Implementation Timing	Requirements and / or Standards to be Achieved	Implementation status
		facilities and to blend in with the surrounding landscape	(via Contractor)				
OM4	 Careful Design of Ancillary Facilities The orientation and location of the ancillary facilities shall be carefully designed. Its finish shall be non-reflective and dull in colour. The ancillary facilities are unmanned structures that merely require minimal security services during daytime. There shall be nobody and no lighting illuminating from the buildings at night, except essential street lighting for the portal access road. 	To avoid glare impact to surrounding VSRs	Project Proponent (via Contractor)	Ancillary building	Operation stage	N/A	To be implemented

Contract No. 21/WSD/21 Relocation of Diamond Hill Fresh Water and Salt Water Service Reservoirs to Caverns Monthly EM&A Report





Appendix E

Air Quality and Noise Monitoring Equipment Calibration Certification



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

Information of Calibrated Equipement

Verification Test Date:	28-Nov-23	to	30-Nov-23	Next Verification Test Date:	28-Nov-24
Unit-under-Test- Model No.:	Sibata LD-5R		R		
Unit-under-Test Serial No.:		0Z4545			
Our Report Refrence No.:		RPT-23-HVS-0	065		
Calibration Location:	AM2, location near the Leachate Trea			tment Works within the NENTX Landfill	
-					-

Standard Equipment Information

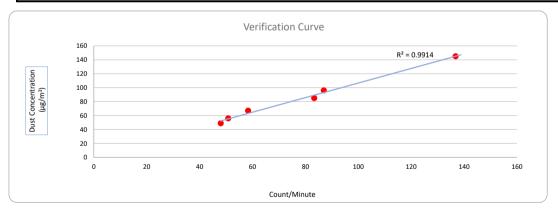
Verification Equipment Type:	Tisch TSP HVS	Tisch HVS Calibrator
Standard Equipment Model No.:	TE-5170X	TE-5025A
Equipment serial no.:	1106	4166
Last Calibration Date:	4-Nov-23	19-Jun-23
Next Calibration Date:	3-Jan-24	19-Jun-24

Equipement Vertification Result

Verification	Duration		Results from	Calibrated Equipement	Results from Standard Equipment		
Test No.	Date	Start-time	End-time	Elapsed Time (in min)	Total Counts	Counts/ Minute x-axis	Dust Concentration (μg/m³) y-axis
1	28/11/2023	8789.68	8792.68	180.00	15648	87	96
2	28/11/2023	8792.68	8795.68	180.00	14993	83	85
3	28/11/2023	8795.68	8798.68	180.00	8635	48	49
4	30/11/2023	8798.68	8801.68	180.00	10501	58	67
5	30/11/2023	8801.68	8804.68	180.00	24622	137	145
6	30/11/2023	8804.68	8807.68	180.00	9145	51	56

Linear Regression of y on x





Operated By:

Andy Li

Project Technician, Environmental

Date: 30-11-2023

Checked By:

Tandy Tse
Senior Consultant, Environmental

Date: 30-11-2023



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

Information of Calibrated Equipement

Verification Test Date:	28-Nov-23	to	30-Nov-24	Next Verification Test Date:	28-Nov-24
Unit-under-Test- Model No.:		Sibata LD-5R			
Unit-under-Test Serial No.:		882106			
Our Report Refrence No.:	R	PT-23-HVS-00	168		
Calibration Location:	AM2, location near the Leachate Trea			eatment Works within the NENTX Landfill	

Standard Equipment Information

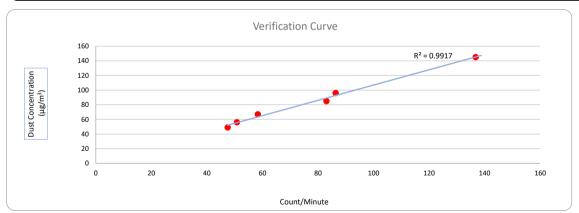
Verification Equipment Type:	Tisch TSP HVS	Tisch HVS Calibrator
Standard Equipment Model No.:	TE-5170X	TE-5025A
Equipment serial no.:	1106	4166
Last Calibration Date:	4-Nov-23	19-Jun-23
Next Calibration Date:	3-Jan-24	19-Jun-24

Equipement Vertification Result

Verification	Duration			Results from	Results from Standard Equipment		
Test No.	Date	Start-time	End-time	Elapsed Time (in min)	Total Counts	Counts/ Minute x-axis	Dust Concentration (μg/m³) y-axis
1	28/11/2023	8789.68	8792.68	180.00	15546	86	96
2	28/11/2023	8792.68	2.68 8795.68 180.00		14944	83	85
3	28/11/2023	8795.68	8798.68	180.00	8543	47	49
4	30/11/2023	8798.68	8801.68	180.00	10499	58	67
5	30/11/2023	8801.68 8804.68 180.00		24622	137	145	
6	30/11/2023	8804.68	8807.68	180.00	9145	51	56

Linear Regression of y on x





Operated By: Andy Li Date: 30-11-2023

Project Technician, Environmental

Checked By: Tandy Tse Date: 30-11-2023

Senior Consultant, Environmental



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

Information of Calibrated Equipement

8-Nov-23	to	30-Nov-23	Next Verification Test Date:	28-Nov-24
	Sibata LD-5R			
	942532			
RP'	Γ-23-HVS-00	71		
AM2, location near the Leachate Trea		the Leachate Tre	atment Works within the NENTX Landfill	
2.0	RP	Sibata LD-5R 942532 RPT-23-HVS-00	Sibata LD-5R 942532 RPT-23-HVS-0071	Sibata LD-5R 942532

Standard Equipment Information

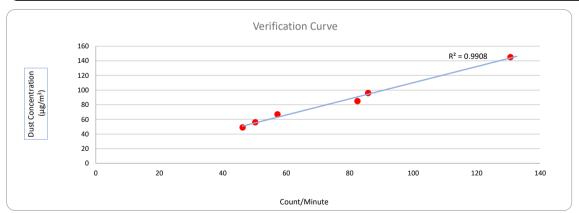
-			
	Verification Equipment Type:	Tisch TSP HVS	Tisch HVS Calibrator
	Standard Equipment Model No.:	TE-5170X	TE-5025A
	Equipment serial no.:	1106	4166
	Last Calibration Date:	4-Nov-23	19-Jun-23
	Next Calibration Date:	3-Jan-24	19-Jun-24

