





Contract No. 13/WSD/16

Mainlaying in Tseung Kwan O

**17th Quarterly EM&A Report
For August to October 2022**

May 2023
(Rev. 2.0)

	Prepared by:	Reviewed and Certified by:
Name	Howard Chan	Jacky Leung
Position	Environmental Team	Environmental Team Leader
Signature		
Date:	15 May 2023	15 May 2023



Water Supplies Department
New Works Branch
Construction Division
11 Tai Yip Lane
Kowloon Bay
Kowloon
Hong Kong

Your reference:

Our reference: HKWSD201/50/108801

Date: 17 May 2023

Attention: Mr Jeff Yuen

BY POST

Quotation No.: WQ/17/A071
Independent Environmental Checker for Water Supplies Department
– Proposed Desalination Plant in TKO Area 137 for Contract No. 13/WSD/16
Verification of 17th Quarterly EM&A Report for August to October 2022

We refer to emails of 11 and 15 May 2023 attaching 17th Quarterly EM&A Report for August to October 2022 for the captioned project prepared by the ET.

We have no further comment and hereby verify the captioned report in accordance with Clause 3.5 of the Environmental Permit no. EP-503/2015/A.

Should you have any queries regarding the above, please do not hesitate to contact the undersigned or our Mr Louis Kwan on 2618 2831.

Yours faithfully
ANewR CONSULTING LIMITED

James Choi
Independent Environmental Checker

CPSJ/KSYL/lsm

Revision History

Rev.	DESCRIPTION OF MODIFICATION	DATE
1.0	1 st Submission	11/05/2023
2.0	Revised according to IEC's comment	15/05/2023

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EXECUTIVE SUMMARY

- A1. Penta-Ocean - Concentric Joint Venture (POCJV) is contracted to carry out the Mainlaying in Tseung Kwan O under Contract No. 13/WSD/16 (hereinafter known as “the Project”).
- A2. In accordance with the Environmental Monitoring and Audit (EM&A) Manual for the Project, EM&A works should be carried out by Environmental Team (ET), Acuity Sustainability Consulting Limited (ASCL), during the construction phase of the Project.
- A3. The construction works of Mainlaying in Tseung Kwan O were commenced on 30 August 2018. This is the 17th quarterly Environmental Monitoring and Audit (EM&A) summary Report prepared by ASCL. This report presents the EM&A works carried out during the period of 1 August to 31 October 2022.
- A4. All the environmental monitoring works were conducted in accordance with the EM&A Manual. The monitoring results were checked and reviewed. Site audits were conducted once per week. The implementation of the environmental mitigation measures, Event Action Plans and environmental complaint handing procedures were also checked.
- A5. A summary of the monitoring activities undertaken in this reporting period is listed below:

Monitoring Activities	Frequency
Daytime Noise monitoring	13 times
Landfill Gas Monitoring	1905 times
Environmental Site Inspection	13 times

- A6. All construction noise monitoring was conducted as scheduled in the reporting quarter. No Action and Limit Level exceedance for construction noise monitoring was recorded in the reporting quarter.
- A7. No Action and Limit Level exceedance of landfill gas monitoring was recorded in the reporting quarter.
- A8. No environmental complaint, notification of summons and prosecution was received in the reporting quarter. The Complaint Log is presented in **Appendix E**.
- A9. There were no changes to be reported that may affect the on-going EM&A programme.

1. BASIC PROJECT INFORMATION

1.1. Background

- 1.1.1. The proposed Desalination Plant at Tseung Kwan O (DPTKO) will produce potable water with an initial capacity of 135 million litres per day (MLD), expandable to an ultimate capacity of 270 MLD in the future to provide a secure and alternative fresh water resource complying with the World Health Organization (WHO) standards. The plant will adopt the Seawater Reverse Osmosis (SWRO) technology, which dominates the market due to its reliability and progressive reduction in cost as the technology advances.
- 1.1.2. Pursuant to the Environmental Impact Assessment Ordinance (EIAO), the Director of Environmental Protection granted the Variation of Environmental Permit (No. EP-503/2015/A) to Water Supplies Department (WSD) for the Project on 26 January 2018.
- 1.1.3. The scope of the Contract may be considered in brief, to consist of the laying of about 10km long 1200mm diameter freshwater mains and the associated works along the alignment of the Project as shown with the overall view in **Appendix B**.

1.2. The Reporting Scope

- 1.2.1. This is the 17th Quarterly EM&A Report for the Project which summarizes the key findings of the EM&A programme during the reporting period from 1 August to 31 October 2022.
- 1.2.2. Contact details of the key personnel are presented in **Table 1.1** below:

Table 1.1 Contract Details of Key Personnel

Party	Position	Name	Telephone no.
Penta-Ocean-Concentric Joint Venture	Environmental Officer	Calvin Chik	9863-5630
Acuity Sustainability Consulting Limited	Environmental Team Leader	Jacky Leung	2698-6833
ANewR Consulting Limited	Independent Environmental Checker	James Choi	2618-2831

1.3. Summary of Construction Works

- 1.3.1. Details of the major construction works undertaken in this reporting quarter are shown in **Table 1.2**. The construction programme is presented in **Appendix A**.

Table 1.2 Summary of Construction Works Undertaken in the Reporting Quarter

Location	Construction Works undertaken in the Reporting Quarter
TKO Area 137	
Pit A	Pipe trench excavation and pipe laying
Pit B	Pipe laying
Pit C	Pipe trench excavation and pipe laying

Location	Construction Works undertaken in the Reporting Quarter
Wan Po Road	
Workfront 1	Pipe trench excavation and pipe laying
Workfront 2	Pipe trench excavation and pipe laying
Workfront 3	Carriageway reinstatement
Workfront 5	Pipe trench excavation and pipe laying
Workfront 6	Pipe trench excavation, pipe laying and construction of Pit A0
Pit A	Hand-shield excavation between Pit A to Pit A0
Junction of Wan O Road	Pipe trench excavation and pipe laying
Central divider near Lohas Park	Backfilling & reinstatement of central divider
Pit C1	Pipe trench excavation and pipe laying
Shek Kok Road	
Pit D1	Pipe trench excavation and pipe laying
Roundabout	Trench backfilling and reinstatement
Pit D	Trench backfilling and reinstatement
Pit F	Pit construction
Creative School	
--	Trench excavation and pipe laying
Pung Loi Road	
Pit WPR1	TBM pipe jacking
Velodrome	
Pit L – Pit M	Pipe cleaning and connection
Pit M – Pit N	Hydrostatic pressure testing for completed pipe
Po Lam Road	
PLR South	Trench backfilling and reinstatement
Location A	Pipe cap construction and trench excavation and pipe laying
B3	Carriageway reinstatement
Tsui Lam Road	
Location B	Construction of pile cap, ELS, and excavation for cap construction
TKO Primary Service Reservoir	
--	Pipe cleaning and CCTV survey

1.4. Summary of Construction Works

- 1.4.1. A summary of the valid permits, licences, and /or notifications on environmental protection for this Project is presented in **Table 1.3**.

Table 1.3 Summary of the Status of Valid Environmental Licence, Notification, Permit and Documentations

Reference	Validity Period	Remark
Variation of Environmental Permit		
EP no.: EP -503/2015/A	Throughout the Contract	-
Notification of Construction Works under the Air Pollution Control (Construction Dust) Regulation (Form NA)		
Ref no.: 423775	Throughout the Contract	-

Reference	Validity Period	Remark
Chemical Waste Producer Registration		
WPN: 5213-839-P3287-01	Throughout the Contract	-
Billing Account for Disposal of Construction Waste		
A/C no.: 7029491	Throughout the Contract	-
Water Discharge License		
WT00032336-2018	Until 31 Dec 2023	-
Construction Noise Permit		
GW-RE0326-22	Until 1 Oct 2022	Expired in the reporting period
GW-RE0329-22	Until 1 Oct 2022	
GW-RE0330-22	Until 1 Oct 2022	
GW-RE0353-22	Until 1 Oct 2022	
GW-RE0706-22	Until 20 Oct 2022	

1.4.2. The status for all environmental aspects is presented **Table 1.4**.

Table 1.4 Summary of Status for Key Environmental Aspects under the EM&A Manual

Parameters	Status
Noise	
Baseline Monitoring	The baseline noise monitoring result has been reported in Baseline Monitoring Report and submitted to EPD under VEP Condition 3.4
Impact Monitoring	On-going
Waste Management	
Mitigation Measures in Waste Management Plan	On-going
Landfill Gas Monitoring	
Monitoring	On-going
Environmental Audit	
Site Inspection	On-going

1.4.3. Other than the EM&A works by ET, regular environmental management meetings were conducted in order to enhance environmental awareness and closely monitor the environmental performance of the contractors.

1.4.4. The EM&A programme has been implemented in accordance with the recommendations presented in the approved EIA Report and the EM&A Manual. A summary of implementation status of the environmental mitigation measures for the construction phase of the Project during the reporting period is provided in **Appendix C**.

2. NOISE MONITORING

2.1. Monitoring Requirements

2.1.1. To ensure no adverse noise impact, noise monitoring is recommended to be carried out within 300m radius from the nearby sensitive receivers (NSRs) during construction phase. Referring to the EM&A Manual Section 4.1.2, the impact noise monitoring should be carried out at all designated monitoring stations when there are project-related construction activities undertaken within a radius of 300m from the monitoring stations.

2.2. Monitoring Parameter

2.2.1. Impact noise monitoring was conducted weekly in the reporting quarter between 0700-1900 on normal weekdays. Construction noise level was measured in terms of the A-weighted equivalent continuous sound pressure level (L_{Aeq}). $L_{eq\ 30min}$ was used as the monitoring parameter for the time period between 0700 and 1900 on normal weekdays. **Table 2.1** summarizes the monitoring parameters, frequency, and duration of the impact noise monitoring.

Table 2.1 Noise Monitoring Parameters, Time, Frequency and Duration

Time	Frequency	Duration	Parameters
Daytime 0700 – 1900	Once per week	Continuously in Leq 5min/Leq 30min (average of 6 consecutive Leq 5min)	L_{eq} , L_{10} & L_{90}

2.2.2. The monitoring methodology and QA/QC procedure could be referring to Section 2.4 of the Monthly EM&A Report.

2.3. Monitoring Location

2.3.1. According to the environmental findings detailed in the EIA report and Baseline Monitoring Report, the designated locations for the construction noise monitoring are listed in **Table 2.2** and shown in **Figure 2.1 – 2.3**.

Table 2.2 Designated Noise Monitoring Station

NSR ID	Noise Sensitive Receivers	Monitoring Location	Position
NSR4	Creative Secondary School	Roof Floor	1m from Façade
NSR24	PLK Laws Foundation College	Pedestrian Road on Ground Floor	Free-Field
NSR31	School of Continuing and Professional Studies - CUHK	Roof Floor	1m from Façade



Figure 2.1 NSR4 Creative Secondary School

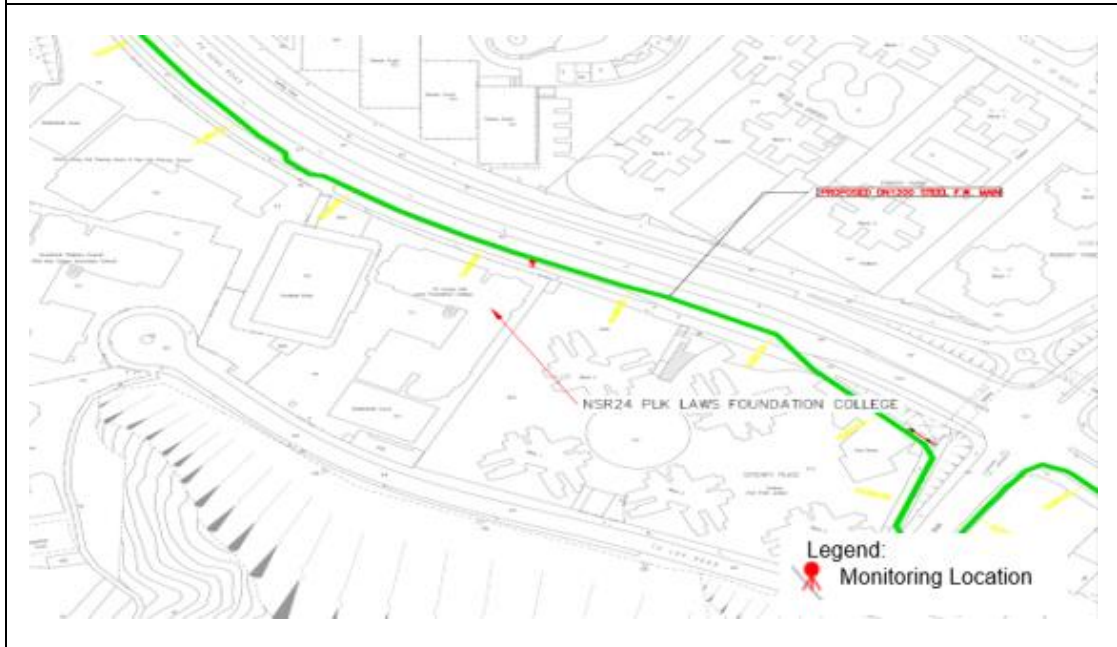
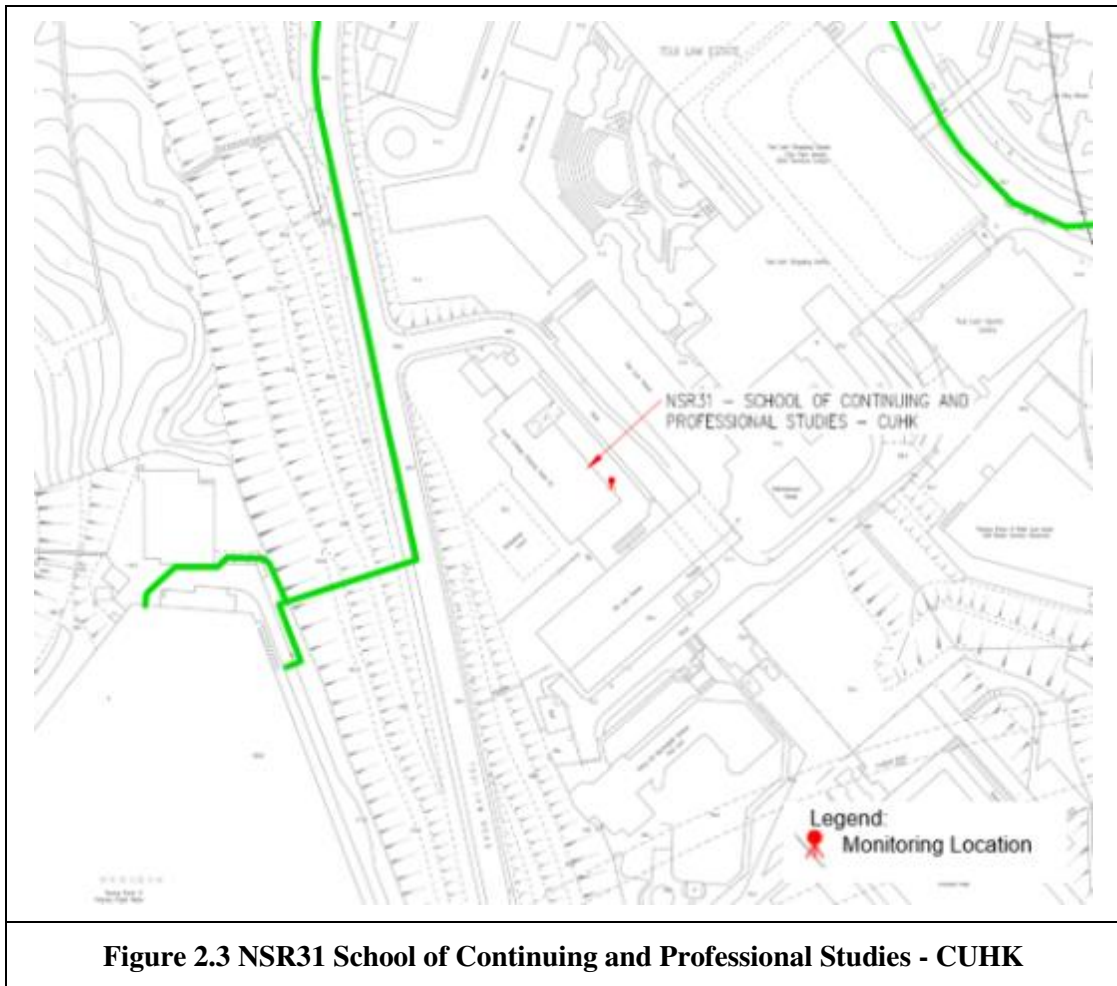


Figure 2.2 NSR24 PLK Laws Foundation College



2.4. Action and Limit Level

2.4.1. The Action/Limit Levels are in line with the criteria of Practice Note for Professional Persons (ProPECC PN 2/93) “Noise from Construction Activities – Non-statutory Controls” and Technical Memorandum on Environmental Impact Assessment Process issued by HKSAR Environmental Protection Department [“EPD”] under the Environmental Impact Assessment Ordinance, Cap 499, S.16 are presented in **Table 2.3**.

