

**Approved By** 

JOB NO.: TCS01216/21

WSD Contract No.: 3/WSD/20 -

Reclaimed Water Supply to Sheung Shui and Fanling

MONTHLY ENVIRONMENTAL MONITORING & AUDIT REPORT (No.8) – JULY 2022

PREPARED FOR

WATER SUPPLIES DEPARTMENT

Reference No.

# **Quality Index**

**Date** 

9 August 2022	TCS01216/21/600/R0046v1	Http	The
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Version	Date	Description
1	9 August 2022	First Submission



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Date: 12th August 2022

Project Manager

Water Supplies Department

Immigration Tower, 7 Gloucester Road,

Wan Chai, Hong Kong

Attn: Mr. Freeman Kei

Dear Sir,

Agreement No. CE67/2017(WS)

Reclaimed Water Supply to Sheung Shi and Fanling – Investigation, Design and Construction Independent Environmental Checker (IEC) Services for

Shek Wu Hui Water Reclamation Plant under Contract No. 3/WSD/20

# Monthly EM&A Monitoring Report for July 2022

We refer to the monthly EM&A Report for July 2022 for WSD Contract No.: 3/WSD/20 – Reclaimed Water Supply to Sheung Shui and Fanling certified by the Environmental Team Leader on 9<sup>th</sup> August 2022. Please note we have no adverse comments on the captioned submission. The captioned submission is hereby verified in accordance with the requirement stipulated in Condition 3.4 of Environmental Permit No. FEP-01/470/2013.

Should you have any query, please feel free to contact the undersigned at 6113 2368.

Yours Sincerely,

Vega Wong

Independent Environmental Checker

c.c.

- ET Leader AUES (Attn: Mr. T.W. Tam) [by Email: twtam@fordbusiness.com]
- Resident Engineer Binnies Hong Kong Limited (Attn: Mr. Chester Chan) [by Email: chancw@binnies.com]



#### **EXECUTIVE SUMMARY**

- ES.01 Water Supplies Department (WSD) is the Project Proponent and the Permit Holder of **Reclaimed Water Supply to Sheung Shui and Fanling** (hereinafter referred as "the Contract Works"), which
  is a Designated Project to be implemented under Further Environmental Permit number
  FEP-01/470/2013 (hereinafter referred as "the FEP-01/470/2013" or "the FEP").
- ES.02 In according with the Updated EM&A Manual stipulation and the location of Contract Works, only construction noise monitoring and waterbird of ecological monitoring are required during the construction phase of the Contract Works.
- ES.03 As part of the EM&A programme, Baseline Monitoring Report which determined Action and Limit Levels (A/L Levels) based on the baseline data, has been verified by Independent Environmental Checker (IEC) and submitted to EPD endorsement on 24 November 2021. Also, construction activities under the Contract Works were commenced on 7 December 2021.
- ES.04 This is the 8<sup>th</sup> monthly EM&A report presenting the monitoring results and inspection findings for the reporting period from 1 to 31 July 2022 (hereinafter 'the Reporting Period').

#### ENVIRONMENTAL MONITORING AND AUDIT ACTIVITIES

ES.06 Environmental monitoring activities under the EM&A programme in the Reporting Period are summarized in the following table.

Table ES-1 Environmental monitoring activities in the Reporting Period

Environmental Environmental Monitoring Parameters / Aspect Inspection		Total Occasions during Reporting Period
Construction Noise L <sub>eq(30min)</sub> Daytime		4
Ecology	Ecology Waterbirds	
Site Inspection / Audit	ET, the Contractor and RE joint site Environmental Inspection	4

#### BREACH OF ACTION AND LIMIT (A/L) LEVELS

ES.07 In the Reporting Period, no construction noise limit level exceedance construction noise was recorded and no noise complaint (i.e. Action Level) was received. No action and limit level exceedance for waterbirds survey was recorded in the Reporting Period. No Notifications of Exceedances (NOEs) was issued to the Resident Engineer (RE), IEC and the Main Contractor. The statistics of environmental exceedance, NOE issued and investigation of exceedance are summarized in the following table.

**Table ES-2** Breach of Action and Limit (A/L) Levels in the Reporting Period

Envisanmental	Manitanina	A a4: a	T ::4	Event & Action		
Environmental Aspect	Monitoring Parameters	Action Level		NOE Issued	Investigation	Corrective Actions
Construction Noise	L <sub>eq(30min)</sub> Daytime	0	0	0	0	0
Ecology	Waterbirds Abundance	0	0	0	0	0

## **ENVIRONMENTAL COMPLAINT**

ES.08 No environmental complaint was recorded or received in this Reporting Month. The statistics of environmental complaint are summarized in the following table.

**Table ES-3** Environmental Complaint Summaries in the Reporting Month

Donouting Donied	Envir	onmental Complaint Statistics		
Reporting Period	Frequency	Cumulative	Complaint Nature	
1 – 31 July 2022	0	0	NA	



ES.09 In addition, no complaints received and emergency events relating to violation of environmental legislation for illegal dumping and landfilling were received.

### NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

ES.10 No environmental summons or successful prosecution was recorded in this Reporting Month. The statistics of summons or successful prosecutions are summarized in the following tables.