Equipement Vertification Result

Verification		Duration			Results from	Calibrated Equipement	Results from Standard Equipment	
Test No.	Date	Start-time	End-time	Elapsed Time (in min)	Total Counts	Counts/ Minute x-axis	Dust Concentration (μg/m³) y-axis	
1	28/11/2023	8789.68	8792.68	180.00	15446	86	96	
2	28/11/2023	8792.68	8795.68	180.00	14835	82	85	
3	28/11/2023	8795.68	8798.68	180.00	8320	46	49	
4	30/11/2023	8798.68	8801.68	180.00	10303	57	67	
5	30/11/2023	8801.68	8804.68	180.00	23517	131	145	
6	30/11/2023	8804.68	8807.68	180.00	9043	50	56	

Linear Regression of y on x





Operated By: Andy Li Date: 30-11-2023

Project Technician, Environmental

Checked By: Tandy Tse Date: 30-11-2023

Senior Consultant, Environmental

Certificate of Calibration

for

Description:

Sound Level Calibrator

Manufacturer:

RION

Type No.:

NC-74

Serial No.:

34615222

Submitted by:

Customer:

Aurecon Hong Kong Limited

Address:

Unit 1608, 16/F, Tower B, Manulife Financial Centre,

223-231 Wai Yip Street, Kwun Tong,

Kowloon, Hong Kong

TT	Servence		C	1.1	exerci (ATTomer	instrument		C	4	The course
	non	receint	TOP	calibration	on the	instrument	Was	tound	TO	ne.
	DOTE	LCCCIPI	TOT	CHILL I HELL	DILA CILC	mountaineme	11 6613	LUULIU		N.V.

✓ Within

☐ Outside

the allowable tolerance.

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

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory

Date of receipt: 21 March 2024

Date of calibration: 27 March 2024

Date of NEXT calibration: 26 March 2025

Calibrated by:

Calibration Technician

Certified by:

Mr, Ng Yan Wa Laboratory Manager

Date of issue: 27 March 2024

Certificate No.: APJ23-154-CC001

Page 1 of 2



1. Calibration Precautions:

- The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 24 hours, and switched on to warm up for over 10 minutes before the commencement of the test.
- The results presented are the mean of 3 measurements at each calibration point.

2. Calibration Specifications:

Calibration check

3. Calibration Conditions:

Air Temperature:	22.5 °C
Air Pressure:	1005 hPa
Relative Humidity:	69.8 %

4. Calibration Equipment:

Test Equipment	Type	Serial No.	Calibration Report Number	Traceable to
Multifunction Calibrator	B&K 4226	2288467	AV220061	HOKLAS
Sound Level Meter	RION NA-28	30721812	AV220120	HOKLAS

5. Calibration Results

5.1 Sound Pressure Level

Nominal value dB			Measured value dB
94.0	93.6	94.4	94.2

Note:

The values given in this certification only related to the values measured at the time of the calibration.



Certificate No.: APJ23-154-CC001

Page 2 of 2

Certificate of Calibration

Description:

Sound Level Meter

Manufacturer:

NTi Audio

Type No.:

XL2 (Serial No.: A2A-09696-E0)

Microphone:

ACO 7052 (Serial No.:73780)

Preamplifier:

NTi Audio MA220 (Serial No.:6282)

Submitted by:

Customer:

Aurecon Hong Kong Limited

Address:

Unit 1608, 16/F, Tower B,

Manulife Financial Centre,

223-231 Wai Yip Street, Kwun Tong,

Kowloon, Hong Kong.

Upon receipt for calibration, the instrument was found to be:

☑ Within (31.5Hz – 8kHz)

☐ Outside

the allowable tolerance.

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

The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory

Date of receipt: 28 February 2024

Date of calibration: 02 March 2024

Date of NEXT calibration: 01 March 2025

Calibrated by: _____

Certified by:

Mr. Ng Yan Wa Laboratory Manager

age 1 of 4

Date of issue: 02 March 2024

Certificate No.: APJ23-146-CC003

Room 422, Leader Industrial Centre, 57-59 Au Pui Wan Street, Fo Tan, Shatin, N.T., Hong Kong Tel: (852) 2668 3423 Fax: (852) 2668 6946

Homepage: http://www.aa-lab.com

E-mail: inquiry@aa-lab.com

Acoustics and Air Testing Laboratory Co. Ltd. 聲學及空氣測試實驗室有限公司

1. Calibration Precaution:

- The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 24 hours, and switched on to warm up for over 10 minutes before the commencement of the test.
- The results presented are the mean of 3 measurements at each calibration point.

2. Calibration Conditions:

Air Temperature:

22.9 °C

Air Pressure:

1005 **hPa**

Relative Humidity:

61.2 %

3. Calibration Equipment:

Type

Serial No.

Calibration Report Number

Traceable to

Multifunction Calibrator

B&K 4226

2288467

AV220061

HOKLAS

4. Calibration Results

Sound Pressure Level

Reference Sound Pressure Level

Setting of Unit-under-test (UUT)			Appl	ied value	UUT Reading,	IEC 61672 Class 1	
Range, dB	nge, dB Freq. Weighting Time Weighting		Level, dB Frequency, Hz		dB	Specification, dB	
30-130	dBA	SPL	Fast	94	1000	94.1	±0.4

Linearity

Sett	ing of U	nit-under-t	est (UUT)	Applied value		UUT Reading,	IEC 61672 Class 1
Range, dB	Freq.	Weighting	Time Weighting	Level, dB	Frequency, Hz	dB	Specification, dB
				94		94.1	Ref
30-130	dBA	SPL	Fast	104	1000	104.1	±0.3
			*	114		114.1	±0.3

Time Weighting

Setting of Unit-under-test (UUT)				Applied value		UUT Reading,	IEC 61672 Class 1
Range, dB	Freq. Weighting		Time Weighting	Level, dB	Frequency, Hz	dB	Specification, dB
30-130	4D V	CDI	Fast	0.4	1000	94.1	Ref
30-130	dBA SPL	Slow	94	1000	94.1	±0.3	

Certificate No.: APJ23-146-CC003

Page 2 of 4



Linear Response

Sett	ing of Unit-ι	ınder-t	est (UUT)	Applied value		UUT Reading,	IEC 61672 Class 1
Range, dB	Freq. Weighting		Time Weighting	Level, dB	Frequency, Hz	dB	Specification, dB
					31.5	94.0	±2.0
					63	94.1	±1.5
					125	94.1	±1.5
					250	94.1	±1.4
30-130	dB	SPL	Fast	94	500	94.1	±1.4
					1000	94.1	Ref
					2000	94.4	±1.6
					4000	95.2	±1.6
					8000	94.5	+2.1; -3.1