Table 2.3 Action and Limit Level for Construction Noise Monitoring

Time Period	Action Level	Limit Level
0700 – 1900 on normal weekdays	When one documented complaint is received from any one of the noise sensitive receivers	<ul style="list-style-type: none"> • 70 dB(A) for school and • 65 dB(A) during examination period
Notes: (a) Limits specified in the GW-TM and IND-TM for construction and operation noise, respectively.		

2.5. Monitoring Results and Observation

- 2.5.1. 13 times of noise impact monitoring were conducted as schedule in the reporting quarter at NSR4 Creative Secondary School since projected-related construction activities were undertaken within a radius of 300m from the monitoring location.
- 2.5.2. No construction works were conducted within 300m radius of NSR4 and NSR31. Thus, no construction noise monitoring was carried out at NSR4 and NSR31 in the reporting quarter.
- 2.5.3. The Graphical presentation of the construction noise monitoring results was shown in **Figure 2.4**.

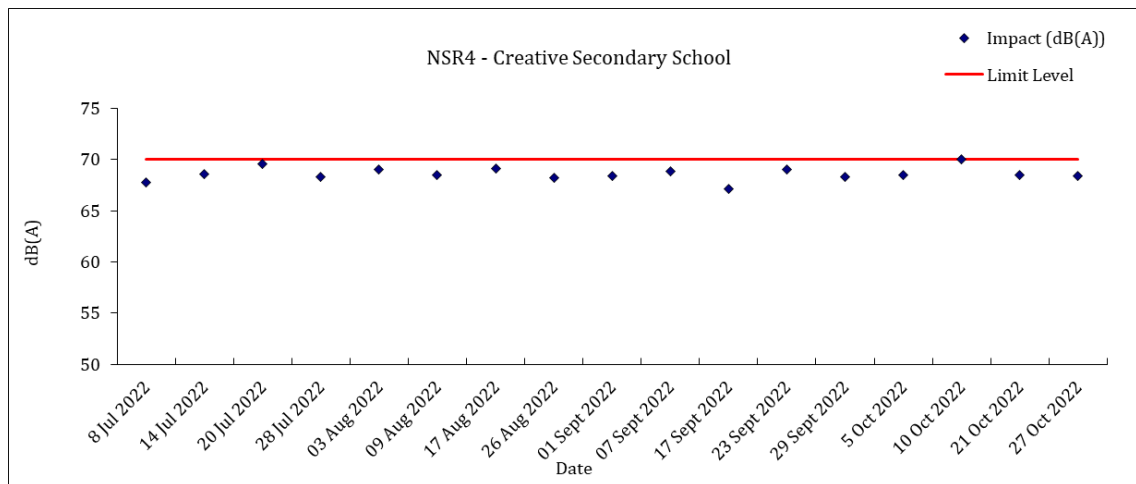


Figure 2.4 Graphical presentation of the construction noise monitoring at NSR4

- 2.5.4. No Action or Limit level exceedance of construction noise monitoring was recorded in the reporting quarter. Summary of exceedance could be referring to **Appendix D**.
- 2.5.5. If non-compliance occurred, actions as stated in **Appendix F** will be undertaken.
- 2.5.6. The major noise sources identified at the designated noise monitoring station were vehicle movement near the Creative Secondary School.

3. WASTE MANAGEMENT

- 3.1. Mitigation measure on waste management have been implemented in accordance with the requirements of the EM&A Manual. Suitable C&D materials were reused on-site, while the remaining C&D materials and non-inert wastes were disposed at the public filling reception facilities and the landfills respectively. The quantities disposed in the reporting quarter could be referring to **Appendix G**.

4. SUMMARY OF EXCEEDANCE, COMPLAINTS, NOTIFICATION OF SUMMONS AND PROSECUTIONS

- 4.1. All construction noise monitoring was conducted as schedule in the reporting quarter. No Action or Limit Level exceedance was recorded in the reporting quarter.
- 4.2. Landfill gas monitoring was carried out by the Registered Safety Officer of the Contractor at the excavation locations and within the consultation zones. No Action or Limit Level exceedance was recorded in the reporting quarter. Summary of Exceedance could be referring to **Appendix D**.
- 4.3. No environmental complaint, notification of summons and prosecution was received in the reporting quarter.

5. EM&A SITE INSPECTION

- 5.1. Site inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures under the Contract. Three joint site inspections with IEC were carried out on 26 August, 27 September, 26 October 2022.
- 5.2. Minor deficiencies were observed during weekly site inspection. Key observations during the site inspections are summarized in **Table 5.1 – 5.3**.

Table 5.1 Site Observations (August 2022)

Date	Environmental Observations	Follow-up Status
5 August 2022	No major observation was recorded on the respective day.	Nil
12 August 2022	No major observation was recorded on the respective day.	Nil
19 August 2022	<ol style="list-style-type: none"> Drip tray should be provided for chemical storage (Pit D) Muddy surface runoff should be collected and treated properly to comply the discharge license standard. (Pit D) Gully should be protected / covered to avoid untreated wastewater discharge to gully. (Pit D) Oil leakage was observed at Wan Po Road Pit A. Contractor was reminded to clear the oil stain and avoid further oil leakage from the machine. 	<ol style="list-style-type: none"> Chemical was removed. Surface runoff was collected and treated properly before discharge. Gully was covered. Oil leakage was prevented
26 August 2022	No major observation was recorded on the respective day.	

Table 5.2 Site Observations (September 2022)

Date	Environmental Observations	Follow-up Status
1 September 2022	<ol style="list-style-type: none"> Drip tray should be provided for chemical storage. (Pit D) Muddy surface runoff should be collected and treated properly and avoid runoff to nearby gully. (Pit D) Gully should be protected and covered properly to avoid muddy water discharge into gully. (Pit D) 	<ol style="list-style-type: none"> Chemical was removed. Surface runoff was collected and treated properly. Gully was covered properly.
8 September 2022	<ol style="list-style-type: none"> Pit 2 and 6 the water drains along the construction site shall be blocked or cover with sandbags to avoid any polluted water into the storm drain. There are no sedimentation tanks available on site, the contractors 	<ol style="list-style-type: none"> Water drains along the construction site was surrounded by sandbags to avoid polluted water into the storm drain.

Date	Environmental Observations	Follow-up Status
	<p>are required to modify as soon as possible, no discharge are allowed.</p> <p>3. There are general refuses found along the site Pit 2 and 3, the contractor shall provide sufficient garbage containers and clean up / remove the refuses immediately.</p> <p>4. There are chemicals found in Pit 2 placed on the ground, the chemicals shall be stored properly (i.e., drip tray)</p>	<p>2. Sedimentation tank was deployed on site, all wastewater was treated before discharge.</p> <p>3. General refuse was removed.</p> <p>4. Chemical were removed.</p>
16 September 2022	<p>1. Drip tray shall be provided for chemical storage. (Pit D)</p> <p>2. Wastewater should be treated with wastewater treatment facility before discharge. (TKO Area 137 Pit C)</p> <p>3. Muddy surface runoff should be collected and treated properly and avoid runoff to nearby gully. (Pit D)</p>	<p>1. Chemical was removed.</p> <p>2. Wastewater treatment facility was deployed on site.</p> <p>3. Surface runoff was collected and treated properly.</p>
22 September 2022	<p>1. Drip tray should be provided for chemical storage. (Location B, Pit X)</p> <p>2. Construction materials should be removed inside the tree protection zone. (Location B)</p>	<p>1. Chemical was removed.</p> <p>2. Construction materials were removed from the tree protection zone.</p>
27 September 2022	<p>1. Drip tray should be provided for chemical storage. (Creative School</p>	<p>1. Chemical was removed.</p>

Table 5.3 Site Observations (October 2022)

Date	Environmental Observations	Follow-up Status
7 October 2022	<p>1. Drip tray shall be provided for chemical storage. (Pit O)</p> <p>2. Site hoarding should be properly erected. (Pit L)</p>	<p>1. Chemical was removed.</p> <p>2. Site hoarding was properly erected.</p>
14 October 2022	<p>1. Drip tray should be provided for chemical container (Pit D).</p> <p>2. Surface runoff should be treated and avoid direct discharge to storm drain. (Pit D)</p> <p>3. Oil leakage was observed at Shek Kok Road roundabout. Contractor was reminded to regular inspect the equipment and machine to ensure it is in good condition.</p> <p>4. Construction materials should not be stored in the tree protection zone. (Shek Kok Road roundabout)</p> <p>5. Smoke emitting plants such as generator should be shielded by a</p>	<p>1. Chemical was removed.</p> <p>2. Surface runoff was treated before discharge.</p> <p>3. Oil stain was cleared, and equipment was maintained properly to avoid further leakage.</p> <p>4. Construction materials were removed.</p> <p>5. Generator was removed on site.</p>

	<p>screen near the pedestrian at Shek Kok Road Pit D1.</p> <p>6. Gully should be covered and surrounded with sandbags to avoid soil/ sand drip in. (Shek Kok Road Pit D1)</p>	<p>6. Gully was surrounded with sandbags.</p>
21 October 2022	<p>1. Chemical containers shall be stored with drip tray. (Wan Po Road Workfront 1&4)</p> <p>2. Gully should be covered and avoid soil drop in. (Wan Po Road Workfront 4)</p> <p>3. Polluted water should be treated with wastewater treatment facility before discharge. (Wan Po Road Workfront 1&4)</p> <p>4. Stockpile of dusty materials shall be covered properly.</p> <p>5. Oil leakage shall be avoided. Contractor was reminded to regular inspect the condition of the equipment. (Wan Po Road Workfront 4)</p>	<p>1. Chemical was removed.</p> <p>2. Gully was covered.</p> <p>3. No polluted water was observed discharging to nearby gully.</p> <p>4. Stockpile of dusty materials was covered properly.</p> <p>5. Oil leakage was cleared.</p>
26 October 2022	<p>No observation was recorded during site inspection.</p>	<p>Nil</p>

5.3. According to the EIA Study Report, Environmental Permit, contract documents and EM&A Manual, the mitigation measures detailed in the documents should be implemented as much as practical. An updated Implementation Status of Environmental Mitigation Measures (EMIS) is provided in **Appendix C**.

6. LANDFILL GAS MONITORING

6.1. Monitoring Requirements

6.1.1. In accordance with Section 11 of the EM&A Manual, monitoring of landfill gas is required for construction works within the 250m Consultation Zone. Part of the desalination plant and the indicative area of natural slope mitigation works fall within the SENT Landfill Extension Consultation Zone; and part of the 1,200 mm diameter freshwater mains along Wan Po Road falls within the SENT Landfill and SENT Landfill Extension Consultation Zones, TKO Stage II/III Restored Landfill and TKO Stage I Restored Landfill Consultation Zones.

6.2. Monitoring Location

6.2.1. Monitoring of oxygen, methane, carbon dioxide and barometric pressure was performed for excavations at 1m depth or more within the Consultation Zone.

6.2.2. During construction of works within the consultation zones, excavations of 1m depth or more was monitored:

- At the ground surface before excavation commences;
- Immediately before any worker enters the excavation;
- At the beginning of each working day for the entire period when the excavation remains open; and
- Periodically through the working day whilst workers are in the excavation.

6.2.3. For excavations between 300mm and 1m deep, measurements should be carried out:

- Directly after the excavation has been completed; and
- Periodically whilst the excavation remains open.

6.3. Monitoring Parameter

6.3.1. Landfill Gas monitoring was carried out to identify any migration between the landfill and the Project and to ensure the safety of the construction, operation and maintenance personnel working on-site, visitors and any other person within the Project area.

6.3.2. The following parameters were monitored:

- Oxygen;
- Carbon Dioxide;
- Barometric Pressure
- Methane;

6.3.3. The monitoring methodology and equipment could be referring to Section 4.5 of the Monthly Report.

6.4. Action and Limit Level

6.4.1. Action and Limit Level are presented in **Table 6.1**.

Table 6.1 Action and Limit Level for Landfill Gas Monitoring

Parameters	Action Level	Limit Level
Oxygen (O ₂)	<19% O ₂	<19% O ₂
Methane (CH ₄)	>10% LEL	>20% LEL
Carbon Dioxide (CO ₂)	>0.5% CO ₂	>1.5% CO ₂

6.5. Monitoring Result

6.5.1. In the reporting quarter, landfill gas monitoring was carried out by the Registered Safety Officer of the Contractor at the excavation locations for 1905 times. No action or limit level exceedance was recorded in the reporting quarter. The landfill gas monitoring results could be referring to **Appendix J** of the Monthly EM&A Report.

7. CONCLUSION AND RECOMMENDATIONS

- 7.1. This is the 17th quarterly Environmental Monitoring and Audit (EM&A) Summary Report prepared by ASCL. This report presents the EM&A works carried out during the period of 1 August to 31 October 2022 in accordance with the EM&A Manual and the requirement under EP-503/2015/A.
- 7.2. 13 times of noise impact monitoring were conducted in the reporting quarter at NSR4 Creative Secondary School since projected-related construction activities were undertaken within a radius of 300m from the monitoring location.
- 7.3. No Action or Limit Level exceedance of construction noise was recorded during the reporting quarter.
- 7.4. No landfill gas monitoring exceedance was recorded in the reporting quarter.
- 7.5. Weekly environmental site inspection was conducted during the reporting quarter. Minor deficiencies were observed during site inspection and were rectified. The environmental performance of the Project was therefore considered satisfactory.
- 7.6. According to the environmental site inspections performed in the reporting quarter, the Contractor is reminded to pay attention on proper storage of chemical and maintaining site tidiness. The Contractor is also reminded to consider the treatment of wastewater from the construction site area.
- 7.7. No environmental complaint, notification of summons and prosecution was received in the reporting quarter.
- 7.8. The ET will keep track on the construction works to confirm compliance of environmental requirements and the proper implementation of all necessary mitigation measures.
- 7.9. Statistics on complaints and regulatory compliance are summarized in **Appendix E**.