**Table ES-4** Environmental Summons Summaries in the Reporting Month

Donouting Dowled	Envir	ronmental Summons Statistics		
Reporting Period	Frequency	Cumulative	Complaint Nature	
1 – 31 July 2022	0	0	NA	

## **Table ES-5** Environmental Prosecution Summaries in the Reporting Month

Donauting David	Enviro	onmental Prosecution Statistics		
Reporting Period	Frequency	Cumulative	Complaint Nature	
1 – 31 July 2022	0	0	NA	

#### REPORTING CHANGE

ES.11 No report change in the reporting period.

#### **SITE INSPECTION**

- ES.12 Weekly site inspections to evaluate the site environmental performance have been carried out by the RE, ET and the Main Contractor on 7, 14, 21 and 25 July 2022. No non-compliance was noted during the site inspection.
- ES.13 No site visit was undertaken by EPD and AFCD within the Reporting Period. IEC inspection was conducted on 27 July 2022.

#### **FUTURE KEY ISSUES**

- ES.14 Rebar fixing and formwork erection will be the major construction work in the coming month. Noise mitigation measures such as using soft face hammer for hammering work and erect barrier for wood/steel bar cutting machines were recommended to reduce noise impact.
- ES.15 As a general recommendation during wet season, the Contractor was reminded that to paid special attention to water quality mitigation measures especially to prevent surface runoff into Ng Tung River and nearby water bodies/public areas.
- ES.16 Details of the future issues in the coming month are described in Section 9.4.



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#### 1. INTRODUCTION

### 1.1 BACKGROUND

- 1.1.1 Water Supplies Department (WSD) is the Project Proponent of Utilization of Treated Sewage Effluent (TSE) from Shek Wu Hui Sewage Treatment Works. On 30<sup>th</sup> July 2021, China Geo-Engineering Corporation (hereinafter named as "the Main-Contractor") was awarded WSD Contract Works 3/WSD/20 Reclaimed Water Supply to Sheung Shui and Fanling (hereinafter referred as "the Contract Works").
- 1.1.2 The reclaimed water supply to Sheung Shui and Fanling (SSF) comprises a Shek Wu Hui Water Reclamation Plant (SWHWRP), part of pumping water mains to Table Hill Reclaimed Water Service Reservoir (TBHRWSR), and Kwu Tung North (KTN) New Development Area (NDA) and distribution water mains to SSF area.
- 1.1.3 The SWHWRP, which comprises Hypo-Chlorination Facilities (HCF) and Reclaimed Water Pumping Station (Reclaimed Water P/S), will be located at a long-stripped area between Ng Tung River and Sheung Shui Slaughter House at the northwest of the Shek Wu Hui Sewage Treatment Works (SWHSTW).
- 1.1.4 The HCF, which consists of a hypo-chlorination dosing plant, a chlorine contact tank, dye dosing system, water refilling station, other post-treatment facilitates and storage areas for chemicals, would produce reclaimed water by further treatment of the treated sewage effluent (TSE) pumped from the discharge outlet of the SWHSTW. The treatment capacity of the SWHWRP will be 73,000m3/day.
- 1.1.5 The Reclaimed Water P/S, which will be located at the northwest of the HCF, will receive reclaimed water by gravity from the HCF and deliver to the TBHRWSR serving SSF areas, Kwu Tung North Flushing Water Service Reservoir (KTN FLWSR) serving KTN NDA and Fanling North Flushing Water Service Reservoir (FLN FLWSR) serving Fanling North (FLN) NDA
- 1.1.6 This Work Contract mainly comprise construction of Shek Wu Hui Water Reclamation Plant and laying of the associated water main to produce reclaimed water for supply to the Northeast New Territories areas for non-potable used. It is estimated that about 22 million cubic metres of fresh water can be saved each year ultimately.
- 1.1.7 The construction of Shek Wu Hui Water Reclamation Plant under the Work Contract is a Designated Project to be implemented under Further Environmental Permit number FEP-01/470/2013 (hereinafter referred as "the FEP-01/470/2013" or "the FEP"). Location of Shek Wu Hui Water Reclamation Plant is shown in *Appendix A*.
- 1.1.8 The major work of the Work Contract under FEP included:
  - Civil engineering construction works, including structures, foundations and earthworks for the SWHWRP and ancillary buildings;
  - Electrical and mechanical (E&M), building services, fire services installations, and treatment process system engineering work;
  - Other associated systems and facilities for the SWHWRP.
- 1.1.9 Pursuant to the FEP stipulation, the Main Contractor has commissioned Action-United Environmental Services & Consulting (hereinafter referred as "AUES") as Environmental Team (hereinafter referred as "ET") perform relevant EM&A programme and as well as the associated duties
- 1.1.10 As part of the EM&A programme, Baseline Monitoring Report which determined Action and Limit Levels (A/L Levels) based on the baseline data, has been verified by Independent Environmental Checker (IEC) and submitted to EPD endorsement on 24 November 2021. Also, construction activities of the Contract were commencement on 7 December 2021.



1.1.11 This is 8<sup>th</sup> monthly EM&A report to presenting the monitoring results and inspection findings from *I* to *31 July 2022* of the Reporting Period.