A-weighting

Sett	ing of Uni	t-under-t	est (UUT)	Applied value		UUT Reading,	IEC 61672 Class 1
Range, dB	Freq. W	eighting	Time Weighting	Level, dB	Frequency, Hz	dB	Specification, dB
					31.5	54.6	-39.4 ±2.0
					63	67.9	-26.2 ±1.5
					125	78.0	-16.1 ±1.5
					250	85.4	-8.6 ± 1.4
30-130	dBA	SPL	Fast	94	500	90.9	-3.2 ±1.4
					1000	94.1	Ref
					2000	95.6	+1.2 ±1.6
				28	4000	96.2	+1.0 ±1.6
			*		8000	93.4	-1.1+2.1; -3.1

C-weighting

Sett	ing of U	nit-under-t	est (UUT)	Applied value		UUT Reading,	IEC 61672 Class 1
Range, dB	Freq. V	Weighting	Time Weighting	Level, dB	Frequency, Hz	dB	Specification, dB
					31.5	91.0	-3.0 ±2.0
					63	93.3	-0.8 ±1.5
		C SPL	Fast	94	125	93.9	-0.2 ±1.5
					250	94.1	-0.0 ±1.4
30-130	dBC				500	94.2	-0.0 ±1.4
					1000	94.1	Ref
					2000	94.2	-0.2 ±1.6
					4000	94.4	-0.8 ±1.6
					8000	91.5	-3.0 +2.1: -3.1

Certificate No.: APJ23-146-CC003



5. Calibration Results Applied

The results apply to the particular unit-under-test only. All calibration points are within manufacture's specification as IEC 61672 Class 1.

Uncertainties of Applied Value:

94 dB	31.5 Hz	± 0.10
	63 Hz	± 0.05
	125 Hz	± 0.05
	250 Hz	± 0.05
	500 Hz	± 0.05
	1000 Hz	± 0.05
	2000 Hz	± 0.05
	4000 Hz	± 0.05
	8000 Hz	± 0.10
104 dB	1000 Hz	± 0.05
114 dB	1000 Hz	± 0.05

The uncertainties are evaluated for a 95% confidence level.

Note:

The values given in this certification only related to the values measured at the time of the calibration and any uncertainties quoted will not allow for the equipment long-term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the calibration. (A+A)*L shall not be liable for any loss or damage resulting from the use of the equipment.

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Contract No. 21/WSD/21 Relocation of Diamond Hill Fresh Water and Salt Water Service Reservoirs to Caverns Monthly EM&A Report





Appendix F Environmental Monitoring Schedule

Contract No. 21/WSD/21

Relocation of Diamond Hill Fresh Water and Salt Water Service Reservoirs to Caverns

		Impact Er	nvironmental Monitor	ing Schedule		
			September 2024			
Sun	Mon	Tue	Wed	Thur	Fri	Sat
1	2	Impact Air Quality Monitoring (DM-1, DM-2, DM-3, DM-4, DM-4a)	4	5	Site inspection [Cancelled due to adverse weather]	7
8	Impact Air Quality and Noise Monitoring (DM-1, DM-2, DM-3, DM-4, DM-4a, NM-2, NM-3, NM-4, NM-4a, NM-5, NM-6)	10	11	12	Site inspection	Impact Air Quality Monitoring (DM-1, DM-2, DM-3, DM-4, DM-4a)
15	16	17	18	19	Site inspection Impact Air Quality and Noise Monitoring (DM-1, DM-2, DM-3, DM-4, DM-4a, NM-2, NM-3, NM-4, NM-4a, NM-5, NM-6)	21
22	23	24	25	Impact Air Quality and Noise Monitoring (DM-1, DM-2, DM-3, DM-4, DM-4a, NM-2, NM-3, NM-4, NM-4a, NM-5, NM-6)	Site inspection	28
29	30					
	ed due to unforeseen circumstances (e.g. adverse weather, etc.)					
Air Quality Monitoring DM-1 - Tennis Court ne			Noise Monitorin NM-2 - Chun Si	g Stations: ng House, Tin Ma Court		

DM-2 - Chun Sing House, Tin Ma Court

DM-3 - Grace Methodist Church Kindergarten

DM-4 - Block 6, Tsui Chuk Garden

DM-4a - Road pavement near Wang King House, Tin Wang Court

NM-3 - Grace Methodist Church Kindergarten

NM-4 - Block 6, Tsui Chuk Garden

NM-4a - Road pavement near Wang King House, Tin Wang Court

NM-5 - Wo Tin House, Shatin Pass Estate

NM-6 - Sheung Fung Street Customs Staff Quarters

Contract No. 21/WSD/21 Relocation of Diamond Hill Fresh Water and Salt Water Service Reservoirs to Caverns Monthly EM&A Report





Appendix G

Air Quality Monitoring Results and Graphical Presentation





Appendix G - 1-hour TSP Monitoring Results

DM-1 - Tennis Court near Tin Ma Court						
Date	Time	Weather	Particulate Concentration (μg/m³)			
	8:10		62			
3 Sep 2024	9:10	Sunny	64			
	10:10		63			
	8:10		62			
9 Sep 2024	9:10	Fine	61			
	10:10		64			
	8:10		59			
14 Sep 2024	9:10	Sunny	60			
	10:10		62			
	8:00		62			
20 Sep 2024	9:00	Fine	60			
	10:00		63			
	8:00		61			
26 Sep 2024	9:00	Fine	60			
	10:00		62			
		Minimum	59			
		Maximum	64			
		Average	62			

DM-2 - Chun Sing	DM-2 - Chun Sing House, Tin Ma Court							
Date	Time	Weather	Particulate Concentration (μg/m³)					
	8:20		59					
3 Sep 2024	9:20	Sunny	58					
	10:20		59					
	8:30		59					
9 Sep 2024	9:30	Fine	58					
	10:30		58					
	8:20		49					
14 Sep 2024	9:20	Sunny	50					
	10:20		51					
	8:35		55					
20 Sep 2024	9:35	Fine	50					
	10:35		54					
	8:40		54					
26 Sep 2024	9:40	Fine	56					
	10:40		53					
	-	Minimum	49					
		Maximum	59					
		Average	55					





Appendix G - 1-hour TSP Monitoring Results

Date	Time	Weather	Particulate Concentration (μg/m³)
	8:35		34
Sep 2024	9:35	Sunny	33
_	10:35	1 [36
	8:41		36
Sep 2024	9:41	Fine	31
	10:41		32
	8:35		36
4 Sep 2024	9:35	Sunny	39
10:35			34
	9:00		40
Sep 2024	10:00	Fine	45
	11:00		43
	8:55		41
Sep 2024	9:55	Fine	43
	10:55		40
		Minimum	31
		Maximum	45
		Average	38
- Block 6, Ts	sui Chuk Gard	den	
Date	Time	Weather	Particulate Concentration (µg/m³)