Appendix A

Master Programme

ID	Task Name	Duration	Start	Finish	Task Calendar	Predecessors	Successors	% Complete	Actual Start	Actual Finish	Gantt Chart															
											2018	2019	2020	2021	2022	2023	2024	2025	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1	Key Dates	2495 days	Tue 7/11/17	Thu 5/9/24	Calendar Day			0%	Tue 7/11/17	NA	[Gantt Chart for Key Dates]															
2	Contract Date	0 days	Tue 7/11/17	Tue 7/11/17	Calendar Day		67,59,60FS+27 days,61,62,58	100%	Tue 7/11/17	Tue 7/11/17	◆ 7/11															
3	Starting Date	0 days	Thu 16/11/17	Thu 16/11/17	Calendar Day		4,5FS+730 days,6FS+1279 days	100%	Thu 16/11/17	Thu 16/11/17	◆ 16/11															
4	Access Date of Portion A, B, C, D, E, F, G and J	0 days	Thu 16/11/17	Thu 16/11/17	Calendar Day	3	90,63,71,73,75,78,79	100%	Thu 16/11/17	Thu 16/11/17	◆ 16/11															
5	Access Date of Portion H	0 days	Sat 16/11/19	Sat 16/11/19	Calendar Day	3FS+730 days	110	100%	Sat 16/11/19	Sat 16/11/19	◆ 16/11															
6	Completion Date (Contract)	0 days	Tue 18/5/21	Tue 18/5/21	Calendar Day	3FS+1279 days	7	100%	Tue 18/5/21	Tue 18/5/21	◆ 18/5															
7	EOT for CE No. 23 Inclement Weather - In June 2018	0 days	Tue 18/5/21	Tue 18/5/21	HK Working Day	6	8	100%	Tue 18/5/21	Tue 18/5/21	◆ 18/5															
8	EOT for CE No. 01	246 days	Wed 19/5/21	Wed 19/1/22	Calendar Day	7	9FF	0%	NA	NA	◆ 19/1															
9	Revised Completion Date	0 days	Wed 19/1/22	Wed 19/1/22	Calendar Day	8FF	11FS+365 days	0%	NA	NA	◆ 19/1															
10	Planned Completion	0 days	Thu 5/9/24	Thu 5/9/24	Calendar Day	12FF		0%	NA	NA	◆ 5/9															
11	Defect Date	0 days	Thu 19/1/23	Thu 19/1/23	Calendar Day	9FS+365 days		0%	NA	NA	◆ 19/1															
12	Mainlaying in Tseung Kwan O	2495 days	Tue 7/11/17	Thu 5/9/24	Calendar Day		10FF	77%	Tue 7/11/17	NA	[Gantt Chart for Mainlaying in Tseung Kwan O]															
13	Issued Compensation Events (General)	1316 days	Tue 12/6/18	Tue 18/1/22	Calendar Day			100%	Tue 12/6/18	Tue 18/1/22	[Gantt Chart for Issued Compensation Events]															
56	Preliminaries	1636 days	Tue 7/11/17	Sat 30/4/22	Calendar Day			100%	Tue 7/11/17	Sat 30/4/22	[Gantt Chart for Preliminaries]															
57	Submission and Permit Application	322 days	Tue 7/11/17	Mon 24/9/18	Calendar Day			100%	Tue 7/11/17	Mon 24/9/18	[Gantt Chart for Submission and Permit Application]															
69	Subcontracting	1122 days	Thu 16/11/17	Fri 11/12/20	Calendar Day			100%	Thu 16/11/17	Fri 11/12/20	[Gantt Chart for Subcontracting]															
88	Site Establishment	220 days	Tue 2/1/18	Thu 9/8/18	Calendar Day			100%	Tue 2/1/18	Thu 9/8/18	[Gantt Chart for Site Establishment]															
91	Procurement of Major Material	1485 days	Sat 7/4/18	Sat 30/4/22	Calendar Day			100%	Sat 7/4/18	Sat 30/4/22	[Gantt Chart for Procurement of Major Material]															
101	Mainlaying in Tseung Kwan O Area 137 (Portion H)	1260 days	Tue 11/12/18	Wed 15/3/23	HK Working Day			92%	Tue 11/12/18	NA	[Gantt Chart for Mainlaying in Tseung Kwan O Area 137]															
102	Early Possession of Portion H	0 days	Mon 29/7/19	Mon 29/7/19	Calendar Day			100%	Mon 29/7/19	Mon 29/7/19	◆ 29/7															
103	Issue Date of CE No. 07 -Water Supply to No. TKO Desalination Plant at Portion H (NS250 HDPE Pipe)	0 days	Tue 22/1/19	Tue 22/1/19	Calendar Day		104	100%	Tue 22/1/19	Tue 22/1/19	◆ 22/1															
104	Material Procurement and Delivery in Batches	330 days	Tue 11/12/18	Tue 5/11/19	Calendar Day	103		100%	Tue 11/12/18	Tue 5/11/19	[Gantt Chart for Material Procurement]															
105	Open Cut Excavation, Pipe Laying and Reinstatement at TKO Area 137	597 days	Sat 10/8/19	Sat 14/8/21	HK Working Day		761	100%	Sat 10/8/19	Sat 14/8/21	[Gantt Chart for Open Cut Excavation]															
121	Trenchless Works (DN1200 MS PIPE + NS250 HDPE PIPE) at TKO Area 137	1162 days	Tue 22/1/19	Thu 22/12/22	HK Working Day		784,762	83%	Tue 22/1/19	NA	[Gantt Chart for Trenchless Works]															
164	Final Connection of NS250 HDPE Pipe to Existing at Wan Po Road	14 days	Tue 28/2/23	Wed 15/3/23	HK Working Day	788		0%	NA	NA	[Gantt Chart for Final Connection]															
165	Mainlaying From Boundary of Tseung Kwan O Area 137 to TKO Fresh Water Service Reservoir (Portion I)	1866 days	Tue 7/11/17	Mon 26/2/24	HK Working Day			74%	Tue 7/11/17	NA	[Gantt Chart for Mainlaying From Boundary]															
166	Open Cut Excavation, Pipe Laying and Reinstatement at Wan Po Road	1506 days	Thu 30/8/18	Thu 28/9/23	HK Working Day			81%	Thu 30/8/18	NA	[Gantt Chart for Open Cut Excavation]															
249	Trenchless Work at Wan Po Road From Pit A to Pit F	1866 days	Tue 7/11/17	Mon 26/2/24	HK Working Day			56%	Tue 7/11/17	NA	[Gantt Chart for Trenchless Work]															
368	Open Cut Excavation, Pipe Laying and Reinstatement at TKO Landfill Stage 1 and TKO South Waterfront Promenade	1221 days	Thu 23/8/18	Fri 7/10/22	HK Working Day			91%	Thu 23/8/18	NA	[Gantt Chart for Open Cut Excavation]															
413	Water Mains Near Pung Loi Road (CH.FD0+00 - CH.A3+51)	1020 days	Wed 17/6/20	Thu 23/11/23	HK Working Day			60%	Wed 17/6/20	NA	[Gantt Chart for Water Mains]															
436	Water Mains near Pung Loi Road and Po Yap Road (CH.FE0+00 - CH.A3+58)	758 days	Thu 20/8/20	Sat 11/3/23	HK Working Day		765	78%	Thu 20/8/20	NA	[Gantt Chart for Water Mains]															
479	Trenchless Work from Po Yap Road Roundabout to KMB Depot (Pit K to Pit L) (Pit O to Pit P)	822 days	Fri 28/2/20	Mon 5/12/22	HK Working Day		765	55%	Fri 28/2/20	NA	[Gantt Chart for Trenchless Work]															
517	Trenchless Work from Po Yap Road Roundabout (Hong Kong Velodrome)	1251 days	Tue 2/4/19	Mon 26/6/23	HK Working Day		765	80%	Tue 2/4/19	NA	[Gantt Chart for Trenchless Work]															
583	Water Mains from KMB Depot to TKO Fresh Water Preliminary Service Reservoir	1649 days	Tue 7/11/17	Mon 5/6/23	HK Working Day			80%	Tue 7/11/17	NA	[Gantt Chart for Water Mains]															
759	DN800 - CH.ADN1200 MS Pipe Static Pressure Test, Pipeline Cleaning, CCTV Inspection, Sterilization and Water Sampling	1232 days	Wed 24/3/21	Tue 6/8/24	Calendar Day			13%	Wed 24/3/21	NA	[Gantt Chart for DN800 - CH.ADN1200 MS Pipe]															
760	Static Pressure Test	1112 days	Wed 24/3/21	Mon 8/4/24	Calendar Day			18%	Wed 24/3/21	NA	[Gantt Chart for Static Pressure Test]															
771	Pipeline Cleaning and CCTV Inspection	1153 days	Wed 12/5/21	Sun 7/7/24	Calendar Day			10%	Wed 12/5/21	NA	[Gantt Chart for Pipeline Cleaning]															
781	Sterilization and Water Sampling	30 days	Mon 8/7/24	Tue 6/8/24	Calendar Day			0%	NA	NA	[Gantt Chart for Sterilization]															
783	NS250 HDPE Pipe Static Pressure, Pipeline Cleaning, CCTV Inspection, Sterilization and Water Sampling	60 days	Fri 23/12/22	Mon 20/2/23	Calendar Day			0%	NA	NA	[Gantt Chart for NS250 HDPE Pipe]															
786	Handover Portion I and Portion H to WSD Region	563 days	Tue 21/2/23	Thu 5/9/24	Calendar Day			0%	NA	NA	[Gantt Chart for Handover]															
789	Water Supply to Tseung Kwan O Desalination Plant at Fill Bank of Tseung Kwan O Area 137 (Portion J)	445 days	Tue 7/11/17	Sat 11/5/19	HK Working Day			99%	Tue 7/11/17	NA	[Gantt Chart for Water Supply]															

Project: Mainlaying in Tseung Kwan O

ID	Task Name	Duration	Start	Finish	Task Calendar	Predecessors	Successors	% Complete	Actual Start	Actual Finish	Timeline																			
											2018	2019	2020	2021	2022	2023	2024	2025	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1	Key Dates	2495 days	Tue 7/11/17	Thu 5/9/24	Calendar Day			0%	Tue 7/11/17	NA	[Timeline bars for Key Dates]																			
10	Planned Completion	0 days	Thu 5/9/24	Thu 5/9/24	Calendar Day	12FF		0%	NA	NA	[Timeline bar for Planned Completion]																			
12	Mainlaying In Tseung Kwan O	2495 days	Tue 7/11/17	Thu 5/9/24	Calendar Day		10FF	77%	Tue 7/11/17	NA	[Timeline bar for Mainlaying In Tseung Kwan O]																			
165	Mainlaying From Boundary of Tseung Kwan O Area 137 to TKO Fresh Water Service Reservoir (Portion I)	1866 days	Tue 7/11/17	Mon 26/2/24	HK Working Day			74%	Tue 7/11/17	NA	[Timeline bar for Mainlaying From Boundary of Tseung Kwan O Area 137 to TKO Fresh Water Service Reservoir (Portion I)]																			
249	Trenchless Work at Wan Po Road From Pit A to Pit F	1866 days	Tue 7/11/17	Mon 26/2/24	HK Working Day			56%	Tue 7/11/17	NA	[Timeline bar for Trenchless Work at Wan Po Road From Pit A to Pit F]																			
251	Trenchless Works (Pit A to Pit D)	1354 days	Fri 2/8/19	Mon 26/2/24	HK Working Day		763	51%	Fri 2/8/19	NA	[Timeline bar for Trenchless Works (Pit A to Pit D)]																			
273	New Routing From Pit A to Pit D)	553 days	Thu 14/4/22	Mon 26/2/24	HK Working Day			0%	Thu 14/4/22	NA	[Timeline bar for New Routing From Pit A to Pit D)																			
275	XP Application for WPR, SKR and Open Trench at Shek Kok Road	60 days	Tue 19/4/22	Thu 30/6/22	HK Working Day	274	278,279,286	0%	NA	NA	[Timeline bar for XP Application for WPR, SKR and Open Trench at Shek Kok Road]																			
279	Trial Pit Excavation at Pit SKR	10 days	Sat 2/7/22	Wed 13/7/22	HK Working Day	275	288,285,284	0%	NA	NA	[Timeline bar for Trial Pit Excavation at Pit SKR]																			
284	Pipe Laying (OC) from Pit SKR to Pit D (1st 200m)	200 days	Thu 14/7/22	Tue 14/3/23	HK Working Day	279	288	0%	NA	NA	[Timeline bar for Pipe Laying (OC) from Pit SKR to Pit D (1st 200m)]																			
288	Construction of Pit SKR	90 days	Wed 15/3/23	Thu 6/7/23	HK Working Day	279,284	290	0%	NA	NA	[Timeline bar for Construction of Pit SKR]																			
290	Headshield Tunneling fom Pit SKR to Pit WPR (64m)	107 days	Fri 7/7/23	Sat 11/11/23	HK Working Day	288	292	0%	NA	NA	[Timeline bar for Headshield Tunneling fom Pit SKR to Pit WPR (64m)]																			
292	MS Pipe Laying in Segment from Pit SKR to Pit WPR	30 days	Sun 12/11/23	Mon 11/12/23	Calendar Day	290	295,296	0%	NA	NA	[Timeline bar for MS Pipe Laying in Segment from Pit SKR to Pit WPR]																			
295	Pipe Connection Works and construction of Inspoction Chamber at Pit WPR	60 days	Tue 12/12/23	Mon 26/2/24	HK Working Day	292,283		0%	NA	NA	[Timeline bar for Pipe Connection Works and construction of Inspoction Chamber at Pit WPR]																			
296	Pipe Connection Works and construction of Washout Chamber at Pit SKR	60 days	Tue 12/12/23	Mon 26/2/24	HK Working Day	292		0%	NA	NA	[Timeline bar for Pipe Connection Works and construction of Washout Chamber at Pit SKR]																			
759	DN800 - CH.ADN1200 MS Pipe Static Pressure Test, Pipeline Cleaning, CCTV Inspection, Sterilization and Water Sampling	1232 days	Wed 24/3/21	Tue 6/8/24	Calendar Day			13%	Wed 24/3/21	NA	[Timeline bar for DN800 - CH.ADN1200 MS Pipe Static Pressure Test, Pipeline Cleaning, CCTV Inspection, Sterilization and Water Sampling]																			
760	Static Pressure Test	1112 days	Wed 24/3/21	Mon 8/4/24	Calendar Day			18%	Wed 24/3/21	NA	[Timeline bar for Static Pressure Test]																			
763	DN1200 MS Pipe - Static Pressure Test From DN900 Valve Chamber at Wan Po Road (CH.A12+50) to DN900 Valve Chamber at TKO Landfill Stage I Area A (CH.FB1+66) (Approx. 1.4km)	42 days	Tue 27/2/24	Mon 8/4/24	Calendar Day	224,251,306	774	0%	NA	NA	[Timeline bar for DN1200 MS Pipe - Static Pressure Test From DN900 Valve Chamber at Wan Po Road (CH.A12+50) to DN900 Valve Chamber at TKO Landfill Stage I Area A (CH.FB1+66) (Approx. 1.4km)]																			
771	Pipeline Cleaning and CCTV Inspection	1153 days	Wed 12/5/21	Sun 7/7/24	Calendar Day			10%	Wed 12/5/21	NA	[Timeline bar for Pipeline Cleaning and CCTV Inspection]																			
774	DN1200 MS Pipe - Pipeline Cleaning and CCTV Inspection From DN900 Valve Chamber at Wan Po Road (CH.A12+50) to DN900 Valve Chamber at TKO Landfill Stage I Area A	90 days	Tue 9/4/24	Sun 7/7/24	Calendar Day	763	782	0%	NA	NA	[Timeline bar for DN1200 MS Pipe - Pipeline Cleaning and CCTV Inspection From DN900 Valve Chamber at Wan Po Road (CH.A12+50) to DN900 Valve Chamber at TKO Landfill Stage I Area A]																			
781	Sterilization and Water Sampling	30 days	Mon 8/7/24	Tue 6/8/24	Calendar Day			0%	NA	NA	[Timeline bar for Sterilization and Water Sampling]																			
782	DN1200 MS Pipe - Portion I & Portion H (Total Water = 9700 cu.m)	30 days	Mon 8/7/24	Tue 6/8/24	Calendar Day	772,773,774,775,777,778,7787		0%	NA	NA	[Timeline bar for DN1200 MS Pipe - Portion I & Portion H (Total Water = 9700 cu.m)]																			
786	Handover Portion I and Portion H to WSD Region	563 days	Tue 21/2/23	Thu 5/9/24	Calendar Day			0%	NA	NA	[Timeline bar for Handover Portion I and Portion H to WSD Region]																			
787	DN1200 MS Pipe - Portion I & Portion H (Area 137)	30 days	Wed 7/8/24	Thu 5/9/24	Calendar Day	782		0%	NA	NA	[Timeline bar for DN1200 MS Pipe - Portion I & Portion H (Area 137)]																			