# 1.2 REPORT STRUCTURE

1.2.1 The report was structured into the following sections:-

The report we	as surveying more than the remaining sections.
Section 1	Introduction
Section 2	Project Organization and Construction Progress
Section 3	Summary of Impact Monitoring Requirements
Section 4	Construction Noise Monitoring
Section 5	Ecology Waterbirds Monitoring
Section 6	Waste Management
Section 7	Site Inspections
Section 8	Environmental Complaints and Non-Compliance
Section 9	Implementation Status of Mitigation Measures
Section 10	Conclusions and Recommendations



#### 2. PROJECT ORGANIZATION AND CONSTRUCTION PROGRESS

### 2.1 PROJECT ORGANIZATION

2.1.1 The project organization is shown in *Appendix B*. The roles and responsibilities of the various parties involved in the EM&A process and the organizational structure of the organizations responsible for implementing the EM&A programme are outlined below.

## Water Supplies Department (WSD)

2.1.2 WSD is the Project Proponent and the Permit Holder of the EP of the development of the Project and will assume overall responsibility for the project. An Independent Environmental Checker (IEC) shall be employed by WSD to audit the results of the EM&A works carried out by the ET.

# Environmental Protection Department (EPD)

2.1.3 EPD is the statutory enforcement body for environmental protection matters in Hong Kong.

## Engineer or Engineers Representative (ER)

- 2.1.4 The ER is responsible for overseeing the construction works and for ensuring that the works are undertaken by the Contractor in accordance with the specification and contract requirements. The duties and responsibilities of the ER with respect to EM&A are:
  - Supervise the Contractor's activities and ensure that the requirements in the Contract Works Specific EM&A Manual are fully complied with;
  - Inform the Contractor when action is required to reduce impacts in accordance with the Even and Action Plans;
  - Employ an IEC to audit the results of the EM&A works carried out by the ET; and
  - Comply with the agreed Event Contingency Plan in the event of any exceedance.

## The Main Contractor

- 2.1.5 The Main Contractor is responsible perform construction works and for ensuring that the works are undertaken compliance with the specification and contract requirements. The duties and responsibilities of the Main Contractor with respect to EM&A are:
  - Employ an Environmental Team (ET) to undertake monitoring, laboratory analysis and reporting of environmental monitoring and audit;
  - Provide assistance to ET in carrying out monitoring and auditing;
  - Submit proposals on mitigation measures in case of exceedances of Action and Limit levels in accordance with the Event and Action Plans:
  - Implement measures to reduce impact where Action and Limit levels are exceeded; and
  - Adhere to the agreed procedures for carrying out compliant investigation.

# Environmental Team (ET)

- 2.1.6 The ET is responsible perform implementation EM&A programmes of the Contract Works as stipulated in the Updated EM&A Manual ensure the works are fully compliance with environmental regulations. The duties and responsibilities of the ET with respect to EM&A are:
  - Set up all the required environmental monitoring stations;
  - Monitor various environmental parameters as required in the EM&A Manual;
  - Analyze the EM&A data and review the success of EM&A programme to cost effectively
    confirm the adequacy of mitigation measures implemented and the validity of the EIA
    predictions and to identify any adverse environmental impacts arising;
  - Carry out site inspection to investigate and audit the Contractors' site practice, equipment and work methodologies with respect to pollution control and environmental mitigation, and take proactive actions to pre-empt problems;
  - Audit and prepare audit reports on the environmental monitoring data and site environmental conditions;
  - Report on the EM&A results to the IEC, Contractor, the ER and EPD or its delegated representative;
  - Recommend suitable mitigation measures to the Contractor in the case of exceedance of



Action and Limit levels in accordance with the Event and Action Plans;

- Undertake regular and ad-hoc on-site audits / inspections and report to the Contractor and the ER of any potential non-compliance; and
- Follow up and close out non-compliance actions.

# Independent Environmental Checker (IEC)

- 2.1.7 The duties and responsibilities of IEC with respect to EM&A are:
  - Review the EM&A works performed by the ET (at not less than monthly intervals);
  - Audit the monitoring activities and results (at not less than monthly intervals);
  - Report the audit results to the ER and EPD in parallel;
  - Review the EM&A reports (monthly summary reports) submitted by the ET;
  - Review the proposal on mitigation measures submitted by the Contractor in accordance with the Event and Action Plans;
  - Check the mitigation measures submitted by the Contractor in accordance with the Event and Action Plans;
  - Check the mitigation measures that have been recommended in the EIA and this Manual, and ensure they are properly implemented in a timely manner, when necessary;
  - Report the findings of site inspections and other environmental performance reviews to ER and EPD;
  - Coordinate the monitoring and auditing works for all the on-going contracts in the area in order to identify possible sources / causes of exceedances and recommend suitable remedial actions where appropriate; and
  - Coordinate the assessment and response to complaints / enquires from locals, green groups, district councils or the public at large.

### 2.2 CONSTRUCTION PROGRESS

- 2.2.1 In the Reporting Period, the construction activities of the Contract Works under FEP are listed in below. Moreover, the master construction program and site overview photo in the reporting period are enclosed in *Appendix C*.
  - Excavation and lateral support work at proposed area of Hypo-Chlorination Facilities 3 excavators
  - Rebar fixing work at proposed areas of Hypo-Chlorination Facilities
  - Formwork erection work at proposed area of Reclaimed Water Pumping Station
  - Pile Cap construction at proposed area of Reclaimed Water Pumping Station

### 2.3 SUMMARY OF ENVIRONMENTAL SUBMISSIONS

- 2.3.1 To according with the FEP stipulation, the required documents has submitted to EPD for retention as listed below:
  - Project Location Plans;
  - Updated Environmental Monitoring and Audit Manual of Project Specific (TCS01176/21/600/R0012v2); and
  - Baseline Monitoring Report (*TCS01216/21/600/R0017v3*) for the Project.
- 2.3.2 Summary of the relevant permits, licenses, and/or notifications on environmental protection for the Project is presented in *Table 2-3-1*.