I-4 - Block 6, Ts	ui Chuk Garo	len	
Date	Time	Weather	Particulate Concentration (μg/m³)
	13:10		45
3 Sep 2024	14:10	Sunny	50
	15:10		40
	13:16		49
9 Sep 2024	14:16	Fine	48
	15:16		45
	13:10		43
14 Sep 2024	14:10	Sunny	40
	15:10		42
	13:10		41
20 Sep 2024	14:10	Fine	42
	15:10		41
	13:00		40
26 Sep 2024	14:00	Fine	42
	15:00		42
		Minimum	40
		Maximum	50
		Average	43





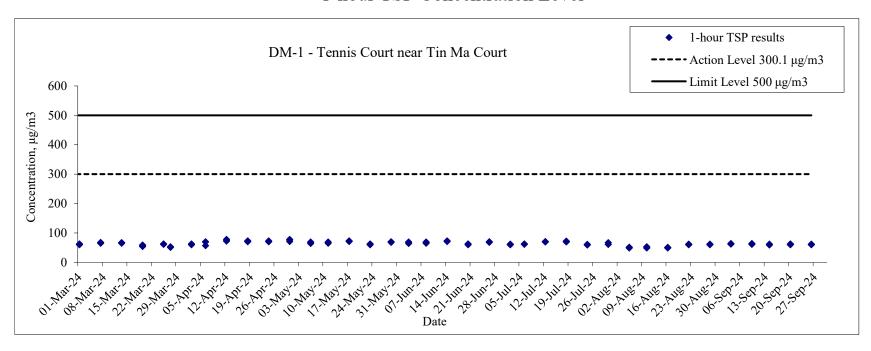
Appendix G - 1-hour TSP Monitoring Results

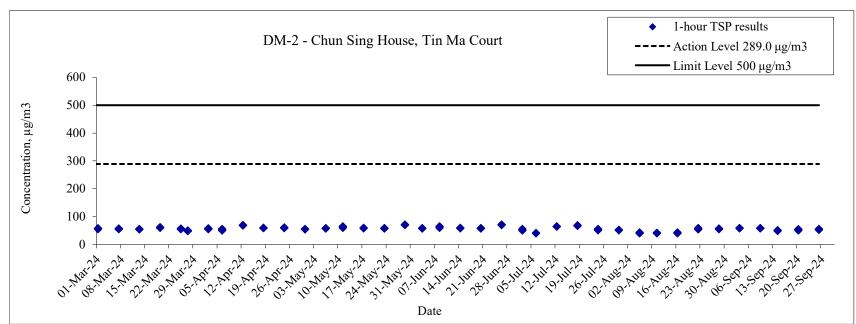
DM-4a - Road pav	ement near W	ang King House,	Tin Wang Court
Date	Time	Weather	Particulate Concentration (µg/m³)
	13:25		62
3 Sep 2024	14:25	Sunny	60
	15:25		61
	13:30		61
9 Sep 2024	14:30	Fine	62
	15:30		64
	13:21		53
14 Sep 2024	14:21	Sunny	50
	15:21		51
	13:30		60
20 Sep 2024	14:30	Fine	58
	15:30		63
	13:15		61
26 Sep 2024	14:15	Fine	59
	15:15		61
		Minimum	50
		Maximum	64
		Average	59

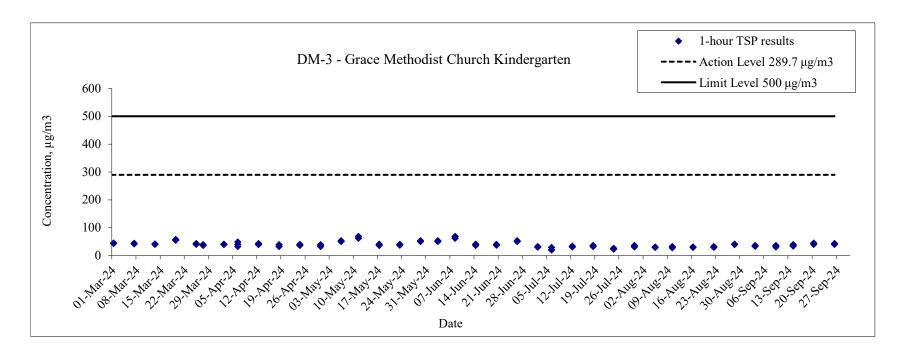




1-hour TSP Concentration Level



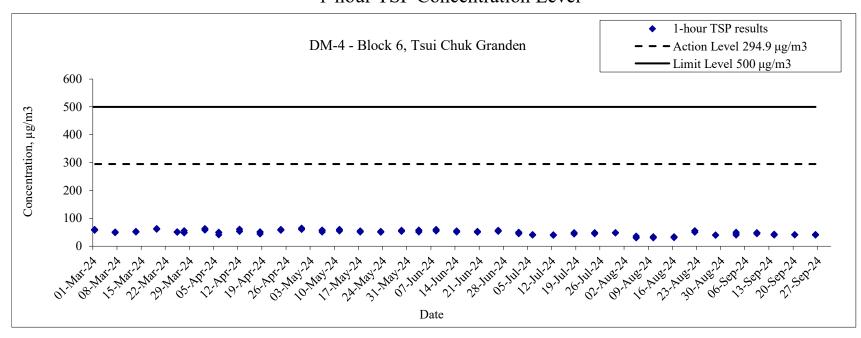


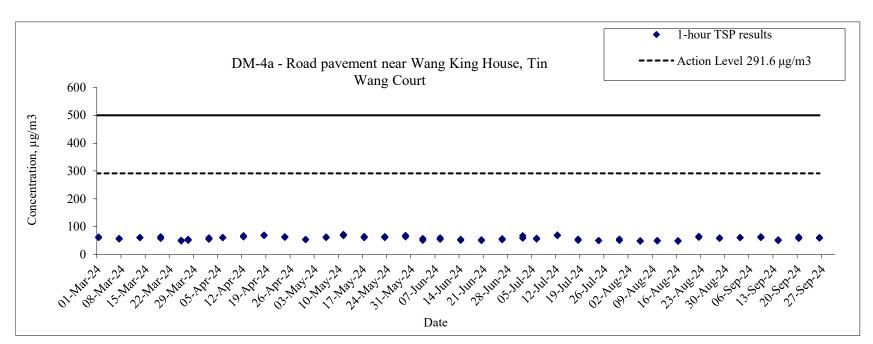






1-hour TSP Concentration Level









Appendix H

Extract of Meteorological Observations for Hong Kong (Kai Tak)