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

Project: Mainlaying in Tseung Kwan O											2018																2019				2020				2021				2022				2023				2024				2025					
ID	Task Name	Duration	Start	Finish	Task Calendar	Predecessors	Successors	% Complete	Actual Start	Actual Finish	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4														
1	Key Dates	2495 days	Tue 7/11/17	Thu 5/9/24	Calendar Day			0%	Tue 7/11/17	NA																																														
2	Contract Date	0 days	Tue 7/11/17	Tue 7/11/17	Calendar Day		67,59,60FS+27 days,61,62,58	100%	Tue 7/11/17	Tue 7/11/17	◆																																													
3	Starting Date	0 days	Thu 16/11/17	Thu 16/11/17	Calendar Day		4,5FS+730 days,6FS+1279 days	100%	Thu 16/11/17	Thu 16/11/17	◆																																													
4	Access Date of Portion A, B, C, D, E, F, G and J	0 days	Thu 16/11/17	Thu 16/11/17	Calendar Day	3	90,63,71,73,75,78,79	100%	Thu 16/11/17	Thu 16/11/17	◆																																													
5	Access Date of Portion H	0 days	Sat 16/11/19	Sat 16/11/19	Calendar Day	3FS+730 days	110	100%	Sat 16/11/19	Sat 16/11/19											◆																																			
6	Completion Date (Contract)	0 days	Tue 18/5/21	Tue 18/5/21	Calendar Day	3FS+1279 days	7	100%	Tue 18/5/21	Tue 18/5/21											◆																																			
7	EOT for CE No. 23 Inclement Weather - In June 2018	0 days	Tue 18/5/21	Tue 18/5/21	HK Working Day	6	8	100%	Tue 18/5/21	Tue 18/5/21											◆																																			
8	EOT for CE No. 01	246 days	Wed 19/5/21	Wed 19/1/22	Calendar Day	7	9FF	0%	NA	NA											◆																																			
9	Revised Completion Date	0 days	Wed 19/1/22	Wed 19/1/22	Calendar Day	8FF	11FS+365 days	0%	NA	NA											◆																																			
10	Planned Completion	0 days	Thu 5/9/24	Thu 5/9/24	Calendar Day	12FF		0%	NA	NA																																										◆				
11	Defect Date	0 days	Thu 19/1/23	Thu 19/1/23	Calendar Day	9FS+365 days		0%	NA	NA																																										◆				
12	Mainlaying In Tseung Kwan O	2495 days	Tue 7/11/17	Thu 5/9/24	Calendar Day		10FF	77%	Tue 7/11/17	NA																																														
13	Issued Compensation Events (General)	1316 days	Tue 12/6/18	Tue 18/1/22	Calendar Day			100%	Tue 12/6/18	Tue 18/1/22																																														
14	Issue CE No. 03 - Upgrading of bandwidth of Internet Services for Site Accommodation	0 days	Tue 12/6/18	Tue 12/6/18	Calendar Day		68	100%	Tue 12/6/18	Tue 12/6/18	◆																																													
15	Issue CE No. 01 - Change in Pressure Rating of Watermain, Valves and Fittings from PN16 to PN25	0 days	Thu 12/7/18	Thu 12/7/18	Calendar Day		68	100%	Thu 12/7/18	Thu 12/7/18	◆																																													
16	Issue CE No. 08 - Change in Number of Fixed IP Address for Broadband Connection for Site Accommodation	0 days	Tue 4/12/18	Tue 4/12/18	Calendar Day			100%	Tue 4/12/18	Tue 4/12/18	◆																																													
17	Issue CE No. 10 - Contractor Design of The Realignment	0 days	Thu 28/2/19	Thu 28/2/19	Calendar Day			100%	Thu 28/2/19	Thu 28/2/19	◆																																													
18	Issue CE No. 13 - Excavation of Inspection Pits for the Realignments	0 days	Wed 15/5/19	Wed 15/5/19	Calendar Day			100%	Wed 15/5/19	Wed 15/5/19	◆																																													
19	Issue CE No. 26 - Change in Cathodic Protection System for Mild Steel Pipes	0 days	Fri 16/8/19	Fri 16/8/19	Calendar Day		85	100%	Fri 16/8/19	Fri 16/8/19	◆																																													
20	Issue CE No. 35 - Feasibility Study on the Alternative Alignment by Trenchless Method in the Wan Po Road J/O Lohas Park Road	0 days	Tue 31/12/19	Tue 31/12/19	Calendar Day			100%	Tue 31/12/19	Tue 31/12/19	◆																																													
21	Issue CE No. 56 - Excavation of Inspection Pits for the Alternative Alignment (Batch No. 2)	0 days	Fri 22/5/20	Fri 22/5/20	Calendar Day			100%	Fri 22/5/20	Fri 22/5/20	◆																																													
22	Issue CE No. 64 - Tree Survey at Tsui Lam (Location A and Location B)	0 days	Tue 9/6/20	Tue 9/6/20	Calendar Day			100%	Tue 9/6/20	Tue 9/6/20	◆																																													
23	Issue CE No. 74 - Reinstatement of existing carriageway along Wan Po Road using PMSMA10	0 days	Thu 13/8/20	Thu 13/8/20	Calendar Day			100%	Thu 13/8/20	Thu 13/8/20	◆																																													
24	Issue CE No. 66 - Excavation of Inspection Pits for the Alternative Alignment (Batch No. 3)	0 days	Fri 21/8/20	Fri 21/8/20	Calendar Day			100%	Fri 21/8/20	Fri 21/8/20	◆																																													
25	Issue CE No. 72 - Temporary Reinstatement of Deteriorated Grasscrete Road by Bituminous Pavement along TKO South Waterfront Promenade	0 days	Mon 31/8/20	Mon 31/8/20	Calendar Day			100%	Mon 31/8/20	Mon 31/8/20	◆																																													
26	Issue CE No. 73 - Reinstatement of existing Geotextile in Area of Stage 1 Landfill between Chainage FC12+20 and Chainage FC13+26	0 days	Wed 9/9/20	Wed 9/9/20	Calendar Day			100%	Wed 9/9/20	Wed 9/9/20	◆																																													
27	Issue CE No. 81 - Additional Noise Monitoring for the Realignment Works	0 days	Tue 22/9/20	Tue 22/9/20	Calendar Day			100%	Tue 22/9/20	Tue 22/9/20	◆																																													
28	Issue CE No. 78 - Excavation of Inspection Pits for Additional Connection Point to The Existing Water Supply system	0 days	Wed 23/9/20	Wed 23/9/20	Calendar Day			100%	Wed 23/9/20	Wed 23/9/20	◆																																													
29	Issue CE No. 82 - Suspension of Site Works due to Coronavirus Disease	0 days	Wed 21/10/20	Wed 21/10/20	Calendar Day			100%	Wed 21/10/20	Wed 21/10/20	◆																																													
30	Issue CE No. 85 - Affected Trees across the Natural Stream Course at Tsui Lam (Location A)	0 days	Wed 28/10/20	Wed 28/10/20	Calendar Day			100%	Wed 28/10/20	Wed 28/10/20	◆																																													
31	Issue CE No. 90 - Temporary Relocation of Bicycle Parking spaces near HK Velodrome	0 days	Mon 23/11/20	Mon 23/11/20	Calendar Day			100%	Mon 23/11/20	Mon 23/11/20	◆																																													
32	Issue CE No. 83 - Inspection pits for the Realignment in Wan Po Road and Lohas Park Road	0 days	Sat 19/12/20	Sat 19/12/20	Calendar Day			100%	Sat 19/12/20	Sat 19/12/20	◆																																													
33	Issue CE No. CE - Site Clearance of Affected Trees and Plants for Mainlaying works near Po Hong Road and Ling Hong Road	0 days	Fri 18/12/20	Fri 18/12/20	Calendar Day			100%	Fri 18/12/20	Fri 18/12/20	◆																																													
34	Issue CE No. 99 - Excavation of Inspection pit near Mau Wu Tsai Village at Po Lam Road South	0 days	Wed 20/1/21	Wed 20/1/21	Calendar Day			100%	Wed 20/1/21	Wed 20/1/21	◆																																													
35	Issue CE No. 101 - Uncharted Irrigation Pipe in TKO South Promenade Waterfront's Cycle Track at CH.FC6+64	0 days	Fri 29/1/21	Fri 29/1/21	Calendar Day			100%	Fri 29/1/21	Fri 29/1/21	◆																																													
36	Issue CE No. 103 - Renewal of Excavation Permit	0 days	Wed 10/2/21	Wed 10/2/21	Calendar Day			100%	Wed 10/2/21	Wed 10/2/21	◆																																													
37	Issue CE No. 105 - Suspension of Works in Wan Po Road 1st Works Site due to Shortage of Backfilling Material Caused by COVID-19	0 days	Tue 23/2/21	Tue 23/2/21	Calendar Day			100%	Tue 23/2/21	Tue 23/2/21	◆																																													
38	Issue CE No. 104 - Works in Tsui Lam Section (Batch No.2) were Suspended due to Disruption to Supply of Construction Material Caused b COVID-19	0 days	Fri 26/2/21	Fri 26/2/21	Calendar Day			100%	Fri 26/2/21	Fri 26/2/21	◆																																													
39	Issue CE No. 106 - Works in Tsui Lam Section (Batch No.3) were Suspended due to Disruption to Supply of Construction Material Caused b COVID-19	0 days	Fri 26/2/21	Fri 26/2/21	Calendar Day			100%	Fri 26/2/21	Fri 26/2/21	◆																																													
40	Issue CE No. 108 - Works in Tsui Lam Section (Batch No.3) were Suspended due to Disruption to Supply of Construction Material Caused b COVID-19	0 days	Fri 26/2/21	Fri 26/2/21	Calendar Day			100%	Fri 26/2/21	Fri 26/2/21	◆																																													
41	Issue CE No. 107 - Affected Trees near Mau Wu Tsai Village between CH.HA0+00 and Ch. HA0+70	0 days	Mon 8/3/21	Mon 8/3/21	Calendar Day			100%	Mon 8/3/21	Mon 8/3/21	◆																																													
42	Issue CE No. 110 - Inaccessible to Works Area Ch.HA2+10 due to Deteriorated Concrete Access	0 days	Thu 8/4/21	Thu 8/4/21	Calendar Day			100%	Thu 8/4/21	Thu 8/4/21	◆																																													

Working Programme No. 15
Data Date : 24 May 2022

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

ID	Task Name	Duration	Start	Finish	Task Calendar	Predecessors	Successors	% Complete	Actual Start	Actual Finish	Gantt Chart																							
											2018	2019	2020	2021	2022	2023	2024	2025	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
632	Tree survey, TPRP Submission and Receiving TPRP approval	295 days	Tue 22/9/20	Mon 20/9/21	HK Working Day	631	661,633	100%	Tue 22/9/20	Mon 20/9/21	[Gantt bars for 2018-2025]																							
633	Mobilization and Tree Removal	23 days	Tue 21/9/21	Wed 20/10/21	HK Working Day	632	663,636	100%	Tue 21/9/21	Wed 20/10/21	[Gantt bars for 2018-2025]																							
634	Issue CE No. XXX - Change Trenchless (Pit U - Pit V) to Open Cut and Revised the Alignment	0 days	Thu 31/3/22	Thu 31/3/22	HK Working Day			0%	NA	NA	[Gantt bars for 2018-2025]																							
635	Open Cut, CH.HA0+80 - CH.HA3+17	141 days	Thu 19/11/20	Fri 14/5/21	HK Working Day		626	100%	Thu 19/11/20	Fri 14/5/21	[Gantt bars for 2018-2025]																							
636	Open Cut, CH.HA3+17 - CH.HA3+79	66 days	Tue 26/10/21	Thu 13/1/22	HK Working Day	633		30%	Tue 26/10/21	NA	[Gantt bars for 2018-2025]																							
637	Open Trench Pipe Laying at Po Lam Road South (Mau Wu Tsai Village)	382 days	Wed 12/5/21	Tue 23/8/22	HK Working Day			74%	Wed 12/5/21	NA	[Gantt bars for 2018-2025]																							
638	Open Cut, CH.HA3+79 - CH.HA4+68 with SACP	127 days	Wed 12/5/21	Tue 12/10/21	HK Working Day		639	100%	Wed 12/5/21	Tue 12/10/21	[Gantt bars for 2018-2025]																							
639	Open Cut, CH.HA4+68 - CH.HA5+21	60 days	Tue 14/6/22	Tue 23/8/22	HK Working Day	638,640		0%	NA	NA	[Gantt bars for 2018-2025]																							
640	Open Cut, CH.HA5+21 - CH.HA5+55 (Pit W)	60 days	Mon 28/3/22	Mon 13/6/22	HK Working Day		639	95%	Mon 28/3/22	NA	[Gantt bars for 2018-2025]																							
641	Trenchless Work at Po Lam Road South	259 days	Wed 14/4/21	Thu 24/2/22	HK Working Day			100%	Wed 14/4/21	Thu 24/2/22	[Gantt bars for 2018-2025]																							
642	Inspection Pit Excavation	108 days	Wed 14/4/21	Sat 21/8/21	HK Working Day			100%	Wed 14/4/21	Sat 21/8/21	[Gantt bars for 2018-2025]																							
643	Inspection Pit Excavation at Pit W	4 days	Wed 18/8/21	Sat 21/8/21	HK Working Day		646	100%	Wed 18/8/21	Sat 21/8/21	[Gantt bars for 2018-2025]																							
644	Inspection Pit Excavation at Pit X	3 days	Wed 14/4/21	Fri 16/4/21	HK Working Day		647	100%	Wed 14/4/21	Fri 16/4/21	[Gantt bars for 2018-2025]																							
645	Construction of Jacking / Receiving Pits	107 days	Sat 24/4/21	Tue 31/8/21	HK Working Day			100%	Sat 24/4/21	Tue 31/8/21	[Gantt bars for 2018-2025]																							
646	Receiving Pit W	8 days	Mon 23/8/21	Tue 31/8/21	HK Working Day	643		100%	Mon 23/8/21	Tue 31/8/21	[Gantt bars for 2018-2025]																							
647	Jacking Pit X	31 days	Sat 24/4/21	Tue 1/6/21	HK Working Day	644	649	100%	Sat 24/4/21	Tue 1/6/21	[Gantt bars for 2018-2025]																							
648	Hand Shield Pipe Jacking from Pit W to Pit X (~85m)	219 days	Wed 2/6/21	Thu 24/2/22	HK Working Day			100%	Wed 2/6/21	Thu 24/2/22	[Gantt bars for 2018-2025]																							
649	Establishment at Pit X	15 days	Wed 2/6/21	Sat 19/6/21	HK Working Day	647	650	100%	Wed 2/6/21	Sat 19/6/21	[Gantt bars for 2018-2025]																							
650	Form Entrance Opening at pit X	5 days	Thu 8/7/21	Tue 13/7/21	HK Working Day	649	651	100%	Thu 8/7/21	Tue 13/7/21	[Gantt bars for 2018-2025]																							
651	Mild Steel Sleeve Pipe in Mix of Soil (46m) (0.6m / day)	73 days	Wed 14/7/21	Fri 8/10/21	HK Working Day	650	652,653	100%	Wed 14/7/21	Fri 8/10/21	[Gantt bars for 2018-2025]																							
652	Rearrangement Walling and Form Exit Opening at Pit W	14 days	Mon 11/10/21	Wed 27/10/21	HK Working Day	651	654	100%	Mon 11/10/21	Wed 27/10/21	[Gantt bars for 2018-2025]																							
653	Remove Setup it Pit X	5 days	Sat 9/10/21	Fri 15/10/21	HK Working Day	651	654	100%	Sat 9/10/21	Fri 15/10/21	[Gantt bars for 2018-2025]																							
654	Setup for Pipe Laying inside Jacking Pit X	6 days	Thu 28/10/21	Wed 3/11/21	HK Working Day	653,652	655	100%	Thu 28/10/21	Wed 3/11/21	[Gantt bars for 2018-2025]																							
655	DN900 MS Pipe Laying inside Jacking Pipe (3 days per 4m)(Only Internal)	19 days	Thu 4/11/21	Thu 25/11/21	HK Working Day	654	656	100%	Thu 4/11/21	Thu 25/11/21	[Gantt bars for 2018-2025]																							
656	Formwork & Setup for Grouting the gap between pipe and Sleeve	2 days	Sat 12/2/22	Mon 14/2/22	HK Working Day	655	657	100%	Sat 12/2/22	Mon 14/2/22	[Gantt bars for 2018-2025]																							
657	Grouting Works (30m per day)	9 days	Tue 15/2/22	Thu 24/2/22	HK Working Day	656		100%	Tue 15/2/22	Thu 24/2/22	[Gantt bars for 2018-2025]																							
658	Open Trench Pipe Laying at Po Lam Road (West Bound)	465 days	Mon 20/7/20	Fri 11/2/22	HK Working Day		767,768	100%	Mon 20/7/20	Fri 11/2/22	[Gantt bars for 2018-2025]																							
659	Issue CE No. 68 - TIA for TTA at Po Lam Road	0 days	Mon 20/7/20	Mon 20/7/20	HK Working Day		660	100%	Mon 20/7/20	Mon 20/7/20	[Gantt bars for 2018-2025]																							
660	Traffic Survey and Revise TIA, revised TTA Drawings, Obtain RA	177 days	Mon 20/7/20	Sat 20/2/21	HK Working Day	659	665	100%	Mon 20/7/20	Sat 20/2/21	[Gantt bars for 2018-2025]																							
661	Mobilization and Tree Removal	29 days	Tue 21/9/21	Wed 27/10/21	HK Working Day	632	663,664,662	100%	Tue 21/9/21	Wed 27/10/21	[Gantt bars for 2018-2025]																							
662	Construction of DAV Chamber at Pit X	41 days	Tue 7/12/21	Wed 26/1/22	HK Working Day	661		100%	Tue 7/12/21	Wed 26/1/22	[Gantt bars for 2018-2025]																							
663	Open Cut, front Pit X, CH.HA6+00 - CH.HA6+54	86 days	Thu 28/10/21	Fri 11/2/22	HK Working Day	661,665,633		100%	Thu 28/10/21	Fri 11/2/22	[Gantt bars for 2018-2025]																							
664	Construction of DN900 Valve Chamber and By Pass Pipes	17 days	Tue 11/1/22	Sat 29/1/22	HK Working Day	661		100%	Tue 11/1/22	Sat 29/1/22	[Gantt bars for 2018-2025]																							
665	Open Cut, CH.HA6+54 to CH.HA7+24 (Portion SKR) with SACP	85 days	Mon 22/2/21	Mon 7/6/21	HK Working Day	660	666,663	100%	Mon 22/2/21	Mon 7/6/21	[Gantt bars for 2018-2025]																							
666	Open Cut, CH.HA7+24 - CH.HA7+61/CH.HB0+00 Excavation in Rock	189 days	Wed 16/6/21	Sat 29/1/22	HK Working Day	665		100%	Wed 16/6/21	Sat 29/1/22	[Gantt bars for 2018-2025]																							
667	Water Main Structure and Associated Pipe Support across the Natural Stream Course (Location A) (CH.HB0+00 ~ CH.HB0+ CE)	730 days	Tue 5/5/20	Tue 18/10/22	HK Working Day		768	93%	Tue 5/5/20	NA	[Gantt bars for 2018-2025]																							
668	Design Submission (CE No. 55) for Water Main Structure and Associated Pipe Support across the Natural Stream Course	37 days	Tue 5/5/20	Tue 16/6/20	HK Working Day		669	100%	Tue 5/5/20	Tue 16/6/20	[Gantt bars for 2018-2025]																							
669	WSD & GEO Review and Approve	121 days	Wed 17/6/20	Thu 15/10/20	Calendar Day	668	672	100%	Wed 17/6/20	Thu 15/10/20	[Gantt bars for 2018-2025]																							
670	Tendering Process, Tender Award for CE No. 51 (Location A Mini-pile Works)	113 days	Wed 26/8/20	Wed 16/12/20	Calendar Day			100%	Wed 26/8/20	Wed 16/12/20	[Gantt bars for 2018-2025]																							
671	Issue CE No. 55 - Design of the Water Mains Structure and Associated Pipe Support across the Natural Stream Course for Alternative Alignment in Tsui Lam	0 days	Tue 5/5/20	Tue 5/5/20	Calendar Day			100%	Tue 5/5/20	Tue 5/5/20	[Gantt bars for 2018-2025]																							
672	Tender and Subletting (Mini-Pile)	62 days	Fri 16/10/20	Wed 16/12/20	Calendar Day	669		100%	Fri 16/10/20	Wed 16/12/20	[Gantt bars for 2018-2025]																							
673	Issue CE No. 85 - Affected Trees across the Natural Stream Course at Tsui Lam (Location A)	0 days	Wed 28/10/20	Wed 28/10/20	Calendar Day			100%	Wed 28/10/20	Wed 28/10/20	[Gantt bars for 2018-2025]																							