**Table 2-3-1** Status of Environmental Licenses and Permits

		Licence/Permit Status			
Item	Description	Ref. no.	Effective Date	Expiry Date	
1	Air Pollution Control	Notification was made	3 Aug 2021	Till the	
	(Construction Dust) Regulation	on 3 Aug 2021		Contract ends	
2	Waste Disposal Regulation –	Account No.: 7041397	8 Aug 2021	Till the	
	Billing Account for Disposal of			Contract ends	
	Construction Waste				
3	Chemical Waste Producer	Application was made	3 Aug 2021	Till the	
	Registration	on 3 Aug 2021		Contract ends	

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		Licence/Permit Status  Ref no Effective Expiry Date				
Item	Description	Ref. no.	Effective Date	Expiry Date		
4	Water Pollution Control	Discharge Licence No.:	17 Nov 2021	30 Nov 2026		
	Ordinance – Discharge Licence	WT00039707-2021				
5	Construction Noise Permit	CNP No.	13 Jun 2022	12 Oct 2022		
		GW-RN0478-22				



## 3. SUMMARY OF IMPACT MONITORING REQUIREMENTS

### 3.1 GENERAL

3.1.1 According to the Updated EM&A Manual and the location of the Contract Works, only construction noise monitoring and waterbirds ecological of environmental monitoring are related the Contract Works during the construction phase. Details requirement of noise and waterbirds ecological impact monitoring are presented sub-sections as below.

#### 3.2 REQUIREMENT OF CONSTRUCTION NOISE MONITORING

- 3.2.1 One set of  $L_{eq(30min)}$  as 6 consecutive  $L_{eq(5min)}$  between 0700-1900 hours on normal weekdays and once every week during course of works. If construction work necessary to carry out at other time periods, i.e. restricted time period (19:00 to 07:00 the next morning and whole day on public holidays) (hereinafter referred as "the restricted hours"),  $L_{eq(5min)}$  measurement will be carried out in accordance with the CNP requirements. Supplementary information for data auditing, statistical results such as  $L_{10}$  and  $L_{90}$  shall also be obtained for reference.
- 3.2.2 Noise measurements shall not be made in fog, rain, wind with a steady speed exceeding 5m/s or wind with gusts exceeding 10m/s. The wind speed shall be checked with a portable wind speed meter capable of measuring the wind speed in m/s.

#### 3.3 LOCATION OF CONSTRUCTION NOISE IMPACT MONITORING

- 3.3.1 According to the Updated EM&A Manual of CEDD Contract No. NDO 14/2018 Advance and First Stage Works of Kwu Tung North and Fanling North New Development Areas, four noise sensitive receivers are designated on Fanling North New Development Areas for construction noise monitoring.
- 3.3.2 According to the geographic location of proposed Shek Wu Hui Water Reclamation Plant and all the recommended designated construction noise monitoring stations, only the designated noise monitoring station CP-KTN-NMS5 (prior named "CP-NMS7") shown in *Appendix D*, is located near the proposed Shek Wu Hui Water Reclamation Plant within 300m (distance about 110m). Therefore, the designated noise monitoring station CP-KTN-NMS5 is recommended for the Contract Works to undertake construction noise monitoring. If the recommended noise monitoring location CP-KTN-NMS5 not available, the ET shall propose alternative monitoring locations/additional monitoring locations and seek approval from the Supervisor of the proposal. When alternative/new monitoring location is proposed, the monitoring location shall be chosen based on the following criteria:
  - (i) at locations close to the major site activities which are likely to have noise impacts;
  - (ii) close to the noise sensitive receivers; and
  - (iii) for monitoring locations located in the vicinity of the sensitive receivers, care shall be taken to cause minimal disturbance to the occupants during monitoring.
- 3.3.3 The construction noise monitoring station shall normally be at a point 1 m from the exterior of the sensitive receivers building façade and be a position 1.2m above the ground. If there is problem with access to the normal monitoring position, an alternative position may be chosen, and a correction to the measurements shall be made to the free field measurements. The ET shall agree with the Supervisor on the monitoring station that is chosen for impact monitoring.

#### 3.4 ACTION AND LIMIT LEVEL FOR CONSTRUCTION NOISE

3.4.1 The Action and Limit levels for construction noise are defined in *Table 3-4-1*. Should non-compliance of the criteria occur, action in accordance with the Action Plan which shown in Section 4 of this report, shall be carried out.



Table 3-4-1 Action and Limit Levels for Construction Noise

Monitoring Location	Action Level	Limit Level in dB(A)	
Monitoring Location	Time Period: 0700-1900 ho	ours on normal weekdays	
CP-KTN-NMS5	When one or more documented complaints are received	75 dB(A) <sup>Note 1</sup>	

Note 1: If works are to be carried out during restricted hours, the conditions stipulated in the construction noise permit issued by the NCA have to be followed.

### 3.5 NOISE MONITORING METHODOLOGY

## Monitoring Equipment

3.5.1 Sound level meter in compliance with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications was used for carrying out the noise monitoring. Noise equipment used for impact monitoring is listed in *Table 3-5-1*.