Appendix H - Extract of Meteorological Observations for Hong Kong (Kai Tak Wind Station)

Wind Direction

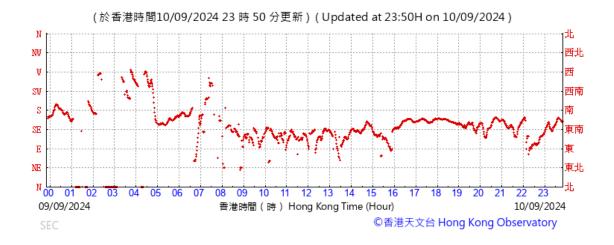


Wind Speed







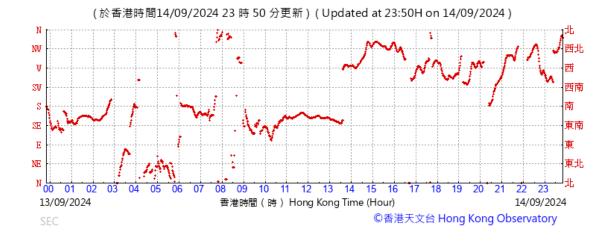


Wind Speed









Weed Speed









Wind Speed









Wind Speed







Appendix I

Noise Monitoring Results and Graphical Presentation



Appendix I - Construction Noise Monitoring Results

Construction Noise Monitoring Stations: Chun Sing House, Tin Ma Court (NM-2)

Date	Weather	Start Time			dB(A)	
Date	Weather	Start Time	Leq	L10	L90	Leq(30min)
		9:10	70.2	72.6	68.2	
		9:15	71.1	73.1	69.2	
3 San 2024	Fine	9:20	70.6	72.9	68.9	70.2
3 Sep 2024	rine	9:25	69.6	70.4	67.4	70.2
		9:30	69.4	70.5	67.1	
		9:35	70.2	72.4	69.2	
		10:40	70.4	71.9	69.3	
		10:45	70.6	72.0	69.8	
0.500.2024	Fine	10:50	71.3	73.6	70.4	70.6
9 Sep 2024	rine	10:55	70.4	71.8	69.9	70.8
		11:00	69.8	71.6	68.1	
		11:05	70.9	72.6	69.1	
		9:10	70.5	72.0	69.0	
		9:15	70.1	71.6	68.6	
20 Sep 2024	Fine	9:20	69.8	71.3	68.3	70.4
20 Sep 2024	Tille	9:25	71.6	73.1	70.1	/0.4
		9:30	69.5	71.0	68.0	
		9:35	70.3	71.8	68.8	
		9:05	69.5	71.0	68.0	
		9:10	69.6	71.1	68.1	
26 Sep 2024	Fine	9:15	70.3	71.8	68.8	70.2
20 Sep 2024	Tille	9:20	71.5	73.0	70.0	70.2
		9:25	69.3	70.8	67.8	
		9:30	70.5	72.0	69.0	
					Min:	70.2
					Max:	70.6
					Average:	70.3

Construction Noise Monitoring Stations: Grace Methodist Church Kindergarten (NM-3)

Date	Weather	Start Time			dB(A)	
Date	weather	Start Time	Leq	L10	L90	Leq(30min)
		10:10	56.3	59.0	50.4	
		10:15	53.9	56.7	49.8	
3 Sep 2024	Fine	10:20	54.0	56.3	49.9	55.9
3 Sep 2024	rine	10:25	55.8	58.6	49.8	33.9
		10:30	56.2	58.8	50.1	
		10:35	57.7	60.1	54.4	
		11:25	57.0	60.0	48.5	
		11:30	56.6	59.7	49.1	
9 Sep 2024	Fine	11:35	56.5	59.3	47.8	56.5
9 Sep 2024 Fine	Tine	11:40	56.5	59.6	49.5	30.3
		11:45	55.5	58.8	48.6	
		11:50	57.0	58.9	47.8	
		10:30	59.1	60.6	57.6	
		10:35	59.6	61.1	58.1	
20 Sep 2024	Fine	10:40	60.3	61.8	58.8	60.2
20 Sep 2024	Tine	10:45	61.5	63.0	60.0	00.2
		10:50	59.7	61.2	58.3	
		10:55	60.3	61.8	58.8	
		10:30	58.3	59.8	56.8	
		10:35	58.6	60.1	57.1	
26 Sep 2024	Fine	10:40	58.2	59.7	56.7	58.6
20 Sep 2024	Tine	10:45	58.9	60.4	57.4	38.0
		10:50	59.2	60.7	57.7	
		10:55	58.6	60.1	57.1	
					Min:	55.9
					Max:	60.2
					Average:	57.8



Appendix I - Construction Noise Monitoring Results

Construction Noise Monitoring Stations: Block 6, Tsui Chuk Garden (NM-4)

Data	Weather	Start Time			dB(A)	
Date	weather	Start Time	Leq	L10	L90	Leq(30min)
		14:00	65.2	67.2	63.2	
		14:05	65.9	67.4	63.9	
2 San 2024	Fine	14:10	66.4	68.4	64.3	65.5
3 Sep 2024	rine	14:15	64.9	66.3	62.4	63.3
		14:20	65.7	67.4	63.2	
		14:25	64.9	66.9	62.4	
		14:15	50.2	52.1	49.2	
		14:20	51.2	53.3	50.2	
9 Sep 2024	Fine	14:25	53.6	55.7	51.4	52.2
9 Sep 2024	FIIIC	14:30	51.4	53.6	50.4	32.2
		14:35	52.2	54.6	51.2	
		14:40	53.6	55.1	51.4	
		15:35	54.3	55.8	52.8	
		15:40	56.7	58.2	55.3	
20 Sep 2024	Fine	15:45	55.8	57.3	54.3	55.4
20 Sep 2024	FIIIC	15:50	54.7	56.2	53.3	33.4
		15:55	55.6	57.1	54.1	
		16:00	54.9	56.4	53.4	
		15:30	55.6	57.1	54.1	
		15:35	54.7	56.2	53.2	
26 Sep 2024	Fine	15:40	54.8	56.3	53.3	55.1
20 Sep 2024	PHIC	15:45	55.1	56.6	53.6	33.1
		15:50	54.6	56.1	53.1	
		15:55	55.7	57.2	54.2	
					Min:	52.2
					Max:	65.5
					Average:	57.1