Working Programme No. 15
Data Date : 24 May 2022

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

ID	Task Name	Duration	Start	Finish	Task Calendar	Predecessors	Successors	% Complete	Actual Start	Actual Finish	Gantt Chart																			
											2018	2019	2020	2021	2022	2023	2024	2025												
674	Tree survey, TPRP Submission and Receiving TPRP approval (HyD)	227 days	Mon 31/8/20	Tue 8/6/21	HK Working Day		676	100%	Mon 31/8/20	Tue 8/6/21	[Gantt bar from 31/8/20 to 8/6/21]																			
675	East Portion - Foundation Works (PC-C1, PC-T1 & PC-P1)	283 days	Wed 9/6/21	Tue 24/5/22	HK Working Day			99%	Wed 9/6/21	NA	[Gantt bar from 9/6/21 to 24/5/22]																			
676	Mobilization and Tree Removal	24 days	Wed 9/6/21	Thu 8/7/21	HK Working Day	674	677	100%	Wed 9/6/21	Thu 8/7/21	[Gantt bar from 9/6/21 to 8/7/21]																			
677	Erect Temporary Timber Platform for Piling Works	7 days	Fri 9/7/21	Fri 16/7/21	HK Working Day	676	678	100%	Fri 9/7/21	Fri 16/7/21	[Gantt bar from 9/7/21 to 16/7/21]																			
678	Pre-drilling works (PD6, PD7 & PD8) & confirmation of rock head and depth of mini-pile	25 days	Sat 17/7/21	Sat 14/8/21	HK Working Day	677	679,686	100%	Sat 17/7/21	Sat 14/8/21	[Gantt bar from 17/7/21 to 14/8/21]																			
679	Mobilization and Driving Dia. 323mm steel Casting (14 nos)	39 days	Mon 16/8/21	Thu 30/9/21	HK Working Day	678	680	100%	Mon 16/8/21	Thu 30/9/21	[Gantt bar from 16/8/21 to 30/9/21]																			
680	Cleaning, Insert T50 reinforcement and Grouting	18 days	Mon 11/10/21	Mon 1/11/21	HK Working Day	679	681,684	100%	Mon 11/10/21	Mon 1/11/21	[Gantt bar from 11/10/21 to 1/11/21]																			
681	Setup and Loading Test of Mini-Pile (T-1)	15 days	Tue 1/3/22	Thu 17/3/22	HK Working Day	680	683,682	100%	Tue 1/3/22	Thu 17/3/22	[Gantt bar from 1/3/22 to 17/3/22]																			
682	Setup and Loading Test of Mini-Pile (C1-2)	8 days	Fri 18/3/22	Sat 26/3/22	HK Working Day	681		100%	Fri 18/3/22	Sat 26/3/22	[Gantt bar from 18/3/22 to 26/3/22]																			
683	Construction Pile Caps (P1) with Pier 1	50 days	Fri 18/3/22	Sat 21/5/22	HK Working Day	681	684	100%	Fri 18/3/22	Sat 21/5/22	[Gantt bar from 18/3/22 to 21/5/22]																			
684	Remove Timber platform for Piling Works	2 days	Mon 23/5/22	Tue 24/5/22	HK Working Day	683,680	694	0%	Mon 23/5/22	NA	[Gantt bar from 23/5/22 to 24/5/22]																			
685	West Portion - Foundation Works (PC-P2, PC-P3 & PC-C2)	241 days	Tue 5/10/21	Fri 29/7/22	HK Working Day			98%	Tue 5/10/21	NA	[Gantt bar from 5/10/21 to 29/7/22]																			
686	Mobilization and Tree Removal	3 days	Tue 5/10/21	Thu 7/10/21	HK Working Day	678	687	100%	Tue 5/10/21	Thu 7/10/21	[Gantt bar from 5/10/21 to 7/10/21]																			
687	Erect Temporary Timber Platform for Piling Works	5 days	Thu 28/10/21	Tue 2/11/21	HK Working Day	686	688	100%	Thu 28/10/21	Tue 2/11/21	[Gantt bar from 28/10/21 to 2/11/21]																			
688	Pre-drilling works (P WPR, PSKR, PD3, PD4 & PD5) & confirmation of rock head and depth of mini-pile	16 days	Fri 26/11/21	Tue 14/12/21	HK Working Day	687,703,707	689	100%	Fri 26/11/21	Tue 14/12/21	[Gantt bar from 26/11/21 to 14/12/21]																			
689	Driving Dia. 323mm steel Casting (26 nos)	58 days	Wed 15/12/21	Sat 26/2/22	HK Working Day	688	690	100%	Wed 15/12/21	Sat 26/2/22	[Gantt bar from 15/12/21 to 26/2/22]																			
690	Cleaning, Insert T50 reinforcement and Grouting	50 days	Sat 26/2/22	Fri 29/4/22	HK Working Day	689	692,691	100%	Sat 26/2/22	Fri 29/4/22	[Gantt bar from 26/2/22 to 29/4/22]																			
691	Construction Pile Caps with Pier 2	36 days	Mon 21/3/22	Wed 27/7/22	HK Working Day	690	692	95%	Mon 21/3/22	NA	[Gantt bar from 21/3/22 to 27/7/22]																			
692	Remove Timber platform for Piling Works	2 days	Thu 28/7/22	Fri 29/7/22	HK Working Day	690,691	694	0%	NA	NA	[Gantt bar from 28/7/22 to 29/7/22]																			
693	Pipelaying on Mini-pile Foundation	66 days	Sat 30/7/22	Tue 18/10/22	HK Working Day			0%	NA	NA	[Gantt bar from 30/7/22 to 18/10/22]																			
694	Temporary Working Platform for Pipe Installation	6 days	Sat 30/7/22	Fri 5/8/22	HK Working Day	684,692	695	0%	NA	NA	[Gantt bar from 30/7/22 to 5/8/22]																			
695	Cut Temporary casting and Bend the T50 to designated position	12 days	Sat 6/8/22	Fri 19/8/22	HK Working Day	694	696	0%	NA	NA	[Gantt bar from 6/8/22 to 19/8/22]																			
696	Pipe Installation / Welding / Testing / Painting	24 days	Sat 20/8/22	Sat 17/9/22	HK Working Day	695	697,701	0%	NA	NA	[Gantt bar from 20/8/22 to 17/9/22]																			
697	Concrete Hunching	12 days	Mon 19/9/22	Mon 3/10/22	HK Working Day	696	698	0%	NA	NA	[Gantt bar from 19/9/22 to 3/10/22]																			
698	Apply top coating of aliphatic polyurethane on site	6 days	Wed 5/10/22	Tue 11/10/22	HK Working Day	697	699	0%	NA	NA	[Gantt bar from 5/10/22 to 11/10/22]																			
699	Remove Temporary Working Platform	6 days	Wed 12/10/22	Tue 18/10/22	HK Working Day	698	702	0%	NA	NA	[Gantt bar from 12/10/22 to 18/10/22]																			
700	Open Trench Pipe Laying at Po Lam Road (East Bound)	551 days	Thu 8/4/21	Tue 14/2/23	HK Working Day		768	60%	Thu 8/4/21	NA	[Gantt bar from 8/4/21 to 14/2/23]																			
701	Open Cut, CH.HC0+00 - CH.HC0+08; Connecting to CH.HB	60 days	Mon 19/9/22	Tue 29/11/22	HK Working Day	696,706	702	0%	NA	NA	[Gantt bar from 19/9/22 to 29/11/22]																			
702	Open Cut, CH.HC0+08 - CH.HC0+12	60 days	Wed 30/11/22	Tue 14/2/23	HK Working Day	699,701		0%	NA	NA	[Gantt bar from 30/11/22 to 14/2/23]																			
703	Open Cut, CH.HC0+12 - CH.HC0+97 with SACP	104 days	Wed 16/6/21	Tue 19/10/21	HK Working Day		704,688	100%	Wed 16/6/21	Tue 19/10/21	[Gantt bar from 16/6/21 to 19/10/21]																			
704	Open Cut, CH.HC0+97 - CH.HC1+56(Portion B4) with SACP	62 days	Wed 24/11/21	Thu 10/2/22	HK Working Day	703,707	705	99%	Wed 24/11/21	NA	[Gantt bar from 24/11/21 to 10/2/22]																			
705	Open Cut, CH.HC1+56 - CH.HC2+04	60 days	Fri 11/2/22	Tue 26/4/22	HK Working Day	704	706	0%	NA	NA	[Gantt bar from 11/2/22 to 26/4/22]																			
706	Open Cut, CH.HC2+04 - CH.HC2+70 with SACP	60 days	Wed 27/4/22	Sat 9/7/22	HK Working Day	705	701	0%	NA	NA	[Gantt bar from 27/4/22 to 9/7/22]																			
707	Open Cut, CH.HC2+70 - CH.HC3+22 with SACP	58 days	Tue 14/9/21	Tue 23/11/21	HK Working Day	708	704,688	100%	Tue 14/9/21	Tue 23/11/21	[Gantt bar from 14/9/21 to 23/11/21]																			
708	Open Cut, CH.HC3+22 - CH.HC3+70 /CH.HD0+00	131 days	Thu 8/4/21	Sat 11/9/21	HK Working Day		707	100%	Thu 8/4/21	Sat 11/9/21	[Gantt bar from 8/4/21 to 11/9/21]																			
709	Water Main Structure and Associated Pipe Support from Po Lam Road to Tsui Lam Road (Location B)(CH.HD0+00 ~ CH.H WPR+01)	771 days	Tue 16/6/20	Thu 19/1/23	HK Working Day		768	82%	Tue 16/6/20	NA	[Gantt bar from 16/6/20 to 19/1/23]																			
710	Issue CE No. 62 - Design of Pipe Support in Tsui Lam (Location B)	0 days	Tue 16/6/20	Tue 16/6/20	Calendar Day		711	100%	Tue 16/6/20	Tue 16/6/20	[Milestone diamond at 16/6/20]																			
711	Design Submission (CE No. 62) for Water Main Structure and Associated at Tsui Lam	356 days	Wed 17/6/20	Fri 27/8/21	HK Working Day	710	712	100%	Wed 17/6/20	Fri 27/8/21	[Gantt bar from 17/6/20 to 27/8/21]																			
712	WSD & GEO Approval	0 days	Tue 21/9/21	Tue 21/9/21	Calendar Day	711	716	100%	Tue 21/9/21	Tue 21/9/21	[Milestone diamond at 21/9/21]																			
713	TTA Drawing approval for Tsui Lam Road	0 days	Thu 30/9/21	Thu 30/9/21	HK Working Day		719	100%	Thu 30/9/21	Thu 30/9/21	[Milestone diamond at 30/9/21]																			
714	LCSD's Consent	0 days	Tue 5/10/21	Tue 5/10/21	HK Working Day		715FS+18 days	100%	Tue 5/10/21	Tue 5/10/21	[Milestone diamond at 5/10/21]																			
715	Approval of Excavation Permit for Tsui Lam Road	0 days	Mon 1/11/21	Mon 1/11/21	HK Working Day	714FS+18 days		100%	Mon 1/11/21	Mon 1/11/21	[Milestone diamond at 1/11/21]																			