**Table 3-5-1** Equipment of Noise Impact Monitoring

Equipment	Model
Integrating Sound Level Meter	Rion NL – 52
Calibrator	Rion NC – 74

Remark: Sound level meter IEC 60651:1979 (Type 1) was replaced by 60672 (Type 1) in 2002 (Ref: <a href="https://webstore.iec.ch/publication/17086">https://webstore.iec.ch/publication/17086</a>

3.5.2 The sound level meter and calibrator are calibrated and certified by a laboratory accredited under HOKLAS or any other international accreditation scheme at yearly basis. The valid calibration certificates of the monitoring equipment are shown in *Appendix E*.

#### 3.6 MONITORING PROCEDURE

- 3.6.1 All noise measurements were performed with the meter set to FAST response and on the A-weighted equivalent continuous sound pressure level (Leq). Leq<sub>(30min)</sub> in six consecutive Leq<sub>(5min)</sub> measurements was used as the monitoring parameter for the time period between 07:00-19:00 hours during the baseline monitoring.
- 3.6.2 In general, the sound level meter would be mounted on a tripod at a height of 1.2 m and placed at the assessment point and oriented such that the microphone was pointed to the site with the microphone facing perpendicular to the line of sight. The windshield would be fitted for all measurement. Where a measurement was to be carried out at a building, the assessment point would normally be at a position 1 m from the exterior of the building façade. Where a measurement was to be made for noise being received at a place other than a building, the assessment point would be at a position 1.2 m above the ground in a free-field situation, i.e. at least 3.5 m away from reflective surfaces such as adjacent buildings or walls.
- 3.6.3 Immediately prior to and following each noise measurement the accuracy of the sound level meter was checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements would be accepted as valid only if the calibration level from before and after the noise measurement agrees to within 1.0 dB.
- 3.6.4 Noise measurements would not be made in fog, rain, wind with a steady speed exceeding 5m/s or wind with gusts exceeding 10m/s. The wind speed would be checked with a portable wind speed meter capable of measuring the wind speed in m/s.

## 3.7 DATA MANAGEMENT AND DATA QA/QC CONTROL

3.7.1 The monitoring data recorded in the equipment would be downloaded directly from the equipment at each monitoring day. The downloaded monitoring data would input into a computerized database properly maintained and handled by the ET's in-house data recording and management system.



## 3.8 REQUIREMENT OF WATERBIRDS ECOLOGICAL IMPACT MONITORING

- 3.8.1 Where development under the NDAs project is undertaken within 200m (the maximum distance at which it is predicted there may be some disturbance, and hence a reduction in numbers, of large waterbirds) of the Ng Tung, Sheung Yue and Shek Sheung Rivers and Long Valley the monitoring protocol detailed in the updated EM&A Manual Table 12.1 should be followed. A transect should be undertaken throughout the sections of the rivers where NDA construction activities are proposed; as the sensitive receivers (large waterbirds) are easily visible, the transect route needs only follow one bank of the rivers. The transect route should remain the same during the different phases in order to ensure that data are comparable. Monitoring of large waterbirds should be conducted in pre-construction, construction and operational phases of the concerned development.
- 3.8.2 The proposed Shek Wu Hui Water Reclamation Plant location is located less than 200m to Ng Tung River, Sheung Yue River and Shek Sheung River, waterbirds ecological monitoring included pre-construction (i.e. baseline), construction (i.e. impact) and post-construction (i.e. operating) should be requires. The detailed monitoring protocol is listed in *Table 3-8-1*.

Table 3-8-1 Monitoring of Measures to Minimize Disturbance to Waterbirds on the Ng Tung, Sheung Yue and Shek Sheung Rivers

Phase	Methodology
Pre-construction (baseline)	Weekly transect at both high and low tides to identify and enumerate all bird species utilising the river channels for 12 months prior to the commencement of construction.
Construction	Weekly transect at both high and low tides to identify and enumerate all bird species utilising the river channels and identify any sources of actual or potential disturbance to birds due to construction activities throughout the construction period.
Post-construction	Weekly transect at both high and low tides to identify and enumerate all bird species utilising the river channels and identify any sources of actual or potential disturbance to birds due to operational activities for 12 months following the completion of the construction period.

3.8.3 Waterbirds ecological baseline monitoring at Ng Tung River, Sheung Yue River and Shek Sheung River was conducted by DSD between *December 2017* and *June 2019* (total 19 months baseline monitoring), in compliance with the Updated EM&A Manual. Thus, the action and limit levels and responses to evidence of disturbance to waterbirds using in Ng Tung, Sheung Yue and Shek Sheung Rivers will be made reference during construction phase of the Project.

## 3.9 MONITORING METHODOLOGY FOR WATERBIRDS ECOLOGICAL IMPACT MONITORING

3.9.1 Three transects and seven point count locations were selected at the Ng Tung, Sheung Yue and Shek Sheung River. These locations are shown in Appendix L and summarized in *Table 3-9-1*.