Construction Noise Monitoring Stations: Road pavement near Wang King House, Tin Wang Court (NM-4a)

					dB(A)		
Date	Weather		Leq	L10	L90	Leq(30min)	With Free-Fiel Correction
		11:00	67.1	68.1	66.3		69.0
		11:05	65.4	67.3	64.2		
2 G 2024	Fine	11:10	63.0	65.0	62.4	66.0	
3 Sep 2024	rine	11:15	62.6	63.4	61.7	66.0	09.0
		11:20	67.1	69.3	65.1		
		11:25	67.9	68.9	66.1		
		15:00	66.1	68.8	60.2		
		15:05	67.8	68.7	60.6		
0 San 2024	Fine	15:10	66.8	68.5	60.1	66.7	69.7
9 Sep 2024		15:15	68.1	70.6	60.5	00.7	0)./
		15:20	65.6	68.4	60.5		
		15:25	65.2	67.0	60.1		
		11:15	67.8	69.3	66.3	66.9	69.9
		11:20	66.5	68.0	65.0		
20 Sep 2024	Fine	11:25	67.2	68.7	65.7		
20 Sep 2024	Time	11:30	67.1	68.6	65.6		
		11:35	66.5	68.0	65.5		
		11:40	66.1	67.6	64.6		
		11:30	66.1	67.6	64.6		
		11:35	66.7	68.2	65.2		
26 Sep 2024	Fine	11:40	67.2	68.7	65.7	67.1	70.1
20 Sep 2024	rine	11:45	67.6	69.1	66.1	07.1	/0.1
		11:50	66.8	68.3	65.3		
		11:55	68.1	68.6	65.6		
					Min:	66.0	69.0
					Max:	67.1	70.1
					Average:	66.7	69.7



Appendix I - Construction Noise Monitoring Results

Construction Noise Monitoring Stations: Wo Tin House, Shatin Pass Estate (NM-5)

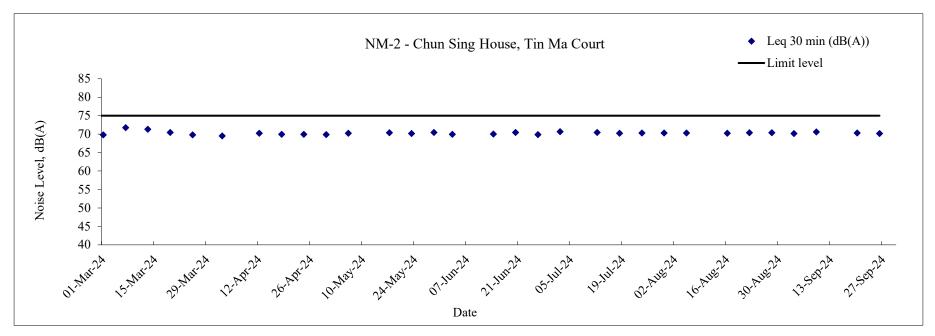
Date	Weather	Start Time			dB(A)	
Date	weather	Start Time	Leq	L10	L90	Leq(30min)
		14:40	60.4	63.2	57.9	
		14:45	58.5	61.6	54.3	
3 Sep 2024	Fine	14:50	60.8	63.8	57.1	60.3
3 Sep 2024	rine	14:55	61.4	65.3	57.2	00.3
		15:00	58.8	60.5	55.5	
		15:05	61.2	64.3	57.4	
		9:00	71.0	74.8	67.5	
		9:05	71.7	73.9	69.2	
9 Sep 2024	Fine	9:10	73.1	76.3	70.3	71.7
9 Sep 2024	rine	9:15	71.4	75.2	69.9	/1./
		9:20	73.0	74.4	71.2	
		9:25	68.0	73.9	66.5	
		14:15	66.8	68.3	65.3	
		14:20	67.5	69.0	66.0	
20 Sam 2024	Fine	14:25	67.2	68.7	65.7	67.0
20 Sep 2024	rine	14:30	66.5	68.0	65.0	07.0
		14:35	67.3	68.8	65.8	
		14:40	66.5	68.0	65.0	
		14:00	67.3	68.8	65.8	
		14:05	66.5	68.0	65.0	
26 San 2024	Fine	14:10	67.8	69.3	66.3	67.0
26 Sep 2024	FIIIC	14:15	66.1	67.6	64.6	07.0
		14:20	67.9	69.4	66.4	
		14:25	66.3	67.8	64.8	
					Min:	60.3
					Max:	71.7
					Average:	66.5

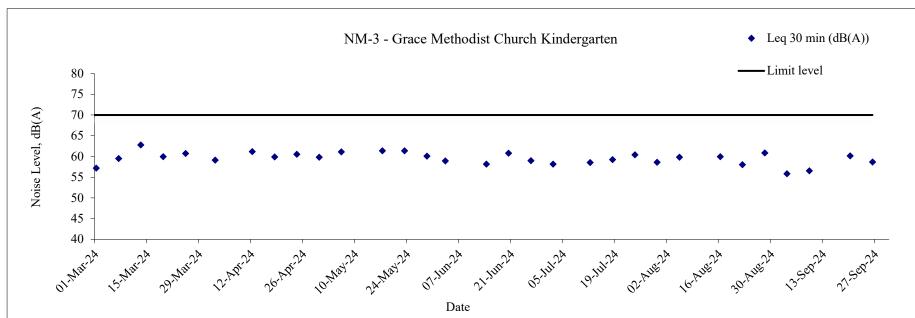
Construction Noise Monitoring Stations: Sheung Fung Street Customs Staff Quarters (NM-6)