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

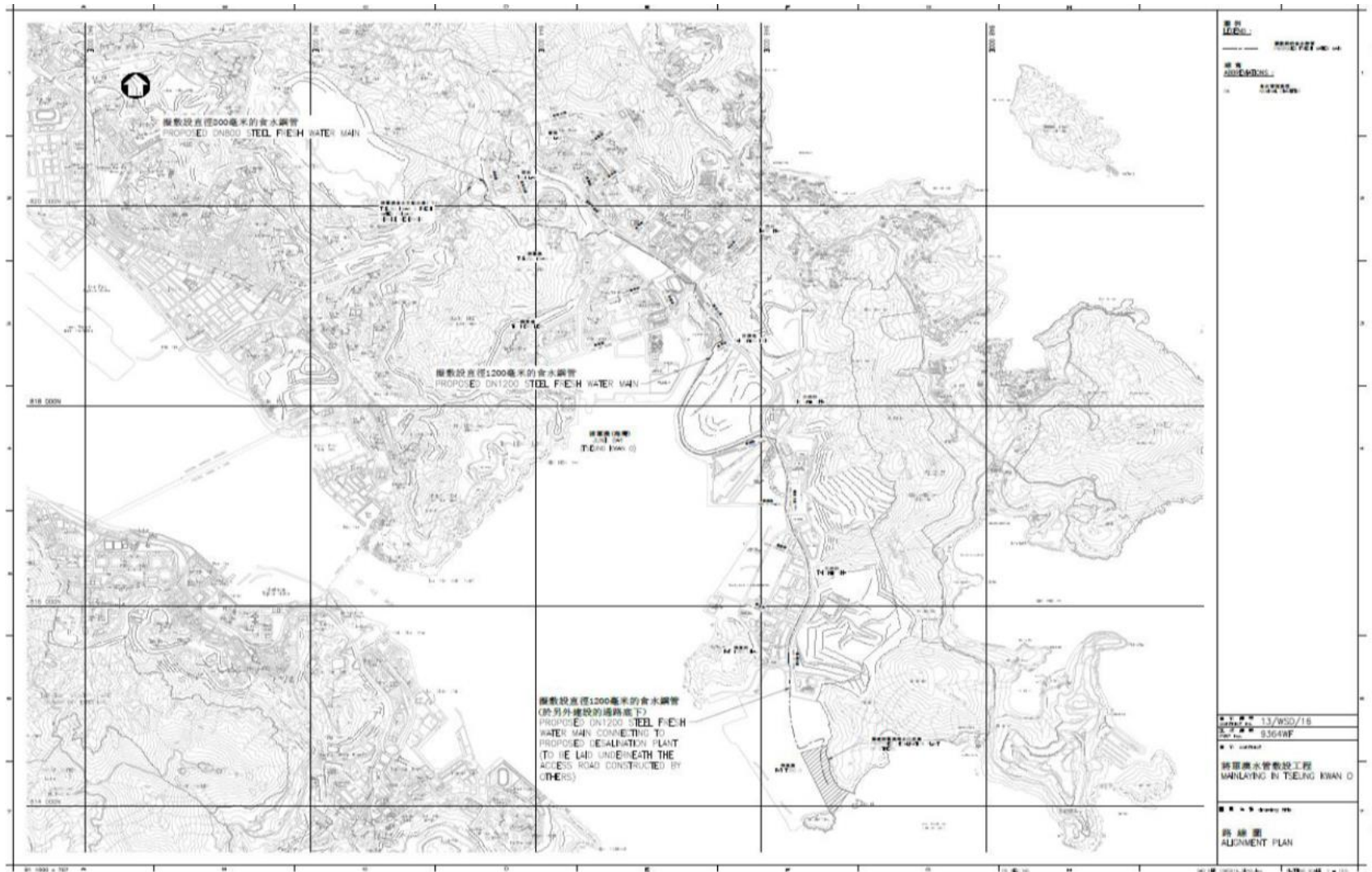
ID	Task Name	Duration	Start	Finish	Task Calendar	Predecessors	Successors	% Complete	Actual Start	Actual Finish	Gantt Chart																			
											2018	2019	2020	2021	2022	2023	2024	2025	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
758	Construction of flowmeter kiosks and GI cable ducts for Combined EMF and MBV Chamber at CH.HF1+30	90 days	Tue 7/11/17	Mon 26/2/18	HK Working Day			0%	NA	NA																				
759	DN800 - CH.ADN1200 MS Pipe Static Pressure Test, Pipeline Cleaning, CCTV Inspection, Sterilization and Water Sampling	1232 days	Wed 24/3/21	Tue 6/8/24	Calendar Day			13%	Wed 24/3/21	NA	[Gantt bar from Q1 2021 to Q4 2024]																			
760	Static Pressure Test	1112 days	Wed 24/3/21	Mon 8/4/24	Calendar Day			18%	Wed 24/3/21	NA	[Gantt bar from Q1 2021 to Q4 2024]																			
761	DN1200 MS Pipe - Static Pressure Test From DN900 Valve Chamber at CH.CA4+24 to CH.CT.2+65 (Approx. 0.7km)	49 days	Wed 24/3/21	Tue 11/5/21	Calendar Day	105	772	100%	Wed 24/3/21	Tue 11/5/21	[Gantt bar from Q1 2021 to Q1 2021]																			
762	DN1200 MS Pipe - Static Pressure Test From DN900 Valve Chamber at CH.CA4+24 to DN900 Valve Chamber at Wan Po Road (CH.A12+50) (Approx. 1.7km)	51 days	Fri 29/9/23	Sat 18/11/23	Calendar Day	121,167,184,213,224	773	0%	NA	NA	[Gantt bar from Q3 2023 to Q4 2023]																			
763	DN1200 MS Pipe - Static Pressure Test From DN900 Valve Chamber at Wan Po Road (CH.A12+50) to DN900 Valve Chamber at TKO Landfill Stage I Area A (CH.FB1+66) (Approx. 1.4km)	42 days	Tue 27/2/24	Mon 8/4/24	Calendar Day	224,251,306	774	0%	NA	NA	[Gantt bar from Q1 2024 to Q2 2024]																			
764	DN1200 MS Pipe - Static Pressure Test From DN900 Valve Chamber at TKO Landfill Stage I Area A (CH.FB1+66) to DN900 Valve Chamber at CH.FD3+43 (approx. 2.1km)	63 days	Tue 12/9/23	Mon 13/11/23	Calendar Day	372,434	775	0%	NA	NA	[Gantt bar from Q3 2023 to Q4 2023]																			
765	DN1200 MS Pipe - Static Pressure Test From DN900 Valve Chamber at CH.FD 3+43 to DN900 Valve Chamber at Mau Wu Tsai (CH.HA0+44) (approx. 1.4km)	42 days	Tue 12/9/23	Mon 23/10/23	Calendar Day	436,479,517,594,434	776	0%	NA	NA	[Gantt bar from Q3 2023 to Q4 2023]																			
766	DN1200 MS Pipe - Static Pressure Test From Pit Y (CH>GSKR.20 to CH.HA3+70)	11 days	Tue 19/4/22	Fri 29/4/22	Calendar Day			100%	Tue 19/4/22	Fri 29/4/22	[Gantt bar from Q1 2021 to Q1 2021]																			
767	DN1200 MS Pipe - Static Pressure Test From DN900 Valve Chamber at Mau Wu Tsai (CH.HA0+44) to DN900 Valve at Mau Wu Tsai (CH.HA6+45) (approx. 0.7km)	30 days	Fri 1/4/22	Sat 30/4/22	Calendar Day	628,623,658	777	0%	NA	NA	[Gantt bar from Q1 2021 to Q1 2021]																			
768	DN1200 MS Pipe - Static Pressure Test From DN900 Valve at Mau Wu Tsai (CH.HA6+45) to DN800 EMF & BV Chamber at TKO F.W.S.R.(CH.HE1+90) & (CH.HF1+30) (Approx. 1.1km)	33 days	Tue 6/6/23	Sat 8/7/23	Calendar Day	658,667,700,709,734	778	0%	NA	NA	[Gantt bar from Q2 2023 to Q3 2023]																			
769	DN800 MS Pipe - Static Pressure Test From DN800 EMF & BV Chamber at TKO F.W.S.R.(CH.HE1+90) to CH.HE2+11 (approx. 20m)	6 days	Tue 26/7/22	Sun 31/7/22	Calendar Day	742	779	0%	NA	NA	[Gantt bar from Q2 2022 to Q2 2022]																			
770	DN800 MS Pipe - Static Pressure Test From DN800 EMF & BV Chamber at TKO F.W.S.R.(CH.HF1+30) to CH.HF3+10 (Approx. 80m)	6 days	Wed 25/5/22	Mon 30/5/22	Calendar Day	750	780	0%	NA	NA	[Gantt bar from Q2 2022 to Q2 2022]																			
771	Pipeline Cleaning and CCTV Inspection	1153 days	Wed 12/5/21	Sun 7/7/24	Calendar Day			10%	Wed 12/5/21	NA	[Gantt bar from Q1 2021 to Q4 2024]																			
772	DN1200 MS Pipe - Pipeline Cleaning and CCTV Inspection From DN900 Valve Chamber at CH.CA4+24 to CH.CT.2+65	60 days	Wed 12/5/21	Sat 10/7/21	Calendar Day	761	782	100%	Wed 12/5/21	Sat 10/7/21	[Gantt bar from Q1 2021 to Q1 2021]																			
773	DN1200 MS Pipe - Pipeline Cleaning and CCTV Inspection From DN900 Valve Chamber at CH.CA4+24 to DN900 Valve Chamber at Wan Po Road (CH.A12+50)	90 days	Sun 19/11/23	Fri 16/2/24	Calendar Day	762	782	0%	NA	NA	[Gantt bar from Q3 2023 to Q4 2023]																			
774	DN1200 MS Pipe - Pipeline Cleaning and CCTV Inspection From DN900 Valve Chamber at Wan Po Road (CH.A12+50) to DN900 Valve Chamber at TKO Landfill Stage I Area A	90 days	Tue 9/4/24	Sun 7/7/24	Calendar Day	763	782	0%	NA	NA	[Gantt bar from Q1 2024 to Q2 2024]																			
775	DN1200 MS Pipe - Pipeline Cleaning and CCTV Inspection From DN900 Valve Chamber at TKO Landfill Stage I Area A (CH.FB1+66) to DN900 Valve Chamber at CH.FD3+43	90 days	Tue 14/11/23	Sun 11/2/24	Calendar Day	764	782	0%	NA	NA	[Gantt bar from Q3 2023 to Q4 2023]																			
776	DN1200 MS Pipe - Pipeline Cleaning and CCTV From DN900 Valve Chamber at CH.FD 3+43 to DN900 Valve Chamber at Mau Wu Tsai (CH.HA0+44)	90 days	Tue 24/10/23	Sun 21/1/24	Calendar Day	765	782	0%	NA	NA	[Gantt bar from Q3 2023 to Q4 2023]																			
777	DN1200 MS Pipe - Pipeline Cleaning and CCTV Inspection From From DN900 Valve Chamber at Mau Wu Tsai (CH.HA0+44) to DN900 Valve at Mau Wu Tsai (CH.HA6+45)	60 days	Sun 1/5/22	Wed 29/6/22	Calendar Day	767	782	0%	NA	NA	[Gantt bar from Q1 2022 to Q2 2022]																			
778	DN1200 MS Pipe - Pipeline Cleaning and CCTV Inspection From DN900 Valve at Mau Wu Tsai (CH.HA6+45) to DN800 EMF & BV Chamber at TKO F.W.S.R.(CH.HE1+90) & DN800 MS Pipe - Pipeline Cleaning and CCTV Inspection From DN800 EMF & BV Chamber at TKO F.W.S.R.(CH.HE1+90) to CH.HE2+11	60 days	Sun 9/7/23	Wed 6/9/23	Calendar Day	768	782	0%	NA	NA	[Gantt bar from Q2 2023 to Q3 2023]																			
779	DN800 MS Pipe - Pipeline Cleaning and CCTV Inspection From DN800 EMF & BV Chamber at TKO F.W.S.R.(CH.HE1+90) to CH.HE2+11	18 days	Mon 1/8/22	Thu 18/8/22	Calendar Day	769	782	0%	NA	NA	[Gantt bar from Q1 2022 to Q1 2022]																			
780	DN800 MS Pipe - Pipeline Cleaning and CCTV Inspection From DN800 EMF & BV Chamber at TKO F.W.S.R.(CH.HF1+30) to CH.HF3+10	18 days	Tue 31/5/22	Fri 17/6/22	Calendar Day	770	782	0%	NA	NA	[Gantt bar from Q2 2022 to Q2 2022]																			
781	Sterilization and Water Sampling	30 days	Mon 8/7/24	Tue 6/8/24	Calendar Day			0%	NA	NA	[Gantt bar from Q1 2024 to Q2 2024]																			
782	DN1200 MS Pipe - Portion I & Portion H (Total Water = 9700 cu.m)	30 days	Mon 8/7/24	Tue 6/8/24	Calendar Day	772,773,774,775,777,778,778		0%	NA	NA	[Gantt bar from Q1 2024 to Q2 2024]																			
783	NS250 HDPE Pipe Static Pressure, Pipeline Cleaning, CCTV Inspection, Sterilization and Water Sampling	60 days	Fri 23/12/22	Mon 20/2/23	Calendar Day			0%	NA	NA	[Gantt bar from Q4 2022 to Q1 2023]																			
784	NS250 HDPE Pipe - Static Pressure Test - Portion H (Area 137)	30 days	Fri 23/12/22	Sat 21/1/23	Calendar Day	121	785	0%	NA	NA	[Gantt bar from Q4 2022 to Q1 2023]																			
785	NS250 HDPE Pipe - Pipeline Cleaning and CCTV Inspection, Sterilization and Water Sampling - Portion H (Area 137)	30 days	Sun 22/1/23	Mon 20/2/23	Calendar Day	784	788	0%	NA	NA	[Gantt bar from Q1 2023 to Q1 2023]																			
786	Handover Portion I and Portion H to WSD Region	563 days	Tue 21/2/23	Thu 5/9/24	Calendar Day			0%	NA	NA	[Gantt bar from Q1 2023 to Q4 2024]																			
787	DN1200 MS Pipe - Portion I & Portion H (Area 137)	30 days	Wed 7/8/24	Thu 5/9/24	Calendar Day	782		0%	NA	NA	[Gantt bar from Q1 2024 to Q2 2024]																			
788	NS250 HDPE Pipe - Portion H (Area 137)	7 days	Tue 21/2/23	Mon 27/2/23	Calendar Day	785	164	0%	NA	NA	[Gantt bar from Q1 2023 to Q1 2023]																			
789	Water Supply to Tseung Kwan O Desalination Plant at Fill Bank of Tseung Kwan O Area 137 (Portion J)	445 days	Tue 7/11/17	Sat 11/5/19	HK Working Day			99%	Tue 7/11/17	NA	[Gantt bar from Q4 2017 to Q4 2017]																			
790	Issue of CE No. 02	0 days	Fri 16/11/18	Fri 16/11/18	HK Working Day		791	100%	Fri 16/11/18	Fri 16/11/18	[Gantt bar from Q4 2017 to Q4 2017]																			
791	Procurement of Major Material	48 days	Sat 17/11/18	Thu 3/1/19	Calendar Day	790	792	100%	Sat 17/11/18	Thu 3/1/19	[Gantt bar from Q4 2017 to Q1 2018]																			
792	Installation of NS250 HDPE Pipe from A to B in accordance with the Drawing No. 13/WSD/16/SK13 to SK15 and W20203/4A	89 days	Fri 4/1/19	Thu 25/4/19	HK Working Day	791	793	100%	Fri 4/1/19	Thu 25/4/19	[Gantt bar from Q1 2018 to Q1 2018]																			
793	Sterilization and Flushing NS250 HDPE Pipe (From T0+00 to T23+64)	4 days	Wed 24/4/19	Sun 28/4/19	HK Working Day	792	794	100%	Wed 24/4/19	Sun 28/4/19	[Gantt bar from Q1 2018 to Q1 2018]																			
794	Take Water Sampling	1 day	Mon 29/4/19	Mon 29/4/19	HK Working Day	793	795	100%	Mon 29/4/19	Mon 29/4/19	[Gantt bar from Q1 2018 to Q1 2018]																			
795	Backfill at T23+64 after completion of Water Sampling Test	1 day	Sat 11/5/19	Sat 11/5/19	HK Working Day	794	796FF	100%	Sat 11/5/19	Sat 11/5/19	[Gantt bar from Q1 2018 to Q1 2018]																			
796	Handover Portion J to WSD Region	0 days	Sat 11/5/19	Sat 11/5/19	HK Working Day	795FF		100%	Sat 11/5/19	Sat 11/5/19	[Gantt bar from Q1 2018 to Q1 2018]																			
797		1 day	Tue 7/11/17	Tue 7/11/17	None			0%	NA	NA	[Gantt bar from Q4 2017 to Q4 2017]																			

Working Programme No. 15
Data Date : 24 May 2022

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

Appendix B

Overview of Mainlaying in Tseung Kwan O



Overview of Mainlaying in Tseung Kwan O

Appendix C

Summary of Implementation Status of Environmental Mitigation Measures (EMIS)

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation status	Relevant Legislation & Guidelines
				D	C	O		
Air Quality								
S4.8.1	Impervious dust screen or sheeting will be provided to enclose scaffolding from the ground floor level of building for construction of superstructure of the new buildings.	Land site/ During Construction	Contractor(s)		✓		N/A	Air Pollution Control (Construction Dust)
S4.8.1	Impervious sheet will be provided for skip hoist for material transport.	Land site/ During Construction, particularly dry season	Contractor(s)		✓		N/A	-
S4.8.1	The area where dusty work takes place should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after dusty activities as far as practicable.	Land site/ During Construction	Contractor(s)		✓		Implemented after observation	-
S4.8.1	All dusty materials should be sprayed with water or a dust suppression chemical immediately prior to any loading, unloading or transfer operation.	Land site/ During Construction	Contractor(s)		✓		Implemented	-
S4.8.1	Dropping heights for excavated materials should be controlled to a practical height to minimize the fugitive dust arising from unloading.	Land site/ During Construction	Contractor(s)		✓		Implemented	-
S4.8.1	During transportation by truck, materials should not be loaded to a level higher than the side and tail boards, and should be dampened or covered before transport.	Land site/ During Construction	Contractor(s)		✓		Implemented	-
S4.8.1	Wheel washing device should be provided at the exits of the work sites. Immediately before leaving a construction site, every vehicle shall be washed to remove any dusty material from its body and wheels as far as practicable.	Land site/ During Construction	Contractor(s)		✓		Implemented	-
S4.8.1	Road sections between vehicle-wash areas and vehicular entrance will be paved.	Land site/ During Construction	Contractor(s)		✓		N/A	-
S4.8.1	Hoarding of not less than 2.4m high from ground level will be provided along the length of the Project Site boundary.	Land site/ During construction	Contractor(s)	✓	✓		Implemented	-
S4.8.1	Haul roads will be kept clear of dusty materials and will be sprayed with water so as to maintain the entire road surface wet at all times.	Land site/ During construction	Contractor(s)		✓		Implemented	-