**Table 3-9-1 Ecological Monitoring Stations** 

<b>Monitoring Stations</b>	Descriptions	Influenced by Tidal Action	
Transect T1			
Transect T2			
Point Count Location P1	Along Ng Tung River	No	
Point Count Location P2	Along Ng Tung River	NO	
Point Count Location P3			
Point Count Location P4			
Point Count Location P5	At Shek Sheung River	No	
1 omit Count Location 1 3	(Low-flow Channel)	140	
Transect T3	Along Shek Sheung River &	Yes	
Transect 13	Sheung Yue River	103	
Point Count Location P6	At Shek Sheung River	Yes	
Point Count Location P7	At Intersection between Sheung	Yes	
Form Count Location F	Yue and Shek Sheung River	1 68	



- 3.9.2 Surveys will be conducted on a weekly basis at both high and low tides (it is considered high tide when tidal levels are above 1.5m and low tide when tidal level are below 1.5m at Tsim Bei Tsui Station).
- 3.9.3 All avifauna species that were seen or heard would be identified and quantified along transects and at point count locations. Survey data would be recorded continuously by the surveyor as they walk along the transects, while survey data of each point count location would be collected for 5-minutes after surveyor reaches the designated point count location.
- 3.9.4 Noticeable behaviours such as breeding, nesting, roosting, feeding and presences of recently fledged juveniles were recorded and reported. In the case which such behaviours were observed for species of conservation importance, the Resident Engineer (RE), the Contractor and the Independent Environmental Checker (IEC) would be immediately notified after the survey such that the Contractor could review the current construction programme and minimize disturbances due to construction activities.

## 3.10 EVENT ACTION PLAN

#### *Noise*

3.10.1 Should non-compliance of the construction noise criteria occur, action in accordance with the Action Plan in **Table 3-10-1** shall be carried out.

Table 3-10-1 Event and Action Plan for Construction Noise

Event	Action						
Event		ET		IEC		ER	Contractor
Action Level Exceedance	2.	and Contractor; Carry out investigation;	2.	Review the monitoring data submitted by the ET; Review the construction methods and	2.	Confirm receipt of notification of failure in writing; Notify the Contractor; Require the	1. Submit nois mitigation proposals to the ER and IEC and copy to the ET; 2. Implement
		Contractor; Discuss with the Contractor and formulate remedial measures; Increase monitoring frequency to check mitigation effectiveness.	3.	proposed remedial measures by the Contractor, and advise the ET and ER if the proposed remedial measures would be sufficient; Supervise the implementation of		Contractor to propose remedial measures for the analyzed noise problem; Ensure remedial measures are properly	noise mitigation proposals.
Limit Level Exceedance	<ol> <li>3.</li> <li>4.</li> <li>5.</li> </ol>	Identify sources. Inform IEC, ER, EPD and Contractor; Repeat measurements to confirm findings; Increase the monitoring frequency; Carry out analysis of the Contractor's working procedures with the ER and Contractor to determine possible mitigations to be implemented; Inform IEC, ER,		remedial measures.  Discuss amongst the ER, ET and Contractor on the potential remedial actions; Review the Contractor's remedial action whenever necessary to assure their effectiveness and advise the ER accordingly; Supervise the implementation of remedial measures.	2.	implemented.  Confirm receipt of notification of exceedance in writing;  Notify the Contractor.	1. Take immediate action to avoid further exceedance 2. Submit proposals for remedial action to the ER and IEC and copy to the ET within 3 working days of notification; 3. Implement the agree-



Erront	Action						
Event	ET	IEC	ER	Contractor			
	actions taken for the exceedances; 7. Assess the effectiveness of the Contractor's remedial action with the ER and keep the IEC informed of the results; 8. If exceedance stops, cease additional monitoring.		consider what portion of work is responsible and instruct the Contractor to stop that portion of works until the exceedance is abated.	proposals if problems still not under control; stop the relevant portion of works as determined by the ER until the exceedance is abated.			

# Waterbird of Ecological

3.10.2 Should any exceedance encountered during construction phase, action in accordance with the Action Plan listed in *Table 3-10-2* shall be carried out.

Table 3-10-2 Event and Action Plan of Waterbirds of Ecological

Action Level	Response	Limit Level	Response
<b>Construction Phase</b>			
Decline in numbers of all waterbird species relative to numbers during Baseline Monitoring such that the Action Level response is triggered.	Investigate cause and if cause identified as related to NDAs project instigate remedial action to remove or reduce source of disturbance.	Decline in numbers of all waterbird species relative to numbers during Baseline Monitoring such that the Limit Level response is triggered.	Investigate cause and if caused identified as related to NDAs project instigate remedial action. Review and adjust LVNP management measures to improve conditions for affected species.
Decline in numbers of any one waterbird species occurring in significant numbers* during Baseline Monitoring such that the Action Level response is triggered.	if cause identified as related to NDAs	Decline in numbers of any one waterbird species occurring in significant numbers* during Baseline Monitoring such that the Limit Level response is triggered.	Investigate cause and if caused identified as related to NDAs project instigate remedial action. Review and adjust LVNP management measures to improve conditions for affected species.

<sup>(\*)</sup> Waterbird numbers refer to combined numbers using the channels



#### 4. CONSTRUCTION NOISE MONITORING

### 4.1 GENERAL

4.1.1 The noise monitoring schedule is presented in *Appendix F* and the monitoring results are presented in the following sections.

#### 4.2 RESULTS OF NOISE MONITORING

4.2.1 In the Reporting Period, a total of 4 occasions noise monitoring were carried out at the designated location CP-KTN-NMS5. The sound level meter was set in free-field situation, and therefore, façade correction (+3dB) is added according to acoustical principles and EPD guidelines. The noise monitoring results at the designated locations are summarized in *Tables* 4-2-1. The detailed noise monitoring data is presented in *Appendix G* and the relevant graphical plot shown in *Appendix H*.