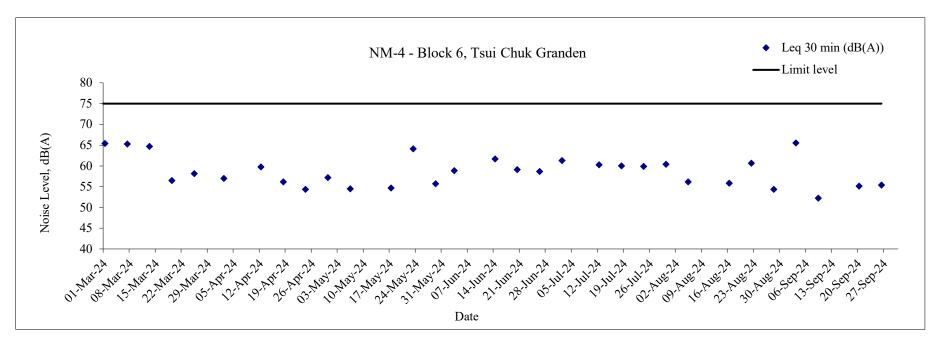
					dB(A)		
Date	Weather	ather Start Time	Leq	L10	L90	Leq(30min)	With Free-Fiel Correction
		15:29	61.6	64.0	57.3		
		15:34	62.9	65.9	57.3		
2 San 2024	Fine	15:39	63.5	66.8	57.1	69.0	72.0
3 Sep 2024	rine	15:44	74.6	78.5	69.8	09.0	/2.0
		15:49	69.5	71.3	66.2		
		15:54	66.0	69.0	62.8		
		9:42	63.4	66.8	62.6		
9 Sep 2024 Fine	9:47	62.8	65.1	61.7			
	Eino	9:52	62.3	65.9	60.8	64.4	67.4
	rine	9:57	67.5	72.7	65.3	04.4	07.7
		10:02	63.3	66.8	60.2		
		10:07	64.6	67.3	62.1		
		15:15	68.5	70.0	66.0	68.7	
		15:20	69.3	70.8	67.8		71.7
20 Sep 2024	Fine	15:25	67.2	68.7	65.7		
20 Sep 2024	rine	15:30	68.1	69.6	66.6	06.7	
		15:35	69.5	71.0	67.0		
		15:40	68.9	70.4	67.4		
		15:20	68.1	69.6	66.6		
		15:25	67.3	68.8	65.8		
26 Sep 2024	Fine	15:30	68.8	70.3	67.3	68.4	71.4
20 Sep 2024	Tille	15:35	69.5	71.0	67.0	00.7	/1.4
		15:40	68.1	69.6	66.6	1	
		15:45	68.4	69.9	66.9		
					Min:	64.4	67.4
					Max:	69.0	72.0
					Average:	67.6	70.6

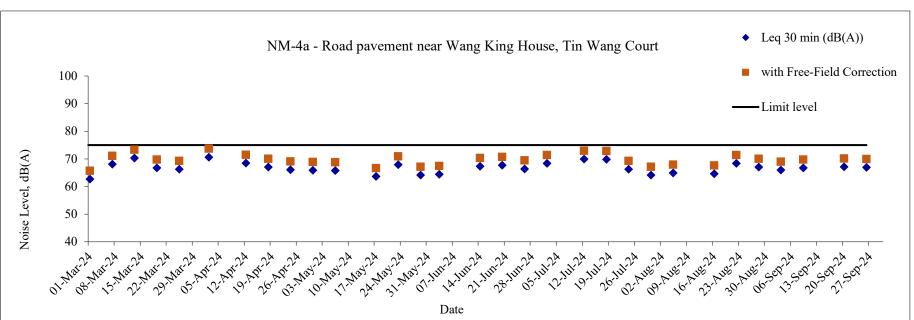


Construction Noise Monitoring Results



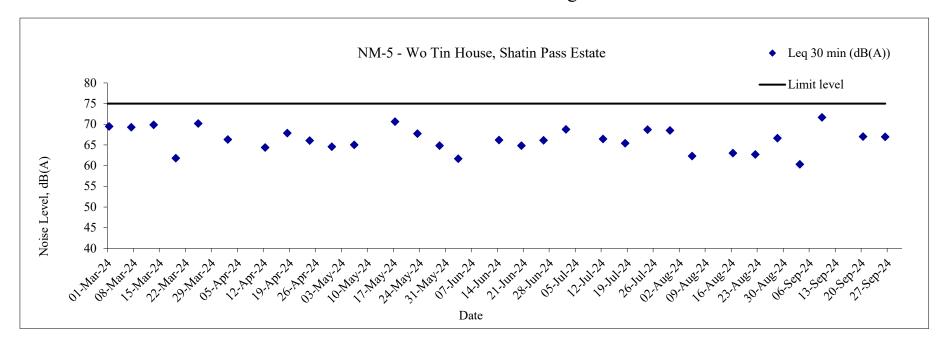


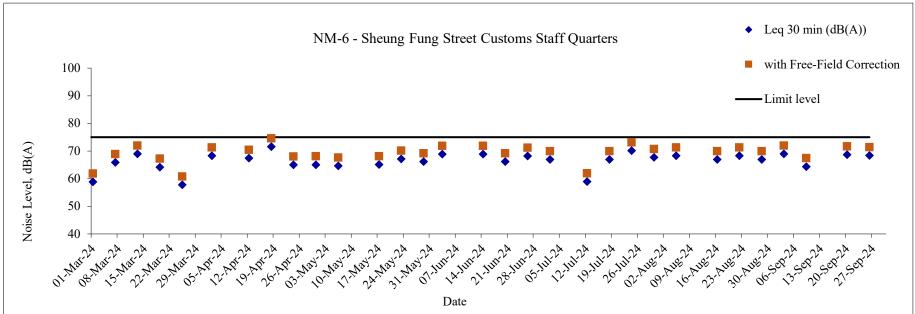






Construction Noise Monitoring Results









Appendix J

Waste Generation in the Reporting Month

Monthly Summary Waste Flow Table for 2023

Contract No.: 21/WSD/21 Contract Title: Relocation of Diamond Hill Fresh Water and Salt Water Service Reservoirs to Caverns