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation status	Relevant Legislation & Guidelines
				D	C	O		
S4.8.1	Temporary stockpiles of dusty materials will be either covered entirely by impervious sheets or sprayed with water to maintain the entire surface wet all the time.	Land site/ During construction	Contractor(s)		✓		Implemented	-
S4.8.1	Stockpiles of more than 20 bags of cement, dry pulverised fuel ash and dusty construction materials will be covered entirely by impervious sheeting sheltered on top and 3-sides.	Land site/ During construction	Contractor(s)		✓		Implemented	-
S4.8.1	All exposed areas will be kept wet always to minimize dust emission.	Land site/ During construction	Contractor(s)		✓		Implemented	-
S4.8.1	Ultra-low-sulphur diesel (ULSD) will be used for all construction plant on-site, as defined as diesel fuel containing not more than 0.005% sulphur by weight) as stipulated in Environment, Transport and Works Bureau Technical Circular (ETWB-TC(W)) No 19/2005 on Environmental Management on Construction Sites.	Land site/ During construction/ During Operation	Contractor(s)		✓	✓	Implemented	Environment, Transport and Works Bureau Technical Circular (ETWB-TC(W)) No 19/2005 on Environmental Management on Construction Sites
S4.8.1	The engine of the construction equipment during idling will be switched off.	Land site/ During construction	Contractor(s)		✓		Implemented	-
S4.8.1	Concrete batching plant will be required on site. control measures recommended in the Guidance Note on a Best Practicable Means for Cement Works (Concrete Batching Plant) (BPM 3/2 (93)) will be implemented. The control measures recommended in the Guidance Note on a Best Practicable Means for Cement Works (Concrete Batching Plant) (BPM 3/2 (93)) will be implemented.	Land site/ During construction	Contractor(s)		✓		N/A	Guidance Note on a Best
S4.8.1	Regular maintenance of construction equipment deployed on-site will be conducted to prevent black smoke emission.	Land site/ During construction	Contractor(s)		✓		Implemented	-

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation status	Relevant Legislation & Guidelines
				D	C	O		
S4.10	To ensure proper implementation of the recommended dust mitigation measures and good construction site practices during the construction phase, environmental site audits on weekly basis is recommended throughout the construction period.	Land site/ During construction	Contractor(s)/ Environmental Team (ET) & Independent Environmental Checker (IEC)		✓		Implemented	-

Note: D – Design stage C – Construction O – Operation

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation status	Relevant Legislation & Guidelines
				D	C	O		
Noise								
S5.7	Only well-maintained plant will be operated on-site, and plant will be serviced regularly during the construction phase.	All area/ During construction	Contractor(s)		✓		Implemented	A Practical Guide for the Reduction of Noise from Construction Works,
S5.7	Silencers or mufflers on construction equipment will be utilised and will be properly maintained during the construction phase.	Noise control/ During construction	Contractor(s)		✓		N/A	
S5.7	Mobile plant, if any, will be sited as far away from NSRs as possible.	Noise control/ During construction	Contractor(s)		✓		Implemented	
S5.7	Machines and plant (such as trucks) that may be in intermittent use will be shut down between work periods or will be throttled down to a minimum.	Noise control/ During construction	Contractor(s)		✓		Implemented	
S5.7	Plants known to emit noise strongly in one direction will, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.	Noise control/ During construction	Contractor(s)		✓		Implemented	
S5.7	Material stockpiles and other structures will be effectively utilised, wherever practicable, in screening noise from on-site construction activities.	Noise control/ During construction	Contractor(s)		✓		N/A	
S5.7	Use of Quite Powered Mechanical Equipment (QPME).	Noise control/ During construction	Contractor(s)		✓		Implemented	
S5.7	Movable noise barriers of 3m in height 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. The length of the barrier should be at least five times greater than its height. The noise barrier material should have a superficial surface density of at least 7 kg m ⁻² and have no openings or gaps.	Noise control/ During construction	Contractor(s)		✓		N/A	
S5.7	The noise insulating sheet should be deployed such that there would be no opening or gaps on the joints.	Noise control/ During construction	Contractor(s)		✓		N/A	
S5.7	Construction activities (e.g., excavation/shoring, reinstatement (asphalt), and pipe jacking) will be planned and carried out in sequence, such that items of PME proposed for these activities will not be operated simultaneously.	Noise control/ During construction	Contractor(s)		✓		Implemented	

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation status	Relevant Legislation & Guidelines
				D	C	O		
S5.7	PMEs will not be used at the works areas near educational institutions with residual impact (i.e. the "influence area" within a radius of 40m) during school hours in order to reduce impact to the educational institutions.	Noise control / During construction	Contractor(s)		✓		Implemented	-
S5.7	Noise enclosures or acoustic sheds would be used to cover stationary PME such as generators. Portable/Movable noise enclosure made of material with superficial surface density of at least 7 kg m ⁻² may be used for screening the noise from operation of the saw/groover, concrete.	Noise control/ Pre-construction/ During construction	Contractor(s)	✓	✓		N/A	-
S5.9	Sawcutting pavement, breaking up of pavement, excavation /shoring, pipe laying, backfilling, reinstatement (concrete) and pipe jacking shall be scheduled outside the examination period.	Noise control/ Pre-construction/ During construction	Contractor(s)	✓	✓		Implemented	-
S5.9	In view the duration of noise exceedance at Creative Secondary School, PLK Laws Foundation College, TKO Kei Tak Primary School and School of Continuing and Professional Studies-CUHK is limited to 8 weeks, the construction work in the influence areas near the four schools shall be scheduled during long school holidays (e.g. summer holiday, Easter holiday or Christmas holiday, etc.) as far as practicable. Scheduling the construction work for the four schools.	Noise control/ Pre-construction/ During construction	Contractor(s)	✓	✓		Implemented	-
S5.10	A noise monitoring programme shall be implemented for the construction phase.	Designated monitoring stations as defined in EM&A Manual/ During construction phase	ET		✓		Implemented	-
S5.10	The effectiveness of on-site control measures could also be evaluated through the regular site audits.	All facilities/ During construction	Contractor(s)/ ET & IEC		✓		Implemented	-

Note: D – Design stage C – Construction O – Operation

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation status	Relevant Legislation & Guidelines
				D	C	O		
Water Quality								
S6.9	Silt removal facilities such as silt traps or sedimentation facilities will be provided to remove silt particles from runoff to meet the requirements of the TM standard under the WPCO. The design of silt removal facilities will be based on the guidelines provided in ProPECC PN 1/94. All drainage facilities and erosion and sediment control structures will be inspected on a regular basis and maintained to confirm proper and efficient operation at all times and particularly during rainstorms. Deposited silt and grit will be removed regularly.	Land site & drainage/ During construction	Contractor(s)		✓		Implemented after observation	ProPECC PN 1/94 TM Standard under the WPCO
S6.9	Earthworks to form the final surfaces will be followed up with surface protection and drainage works to prevent erosion caused by rainstorms.	Land site & drainage/ During construction	Contractor(s)		✓		Implemented	-
S6.9	Appropriate surface drainage will be designed and provided where necessary.	Land site & drainage/ During construction	Contractor(s)		✓		Implemented	-
S6.9	The precautions to be taken at any time of year when rainstorms are likely together with the actions to be taken when a rainstorm is imminent or forecasted and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94.	Land site & drainage/ During construction	Contractor(s)		✓		Implemented	ProPECC PN 1/94
S6.9	Oil interceptors will be provided in the drainage system where necessary and regularly emptied to prevent the release of oil and grease into the storm water drainage system after accidental spillages.	Land site & drainage/ During construction	Contractor(s)		✓		N/A	-
S6.9	Temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge, if any, will be adequately designed for the controlled release of storm flows.	Land site & drainage/ During construction	Contractor(s)		✓		N/A	-
S6.9	The temporary diverted drainage, if any, will be reinstated to the original condition when the construction work has finished or when the temporary diversion is no longer required.	Land site & drainage/ During construction	Contractor(s)		✓		N/A	-

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation status	Relevant Legislation & Guidelines
				D	C	O		
S6.9	Appropriate numbers of portable toilets shall be provided by a licensed contractor to serve the construction workers over the construction site to prevent direct disposal of sewage into the water environment.	Land site & drainage/ During construction	Contractor(s)		✓		Implemented	-
S6.9 and S6.12	The sterilization water should be dechlorinated with total residual chlorine (TRC) level below 1 mg/L before discharge to public sewer. In situ testing of TRC should also be conducted for the discharge of chlorinated water for pipeline disinfection to ensure sufficient dechlorination before discharge to public sewer.	Sterilization of water mains prior to commissioning	Contractor(s)		✓	✓	N/A	Technical Memorandum for Effluents Discharged into Drainage and Sewerage Systems Inland and Coastal Waters
S6.9	The cleaning and flushing water should also be treated and desilted to the relevant discharge requirement stipulated in TM-DSS before discharging.	Sterilization of water mains prior to commissioning	Contractor(s)		✓	✓	N/A	
S6.9	Site drainage should be well maintained, and good construction practices should be observed to ensure that oil, fuels, solvents and other chemicals are managed, stored and handled properly and do not enter the nearby water streams.	Land site & drainage/ During construction/ During operation	Contractor(s)		✓	✓	Implemented after observation	-
S6.12	Regular site inspections will be carried out in order to confirm that regulatory requirements are being met and that contractors are implementing the standard site practice and mitigation measures as proposed to reduce potential impacts to water quality.	During construction	Contractor(s)/ ET & IEC		✓		Implemented after observation	-

Note: D – Design stage C – Construction O – Operation

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation Status	Relevant Legislation & Guidelines
				D	C	O		
Waste Management								
S8.5	Nomination of approved personnel to be responsible for standard site practices, arrangements for collection and effective disposal to an appropriate facility of all wastes generated at the site.	Contract mobilization/ During construction	Contractor(s)		✓		Implemented	-
S8.5	Training of site personnel in proper waste management and chemical handling procedures. Training will be provided to workers on the concepts of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycling at the beginning of the construction works.	Contract mobilization/ During construction	Contractor(s)		✓		Implemented	-
S8.5	Provision of sufficient waste disposal points and regular collection for disposal.	All area/ During construction/ During operation	Contractor(s)		✓	✓	Implemented	DEVB TC(W) No. 8/2010, Enhanced Specification for Site Cleanliness and Tidiness.
S8.5	Appropriate measures to reduce windblown litter and dust transportation of waste by either covering trucks or by transporting wastes in enclosed containers.	All area/ During construction	Contractor(s)		✓		Implemented	
S8.5	A waste management plan (WMP) as stated in the "ETWB TC(W) No. 19/2005, Environmental Management on Construction Sites" for the amount of waste generated, recycled and disposed of (including the disposal sites) will be established and implemented during the construction phase as part of the Environmental Management Plan (EMP). The Contractor will be required to prepare the EMP and submits it to the Architect/ Engineer under the Contract for approval prior to implementation.	All area/ During construction	Contractor(s)		✓		Implemented	ETWB TC(W) No. 19/2005, Environmental Management on Construction Sites
S8.5	Separation of chemical wastes for special handling and appropriate treatment at the Chemical Waste Treatment Centre at Tsing Yi.	All area/ During construction	Contractor(s)		✓		N/A.	Chapters 2 & 3 Code of Practice on the Packaging, Labelling & Storage of Chemical Wastes published under the Waste Disposal Ordinance (Cap 354), Section 35
S8.5	Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors.	Land site/ During construction	Contractor(s)		✓		Implemented	Waste Disposal Ordinance (Cap 354)

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation Status	Relevant Legislation & Guidelines
				D	C	O		
S8.5	A recording system for the amount of wastes generated/ recycled and disposal sites. The trip-ticket system will be included as one of the contractual requirements and implemented by the contractor(s).	Land site/ During construction	Contractor(s)		✓		Implemented	DEVB TC(W) No. 6/2010, Trip Ticket System for Disposal of Construction & Demolition Materials
S8.5	Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of material and their proper disposal.	Land site/ During construction/ During operation	Contractor(s)		✓		Implemented	WBTC 32/92, The Use of Tropical Hard Wood on Construction Site
S8.5	Encourage collection of aluminium cans and wastepaper by individual collectors during construction with separate labelled bins provided to segregate these wastes from other general refuse by the workforce.	Land site/ During construction	Contractor(s)		✓		Implemented	ETWB TCW No. 33/2002, Management of Construction and Demolition Material Including Rock
S8.5	Any unused chemicals and those with remaining functional capacity will be recycled as far as possible.	Land site/ During construction	Contractor(s)		✓		N/A	-
S8.5	Use of reusable non-timber formwork to reduce the amount of C&D materials.	All areas/ During construction	Contractor(s)		✓		N/A	WBTC 32/92, The Use of Tropical Hard Wood on Construction Site
S8.5	Prior to disposal of construction waste, wood, steel and other metals will be separated to the extent practical, for re-use and/or recycling to reduce the quantity of waste to be disposed of to landfill.	All areas/ During construction	Contractor(s)		✓		Implemented	DEVB TC(W) No. 6/2010, Trip Ticket System for Disposal of Construction & Demolition Materials
S8.5	Proper storage and site practices to reduce the potential for damage or contamination of construction materials.	All areas/ During construction	Contractor(s)		✓		Implemented after observation	-
S8.5	Plan and stock construction materials carefully to reduce amount of waste generated and avoid unnecessary generation of waste.	All areas/ During construction	Contractor(s)		✓		Implemented	-
S8.5	The management of dredged/ excavated sediment management requirement from <i>ETWB TC(W) No. 34/2002</i> will be incorporated in the Specification of the Contract Documents.	Marine works/ During construction	WSD/ Contractor(s)		✓		Implemented	ETWB TC(W) No. 34/2002 and Dumping at Sea Ordinance (DASO)
S8.5	The contractor will open a billing account with EPD in accordance with the Waste Disposal (Charges for Disposal of Construction Waste) Regulation for the payment of disposal charges.	Contract mobilisation/ During construction	Contractor(s)		✓		Implemented	Cap 354N Waste Disposal (Charges for Disposal of Construction Waste) Regulation

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation Status	Relevant Legislation & Guidelines
				D	C	O		
S8.5	A trip-ticket system will be established in accordance with DEVB TC(W) No. 6/2010 to monitor the reuse of surplus excavated materials off-site and disposal of construction waste and general refuse at transfer facilities/ landfills, and to control fly-tipping.	Contract mobilisation/ During construction	Contractor(s)		✓		Implemented	DEVB TC(W) No. 6/2010, Trip Ticket System for Disposal of Construction & Demolition Materials
S8.5	The project proponent will also conduct regular inspection of the waste management measures implemented on site as described in the Waste Management Plan.	All area/ During construction	Contractor(s)/ ET & IEC		✓		Implemented	ETWB TC(W) No. 19/2005, Environmental Management on Construction Sites
S8.5	A recording system (similar to summary table as shown in Annex 5 and Annex 6 of Appendix G of ETWB TC(W) No. 19/2005) for the amount of waste generated, recycled and disposed of (including the disposal sites) will be established during the construction phase.	All area/ During construction	Contractor(s)		✓		Implemented	Annex 5 and Annex 6 of Appendix G of ETWB TC(W) No. 19/2005
S8.5	Inert C&D materials (public fill) will be reused within the Project as far as practicable.	All area/ During construction	Contractor(s)		✓		Implemented	-
S8.5	Public fill and construction waste shall be segregated and stored in different containers or skips to facilitate reuse or recycling of materials and their proper disposal.	All area/ During construction	Contractor(s)		✓		Implemented	-
S8.5	Specific areas of the work site will be designated for such segregation and storage if immediate use is not practicable.	All area/ During construction	Contractor(s)		✓		Implemented	-
S8.5	To reduce the potential dust and water quality impacts of site formation works, C&D materials will be wetted as quickly as possible to the extent practice after filling.	All area/ During construction	Contractor(s)		✓		Implemented	Air Pollution Control (Construction Dust) Regulation (Cap 311R); WPCO (Cap 358)
S8.5	Open stockpiles of excavated/ fill materials or construction wastes on-site should be covered with tarpaulin or similar fabric.	Land site/ During Construction, particularly dry season	Contractor(s)		✓		Implemented	Air Pollution Control (Construction Dust) Regulation (Cap 311R)
S8.5	Chemical waste container shall be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Implemented after observation	Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Handling and Storage of Chemical