Table 4-2-1 Summaries of Noise Monitoring Results of CP-KTN-NMS5

Date	Start Time	$L_{Aeq30min}\left(dB(A)\right)$
8-Jul-22	14:18	63
14-Jul-22	9:30	66
20-Jul-22	15:40	57
26-Jul-22	10:19	58
Limit Level		75 dB(A)

Note: façade correction +3dB has added according to acoustical principles and EPD guidelines

- 4.2.2 During construction noise monitoring, no rain was encountered and wind speed is below 5m/s and gusts not exceeding 10m/s.
- 4.2.3 As shown in *Table 4-2-1*, the noise level measured at the designated monitoring location was below 75dB(A). Furthermore, there were no noise complaints (Action Level exceedance) received by the RE, Contractor, WSD or EPD in the Reporting Period. Therefore, no Action or Limit Level exceedance was triggered and no corrective action was therefore required.
- 4.2.4 During the reporting period, no construction work was carried out during restricted hours.



#### 5. ECOLOGY WATERBIRD MONITORING

### 5.1 GENERAL

- 5.1.1 Ecological monitoring for waterbirds shall be performed as transects and point count surveys along Ng Tung River, Sheung Yue River and Shek Sheung River in accordance with general surveying practices.
- 5.1.2 The surveying shall be undertaken by a qualified ecologist and he/she shall be a member of the ET. Throughout the construction period, weekly transect shall be conducted at both high and low tides to identify and enumerate all bird species utilising the river channels and identify any sources of actual or potential disturbance to birds due to construction activities.
- 5.1.3 Since occurrence of waterbirds has distinctive seasonal pattern, the construction phase data for all waterbirds and representative waterbirds shall be compared with the baseline data for the respective month and season. Total number of Waterbirds and six representative Waterbird species are used as an indicator of the level disturbance to water birds at each of the survey location. The representatives of waterbirds are listed in *Table 5-1-1*.

 Table 5-1-1
 Representative Waterbirds

Species Name	Common Name	Chinese Name
Egretta garzetta	Little Egret	小白鷺
Ardea alba	Great Egret	大白鷺
Ardea cinerea	Grey Heron	蒼鷺
Ardeola bacchus	Chinese Pond Heron	池鷺
Bubulcus coromandus	Eastern Cattle Egret	牛背鷺
Phalacrocorax carbo	Great Cormorant	普通鸕鷀

#### 5.2 RESULTS OF WATERBIRDS SURVEY

- 5.2.1 *Four (4)* occasion of waterbirds survey were conducted in the Reporting Month.
- 5.2.2 Abundance and diversity of total bird species and key waterbirds species in the Reporting Month are summarized in **Table 5-2-1** and **Table 5-2-2**.

Table 5-2-1 Total Bird Species and Abundance at Point Count Locations in the Reporting Month

Category	Number of Species	Abundance
All Avifauna	32	728
Waterbirds	11	159

Table 5-2-2 Abundance of Representative Waterbirds at Point Count Locations in the Reporting Month

Common Name	<b>Species Name</b>	Chinese Name	Abundance
Chinese Pond Heron	Ardeola bacchus	池鷺	58
Eastern Cattle Egret Bubulcus coromandus		牛背鷺	4
Grey Heron Ardea cinerea		蒼鷺	5
Great Egret	Ardea alba	大白鷺	19
Little Egret	Egretta garzetta	小白鷺	57
Great Cormorant	Phalacrocorax carbo	普通鸕鷀	0

5.2.3 The result was compared with the baseline data and the number of Little Egrets was found declined compared to the baseline data. A table showing the waterbirds abundance comparison with baseline data was provided in **Appendix L**. (Appendix C of the waterbirds survey report).



- As suggested in previous reporting months, the more attractive wetland habitats at Long Valley Nature Park (LVNP) may have caused waterbirds to deprioritize activities within the study area. The hypothesis is supported by the accounts of the surveyor with the observation made in the survey. In addition, the tidal influence of the Rivers may restrict the availability of foraging and roosting sites for the waterbirds. This may further encourage the waterbirds utilizing the more attractive habitats in the nearby LVNP.
- 5.2.5 Given that the anthropogenic activities recorded were similar to the previous month and no large instances of disturbance caused by construction works of the project were recorded by the surveyor, it is suggested the decline in numbers of Little Egrets are not related to the construction works. No action and limit level exceedance was therefore considered triggered in the Reporting Month.
- 5.2.6 The details of the waterbirds survey for the Reporting Month can be referred to the full waterbirds survey report provided in **Appendix L**.



## 6. WASTE MANAGEMENT

## 6.1 GENERAL WASTE MANAGEMENT

Waste management was carried out by an on-site Environmental Officer or an Environmental Supervisor from time to time.

# 6.2 RECORDS OF WASTE QUANTITIES

- 6.2.1 All types of waste arising from the construction work are classified into the following:
  - Construction & Demolition (C&D) Material;
  - Chemical Waste;
  - General Refuse; and
  - Excavated Soil.
- 6.2.2 The quantities of waste for disposal in this Reporting Period are summarized in *Tables 6-2-1* and *6-2-2* and the Monthly Summary Waste Flow Table is shown in *Appendix I*. Whenever possible, materials were reused on-site as far as practicable.