		Actual Quantities of Iner	t C&D Materials Ge	nerated / Imported (in '000m3)			Actual Qua	ntities of C&D Wastes Ge	nerated		А	ctual Quanti	ties of C&D V	/astes Recycl	ed
Month		Broken Concrete (including rock for				Imported		Paner/	Plastics (bottles/containers,pla		Others, e.g.		Paper/	Plastics (bottles/co ntainers,pl astic sheets/foa		
	Total Quantity	recycling into	Reused in the	Reused in other	Disposed as	Imported C&D		Paper/ cardboard	stic sheets/foam	Chemical	general		cardboard	m package		
	Generated	aggregates)	Contract	Projects	Public Fill	Material	Metals	packaging	package material)	Waste	refuse	Metals	packaging		Yard Waste	Others
						Iviaterial			· · ·	(in '000m ³)	(in '000m ³)		(in '000kg)	(in '000kg)	(in '000m ³)	(in '000m ³)
Jan-23	(a+b+c+d) 0.0000	(a) 0.0000	(b) 0.0000	(c) 0.0000	(d) 0.0000	0.0000	(in '000kg) 0.0000	(in '000kg) 0.0000	(in '000kg) 0.0000	0.0000	0.0000	(in '000kg) 0.0000	0.0000	0.0000	0.0000	0.0000
Feb-23	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mar-23	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Apr-23	0.0571	0.0000	0.0000	0.0000	0.0571	0.0000	0.0000	0.0000	0.0000	0.0000	0.2006	0.0000	0.0000	0.0000	0.0069	0.0000
May-23	0.9598	0.0000	0.0000	0.0000	0.9598	0.0000	0.0000	0.0000	0.0000	0.0000	0.0241	0.0000	0.0000	0.0000	0.0000	0.0000
Jun-23	0.1485	0.0000	0.0000	0.0000	0.1485	0.0000	0.0000	0.0000	0.0000	0.0000	0.0380	0.0000	0.0000	0.0000	0.0000	0.0000
Sub-total	1.1655	0.0000	0.0000	0.0000	1.1655	0.0000	0.0000	0.0000	0.0000	0.0000	0.2628	0.0000	0.0000	0.0000	0.0069	0.0000
Jul-23	0.0672	0.0000	0.0000	0.0000	0.0672	0.0000	0.0000	0.0000	0.0000	0.0000	0.0062	0.0072	0.0034	0.0098	0.0000	0.0000
Aug-23	0.1859	0.0000	0.0000	0.0000	0.1859	0.0000	0.0000	0.0000	0.0000	0.0000	0.0166	0.0058	0.0258	0.0055	0.0000	0.0000
Sep-23	0.2556	0.0000	0.0077	0.0000	0.2479	0.0000	0.0000	0.0000	0.0000	0.0000	0.0140	0.0054	0.0092	0.0042	0.0000	0.0000
Oct-23	0.1288	0.0000	0.0559	0.0000	0.0729	0.0000	0.0000	0.0000	0.0000	0.0000	0.0109	0.0057	0.0175	0.0096	0.0000	0.0000
Nov-23	0.7188	0.0000	0.1095	0.5769	0.0324	0.0000	0.0000	0.0000	0.0000	0.0000	0.0067	0.0010	0.0043	0.0089	0.0000	0.0000
Dec-23	1.4268	0.0000	0.0655	0.8576	0.5037	0.0000	0.0000	0.0000	0.0000	0.0000	0.0067	0.0000	0.0000	0.0000	0.0000	0.0000
Total	3.9486	0.0000	0.2386	1.4344	2.2755	0.0000	0.0000	0.0000	0.0000	0.0000	0.3238	0.0251	0.0601	0.0380	0.0069	0.0000
Jan-24	0.6490	0.0000	0.0182	0.2782	0.3526	0.0000	0.0000	0.0000	0.0000	0.0000	0.0042	0.0000	0.0000	0.0000	0.0000	0.0000
Feb-24	0.2876	0.0000	0.0655	0.1308	0.0913	0.0000	0.0000	0.0000	0.0000	0.0000	0.0233	0.0000	0.0000	0.0000	0.0000	0.0000
Mar-24	2.2947	0.0000	0.0585	0.9391	1.2971	0.0000	0.0000	0.0000	0.0000	0.0000	0.0126	0.0000	0.0000	0.0000	0.0000	0.0000
Apr-24	1.0091	0.0000	0.0182	0.6731	0.3178	0.0000	0.0000	0.0000	0.0000	0.0000	0.0141	0.0000	0.0000	0.0000	0.0000	0.0000
May-24	2.0728	0.0000	0.2505	0.5572	1.2651	0.0000	0.0000	0.0000	0.0000	0.0000	0.0226	0.0002	0.0111	0.0009	0.0000	0.0000
Jun-24	1.7085	0.0000	0.6745	0.6509	0.3831	0.0000	0.0000	0.0000	0.0000	0.0000	0.0166	0.0032	0.0208	0.0011	0.0000	0.0000
Jul-24	0.6157	0.0000	0.0821	0.3131	0.2205	0.0000	0.0000	0.0000	0.0000	0.0000	0.0116	0.0012	0.0146	0.0016	0.0000	0.0000
Aug-24	0.5297	0.0000	0.1241	0.1820	0.2236	0.0000	0.0000	0.0000	0.0000	0.0000	0.0281	0.0023	0.0160	0.0017	0.0000	0.0000
Sep-24	0.8353	0.0000	0.0169	0.2998	0.5185	0.0000	0.0000	0.0000	0.0000	0.0000	0.0229	0.0032	0.0133	0.0008	0.0000	0.0000
Oct-24																
Nov-24																
Dec-24																
Total	10.0023	0.0000	1.3084	4.0242	4.6697	0.0000	0.0000	0.0000	0.0000	0.0000	0.1559	0.0101	0.0758	0.0061	0.0000	0.0000

Note:

1. Assume the density of soil fill is 2 ton/m3.

2. Assume the density of rock and broken concrete is 2.5 ton/m3.

3. Assume the density of non-inert C&D waste is 0.9 ton/m³.





Appendix K

Summary of Complaint, Notification of Summons and Prosecution and Cumulative Complaint Log





Statistical Summary of Environmental Complaints

Danielius Davied	Environmental Complaint Statistics						
Reporting Period	Frequency	Cumulative	Complaint Nature				
1 August 2024 — 31 August 2024	0	0	N/A				
1 September 2024 - 30 September 2024	0	0	N/A				

Statistical Summary of Environmental Summons

Demostics Desired	Environmental Summons Statistics						
Reporting Period	Frequency	Cumulative	Details				
1 August 2024 - 31 August 2024	0	0	N/A				
1 September 2024 - 30 September 2024	0	0	N/A				

Statistical Summary of Environmental Prosecution

Reporting Period	Environmental Prosecution Statistics					
	Frequency	Cumulative	Details			
1 August 2024 - 31 August 2024	0	0	N/A			
1 September 2024 - 30 September 2024	0	0	N/A			





Cumulative statistics on Non-compliance (exceedances)

Reporting Period	Environmental Monitoring	Parameter	No. of project relations and exceeds AL	ject ted	Total no. of non-project related exceedances	No. exceed relate the pr	lances ed to	Total no. of exceedances related to the project
This Reporting Period	Air Quality	1-hour TSP	0	0	0	0	0	0
(1 – 30 September 2024)	Noise	$L_{eq(30 ext{-min})}$	0	0	0	0	0	0
Total no. recorded since	Air Quality	1-hour TSP	0	0	0	0	0	0
project commencement	Noise	$L_{eq(30 ext{-min})}$	0	1	1	0	0	0

Cumulative Complaint Log

EPD Complaint Ref No.	Date of Complaint	Complaint Location	Complaint Details	Investigation / Mitigation Action	Status
-	-	-	-	-	-