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation Status	Relevant Legislation & Guidelines	
				D	C	O			
S8.5	Chemical waste container shall have a capacity of less than 450 L unless the specifications have been approved by the EPD.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Implemented	Wastes	
S8.5	A label in English and Chinese shall be displayed on the chemical container in accordance with instructions prescribed in Schedule 2 of the Regulations.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Implemented		
S8.5	Storage areas for chemical waste shall be enclosed on at least 3 sides.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Implemented		
S8.5	Storage areas for chemical waste shall have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area, whichever is the greatest.	All area/ During construction/ During operation	Contractor(s) / WSD		✓	✓	Implemented		
S8.5	Storage areas for chemical waste shall have adequate ventilation.	All area/ During construction/ During operation	Contractor(s) / WSD		✓	✓	Implemented		
S8.5	Storage areas for chemical waste shall be covered to prevent rainfall entering (water collected within the bund must be tested and disposed of as chemical waste, if necessary).	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Implemented		
S8.5	Storage areas for chemical waste shall be arranged so that incompatible materials are appropriately separated.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Implemented		
S8.5	General refuse will be stored in enclosed bins or compaction units separately from construction and chemical wastes.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Implemented, reminder issued		
S8.5	Adequate number of waste containers will be provided to avoid over-spillage of waste.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Implemented		DEVB TC(W) No. 8/2010 Enhanced Specification for Site Cleanliness and Tidiness.
S8.5	A reputable waste collector will be employed by the Contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimize odour, pest and litter impacts.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Implemented		-

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation Status	Relevant Legislation & Guidelines
				D	C	O		
S8.5	Recycling bins will be provided at strategic locations within the Site to facilitate recovery of recyclable materials (including aluminum can, wastepaper, glass bottles and plastic bottles) from the Site. Materials recovered will be sold for recycling.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Implemented	-
S8.5	To avoid any odour and litter impact, accurate number of portable toilets will be provided for workers on-site.	All area/ During construction	Contractor(s)		✓		Implemented	-
S8.5	The burning of refuse on construction sites is prohibited by law.	All area/ During construction	Contractor(s)		✓		Implemented	Air Pollution Control Ordinance (Cap 311)
S8.7	To facilitate monitoring and control over the contractors' performance on waste management, a waste inspection and audit programme will be implemented throughout the construction phase.	All facilities/ During construction	ET/ IEC		✓		Implemented	-

Note: D – Design stage C – Construction O – Operation

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation Status	Relevant Legislation & Guidelines
				D	C	O		
Ecology								
S9.7	Erect fences along the boundary of the works area before the commencement of works to prevent vehicle movements and encroachment of personnel onto adjacent areas.	All area/ During construction	Contractor(s)		✓		Implemented	-
S9.7	Regularly check the work site boundaries to ensure that they are not breached and that damage does not occur to surrounding areas.	All area/ During construction	Contractor(s)/ ET		✓		Implemented	-
S9.7	Avoid any damage and disturbance, particularly those caused by filling and illegal dumping, to the surrounding habitats through proper management of waste disposal.	All area/ During construction	Contractor(s)		✓		Implemented	-
S9.7	Reinstate temporarily affected areas, particularly the habitats of plantation and shrubland-grassland immediately after completion of construction works, through on-site tree/shrub planting. The tree/shrub species will be chosen with reference to those in the surrounding area.	All area/ During construction	Contractor(s)		✓		N/A	-

Note: D – Design stage C – Construction O – Operation

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation Status	Relevant Legislation & Guidelines
				D	C	O		
Landscape & Visual								
S11.10 & 11.11	The construction area and area allowed for temporary structures, such as the contractor's office, will be minimized to a practical minimum. (MM1)	All area/ Detailed design/ During construction/ During operation	WSD/ Contractor(s)	✓	✓	✓	Implemented	-
S11.10 & 11.11	At the detailed design stage, the design team will seek to minimize the landscape footprint of the Project and above ground facilities, while satisfying all other requirements. (MM2)	All area/ Detailed design/ During construction/ During operation	WSD/ Contractor(s)	✓	✓	✓	Implemented	-
S11.10 & 11.11	Design principles will be adopted to take into account the surrounding area, particularly Clear Water Bay Country Park behind and the nearby waterfront, with due consideration given to: - green roofs where practical (i.e., without equipment on the roof); - roadside planting; - aesthetic treatment of all structures; - vertical greening; - screen planting along application site; and - landscape enhancement with amenity planting where practical including planting along the edge (site boundary) fence with native shrubs where feasible to reduce their visual impact and blend them into the surrounding landscape.(MM3)	All area/ Detailed design/ During construction/ During operation	WSD/ Contractor(s)	✓	✓	✓	Implemented after reminder and observation	-
S11.10 & 11.11	All trees within the Project Site or the potential slope mitigation works area will be carefully protected during construction according to DEVB TCW No. 10/2013 – Tree Preservation (MM4)	All area/ Detailed design/ During construction/ During operation	WSD/ Contractor(s)	✓	✓	✓	Implemented	ETWB TCW No. 3/2006 - Tree Preservation.

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation Status	Relevant Legislation & Guidelines
				D	C	O		
S11.10 & 11.11	No tree within the Country Park will be felled. Trees within the Site unavoidably affected by the works will be transplanted where necessary and practical. For trees that need to be felled, compensatory planting will be provided to the satisfaction of relevant Government departments. A compensatory tree planting proposal including locations of tree compensation will be submitted to seek relevant government department's approval, in accordance with DEVB TC(W) No. 10/2013. (MM5)	All area/ Detailed design/ During construction/ During operation	WSD/ Contractor(s)	✓	✓	✓	N/A	DEVB TC(W) No. 10/2013

Note: D – Design stage C – Construction O – Operation

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation Status	Relevant Legislation & Guidelines
				D	C	O		
Landfill Gas Hazard								
S12.7	During all works, safety procedures should be implemented to minimise the risks of fires and explosions, asphyxiation of workers and toxicity effects resulting from contact with contaminated soil and groundwater.	All area/ Detailed design/ During construction/ During operation	Contractor(s)	✓	✓	✓	Implemented	-
S12.7	During trenching and excavation as well as creation of confined spaces at near to or below ground level, precautions should be clearly laid down and rigidly Gas detection equipment and appropriate breathing apparatus should be available and used when entering confined spaces or trenches deeper than 1 meter.	All area/ Detailed design/ During construction/ During operation	Contractor(s)	✓	✓	✓	Implemented	-
S12.7	The Contractor should make the workers are aware of potential hazards of working in confined spaces (any chamber, manhole or culvert which is large enough to permit access to personnel). Such work in confined spaces is controlled by the Factories and Industrial Undertakings (Confined Spaces) Regulations of the Factories and Industrial Undertakings Ordinance. Following the Safety Guide to Working in Confined Spaces ensures compliance with the above regulations.	All area/ Detailed design/ During construction/ During operation	Contractor(s)	✓	✓	✓	Implemented	-
S12.7	Safety officers, specifically trained with regard to landfill gas and leachate related hazards and the appropriate actions to take in adverse circumstances, should be present on the site throughout the works, in particular, when works are undertaken below grade.	All area/ Detailed design/ During construction/ During operation	Contractor(s)	✓	✓	✓	Implemented	-
S12.7	All personnel who work on site and all visitors to the site should be made aware of the possibility of ignition of gas in the vicinity of the works, the possible presence of contaminated water and the need to avoid physical contact with it.	All area/ Detailed design/ During construction/ During operation	Contractor(s)	✓	✓	✓	Implemented	-
S12.7	Monitoring for landfill gas should be undertaken in all excavations, manholes, chambers (particularly during pipe jacking) and any confined spaces through the use of an intrinsically safe portable	All area/ Detailed design/ During construction/ During operation	Contractor(s)	✓	✓	✓	Implemented	-

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation Status	Relevant Legislation & Guidelines
				D	C	O		
	instrument, appropriately calibrated and capable of measuring the concentrations of methane, carbon dioxide and oxygen.							
S12.7	Monitoring frequency and areas to be monitored should be specified prior to commencement of groundwork, either by the Safety Officer, or by an appropriately qualified person. All measurements should be recorded and documented.	All area/ Detailed design/ During construction/ During operation	Contractor(s)	✓	✓	✓	Implemented	-
S12.7	Proceed drilling with adequate care and precautions against the potential hazards which may be encountered.	All area/ Detailed design/ During construction/ During operation	Contractor(s)	✓	✓	✓	Implemented	-
S12.7	Prior to the commencement of the site works, the drilling contractor should devise a 'method-of-working' statement covering all normal and emergency procedures (including but not limited to number of operatives, experience and special skills of operatives, normal method of operations, emergency procedures, supervisors' responsibilities, storage and use of safety equipment, safety procedures and signs, barriers and guarding). The site supervisor and all operatives must be familiar with this statement.	All area/ During construction/ During operation	Contractor(s)	✓	✓	✓	Implemented	-
S12.7	Where below ground service entries are necessary to the Incoming Switchgear Room, 132 kV Substation and Chlorine Store (I) and (II), the entry point should be sealed to prevent gas entry. In addition, any below grade cable trenches entering the Incoming Switchgear Room and 132 kV Substation can become the pathway for landfill gas and hence gridded metal covers should be used.	All area/ Detailed design/ During construction/ During operation	Contractor(s)	✓	✓	✓	N/A	-
S12.7	It is recommended regular landfill gas monitoring should be carried out at the Incoming Switchgear Room, 132 kV Substation and Chlorine Store (I) and (II). The monitoring frequency will be monthly for the first year of operation. If the monitoring results show no sign of landfill gas migration, reduce the monitoring frequency to once every six months.	All area/ Detailed design/ During construction/ During operation	Contractor(s)	✓	✓	✓	N/A	-

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation Status	Relevant Legislation & Guidelines
				D	C	O		
S12.7	The manholes and utility pits within the Project Site and along the freshwater mains. Each manhole/ utility pit should be monitored with two measurements (at mid depth and base). Each measurement should be monitored for a minimum of 10 minutes. A steady reading and peak reading should be recorded at each manhole/ utility pit and for each measurement. The need for venting the manhole/ utility pit and further monitoring will be reviewed after the initial monitoring.	All area/ Detailed design/ During construction/ During operation	Contractor(s)	✓	✓	✓	Implemented	-
S12.7	All construction, operation and maintenance personnel working on-site as well as visitors should be made aware of the hazards of landfill gas and its possible presence on-site. This should be achieved through a combination of posting warning signs in prominent places and also by access to detailed information on landfill gas hazards and the designs and procedural means by which these hazards are being minimized on-site.	All area/ Detailed design/ During construction/ During operation	Contractor(s)	✓	✓	✓	Implemented	-

Note: D – Design stage C – Construction O – Operation

Appendix D

Summary of Exceedance

Summary of Exceedance

Environmental Monitoring	Parameter	No. of non-Project related exceedance in the reporting period		Total No. of non-Project related exceedance in the reporting period	No. of Project related exceedance in the reporting period		Total No. of Project related exceedance in the reporting period
		AL	LL		AL	LL	
Noise	Leq (30min)	0	0	0	0	0	0
Landfill Gas	O ₂	0	0	0	0	0	0
	CH ₄	0	0	0	0	0	0
	CO ₂	0	0	0	0	0	0

Appendix E

Complaint Log

Statistical Summary of Environmental Complaints

Reporting Period	Environmental Complaint Statistics		
	Frequency	Cumulative	Complaint Nature
1 August 2022 - 31 October 2022	0	3	N/A

Statistical Summary of Environmental Summons

Reporting Period	Environmental Summons Statistics		
	Frequency	Cumulative	Details
1 August 2022 - 31 October 2022	0	0	N/A

Statistical Summary of Environmental Prosecution

Reporting Period	Environmental Prosecution Statistics		
	Frequency	Cumulative	Details
1 August 2022 - 31 October 2022	0	0	N/A

Appendix F

Event / Action Plan for Noise and Landfill Gas

Event / Action Plan for Construction Noise Monitoring

Event	Action			Contractor
	ET	IEC	ER	
Action Level	<ol style="list-style-type: none"> Carry out investigation to identify the source and cause of the complaint/exceedance(s) Notify IEC, ER, and Contractor and report the results of investigation to the Contractor, ER and the IEC Discuss with the Contractor and IEC for remedial measures required If the complaint is related to the Project, conduct additional monitoring for checking mitigation effectiveness and report the findings and results to the IEC, ER and the Contractor 	<ol style="list-style-type: none"> 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 	<ol style="list-style-type: none"> Confirm receipt of Notification of Exceedance in writing Require Contractor to propose remedial measures for the analysed noise problem Ensure remedial measures are properly implemented 	<ol style="list-style-type: none"> Submit noise mitigation proposals, if required, to the IEC and ER Implement noise mitigation proposals.
Limit Level	<ol style="list-style-type: none"> Carry out investigation to identify the source and cause of the exceedance Notify IEC, ER, Project Proponent, EPD and Contractor Repeat measurements to confirm findings Provide investigation report to IEC, ER, EPD and Contractor he causes of the exceedances If the exceedance is related to the Project, assess effectiveness by additional monitoring. Report the remedial action implemented and the additional monitoring results to IEC, EPD, ER and Contractor If exceedance stops, cease additional monitoring 	<ol style="list-style-type: none"> Review the analysed results submitted by the ET Discuss the potential remedial measures with ER, ET Leader, and Contractor Review Contractors remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly Supervise the implementation of remedial measures 	<ol style="list-style-type: none"> Confirm receipt of Notification of Exceedance in writing Require the Contractor to propose remedial measures for the analysed noise problem Ensure remedial measures are properly implemented If exceedance continues, consider what activity of the work is responsible and instruct the Contractor, in agreement with the Project Proponent, to stop that activity of work until the exceedance is abated 	<ol style="list-style-type: none"> Take immediate action to avoid further exceedance Submit proposals for remedial actions to IEC and ER within 3 working days of notification Implement the agreed proposals Resubmit proposals if problem still not under control Stop the relevant activity of works as determined by the Project Proponent until the exceedance is abated

Action and Level and Event/ Action Plan for Landfill Gas Monitoring

Parameters	Level	Action
Oxygen (O ₂)	Action Level < 19% O ₂	Ventilate trench/void to restore O ₂ to > 19%
	Limit Level < 19% O ₂	Stop works Evacuate personnel/prohibit entry Increase ventilation to restore O ₂ to > 19%
Methane (CH ₄)	Action Level >10% LEL	Post "No Smoking" signs Prohibit hot works Increase ventilation to restore CH ₄ to <10% LEL
	Limit Level >20% LEL	Stop works Evacuate personnel/prohibit entry Increase ventilation to restore CH ₄ to <10% LEL
Carbon Dioxide (CO ₂)	Action Level >0.5% CO ₂	Ventilate to restore CO ₂ to < 0.5%
	Limit Level >1.5% CO ₂	Stop works Evacuate personnel / prohibit entry Increase ventilation to restore CO ₂ to <0.5%

Appendix G

Waste Flow Table

Appendix G – Waste Flow Table

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of Non-C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Project	Disposed as Public Fill	Imported Fill	Metals	Paper / Cardboard packaging	Plastics	Chemical Waste	Other, e.g., general refuse
	(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)
Jan 2022	2.342	0.145	--	--	2.014	0.328	--	0.065	--	--	0.006
Feb 2022	2.184	0.240	--	--	1.855	0.329	--	0.058	--	--	0.001
Mar 2022	1.284	0.028	0.096	--	1.188	0.860	--	0.054	--	--	0.002
Apr 2022	0.840	0.012	0.188	--	0.652	0.751	--	0.055	--	--	0.003
May 2022	1.008	0.036	0.528	--	0.480	0.737	--	0.057	--	--	0.000
Jun 2022	1.710	0.200	0.398	--	1.312	0.639	--	0.056	--	--	0.007
Sub-total	9.368	0.661	1.210	--	7.501	3.644	--	0.345	--	--	0.019
Jul 2022	1.750	0.116	0.617	--	1.133	0.064	--	0.055	--	--	0.006
Aug 2022	1.660	0.032	0.808	--	0.852	1.774	--	0.054	--	--	0.002
Sep 2022	1.886	0.020	0.592	--	1.294	0.847	--	0.056	--	--	0.004
Oct 2022	1.993	0.058	0.341	--	1.652	0.240	--	0.053	--	--	0.004
Nov 2022											
Dec 2022											
Total	16.657	0.887	3.568	--	12.432	6.569	--	0.563	--	--	0.035

Notes:

- 1) Total quantity Generated only refers to the actual Quantitates of inert C&D materials generated monthly excluding those that will be recycled (Hard rock & large broken concrete, reused in contract and reused in another contract). Imported fill will not be included in total quantity generated as those C&D materials are not generated from this project.
- 2) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
- 3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging materials.