Table 6-2-1 Summary of Quantities of Inert C&D Materials

Type of Waste	Quantity	Disposal Location
C&D Materials (Inert) (in '000m <sup>3</sup> )	0.8427	-
Reused in this Contract (Inert) (in '000 m <sup>3</sup> )	0	-
Reused in other Contracts/ Projects (Inert) (in '000 m <sup>3</sup> )	0	-
Disposal as Public Fill (Inert) (in '000 m <sup>3</sup> )	0.8427	TM38

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

Type of Waste	Quantity	Disposal Location
Recycled Metal ('000kg)	0	-
Recycled Paper / Cardboard Packing ('000kg)	0	-
Recycled Plastic ('000kg)	0	-
Chemical Wastes ('000kg)	0	-
General Refuses ('000m³)	0.0078	SENT



## 7. SITE INSPECTION

## 7.1 REQUIREMENTS

7.1.1 According to the approved Updated EM&A Manual, the environmental site inspection shall be formulation by ET Leader. Weekly environmental site inspections should carry out to confirm the environmental performance.

### 7.2 FINDINGS / DEFICIENCIES DURING THE REPORTING MONTH

- 7.2.1 In the Reporting Month, weekly regular site inspection by the RE, the Main Contractor and ET was carried out on 7, 14, 21 and 25 July 2022 to evaluate site environmental performance of the Contract Works. During the site inspections, no non-compliance was noted.
- 7.2.2 The findings/deficiencies of the Contract Works observed that during the weekly site inspection are listed in *Table 7-2-1*.

**Table 7-2-1 Site Observations** 

Date	Findings / Deficiencies	Follow-Up Status
7 July 2022	• Stagnant water accumulated inside drip tray should be removed to avoid mosquito breeding	Stagnant Water inside drip tray was removed.
14 July 2022	No adverse environmental issue was observed during site inspection.	NA
21 July 2022	• Oil stains on the ground was observed near site office. The Contractor was advised to clean it and dispose of as chemical waste.	Oil stain on ground was removed and disposed as chemical waste.
25 July 2022	• Chemical containers should be placed inside drip tray to avoid land contamination. (Near Site Office)	Chemical containers were removed from site.



# 8. ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

## 8.1 ENVIRONMENTAL COMPLAINT, SUMMONS AND PROSECUTION

8.1.1 For the Contract Works, no environmental complaint, summons and prosecution was received in the Reporting Period. The statistical summary table of environmental complaint is presented in *Tables 8-1-1*, 8-1-2 and 8-1-3.

**Table 8-1-1** Statistical Summary of Environmental Complaints

Donouting Donied	Enviro	nmental Complaint St	atistics
Reporting Period	Frequency	Cumulative	Complaint Nature
1 – 31 July 2022	0	0	NA

**Table 8-1-2 Statistical Summary of Environmental Summons** 

Donauting Davied	Enviro	onmental Summons Sta	atistics
Reporting Period	Frequency	Cumulative	Complaint Nature
1 – 31 July 2022	0	0	NA

 Table 8-1-3
 Statistical Summary of Environmental Prosecution

Donouting Dowled	Enviro	nmental Prosecution S	tatistics
Reporting Period	Frequency	Cumulative	Complaint Nature
1 – 31 July 2022	0	0	NA



#### 9. IMPLEMENTATION STATUS OF MITIGATION MEASURES

## 9.1 GENERAL REQUIREMENTS

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

#### 9.2 IMPLEMENTATION STATUS OF THE MITIGATION MEASURES IN THE REPORTING PERIOD

9.2.1 The Contract Works shall be implementing the required environmental mitigation measures according to the approved Updated EM&A Manual as subject to the site condition. Environmental mitigation measures implemented by the Main Contractor in this Reporting Month are summarized in *Table 9-1-1*. A. site temporary drainage layout plan is shown in *Appendix K*.

**Table 9-1-1** Environmental Mitigation Measures Implemented in the Reporting Period

Issues	Environmental Mitigation Measures
Air Quality	All vehicles must be washed before leaving the site;
	<ul> <li>Sprayed water during excavation works;</li> </ul>
	• Stockpile of dusty material was covered entirely with impervious sheeting
	or sprayed with water so as to maintain the entire surface wet;
	<ul> <li>Water spraying on haul road and dry site area was provided regularly; and</li> </ul>
	• Where a vehicle leaving the works site is carrying a load of dusty
	materials, the load has covered entirely with clean impervious sheeting;
Constriction	<ul> <li>Keep all vehicles/plants in good condition to minimize noise impact;</li> </ul>
Noise	• Shut down the plants when not in used;
	<ul> <li>Provided quiet powered mechanical equipment to use onsite;</li> </ul>
	<ul> <li>Avoided using multiple vehicles at the same time as far as practicable</li> </ul>
Water	• All the surface runoff are collected to sedimentation pit and tanks for
Quality	sedimentation prior discharged
	• Sand bag bund was provided along the boundary of the site area near Ng
	Tung River to divert the surface runoff to sedimentation pit and avoid direct discharge of surface runoff.
	• Standby water pumps were provided on site to pump the runoff water
	collected at pit to the sedimentation tank for sedimentation.
	• Standby sedimentation tanks were provided on site to ensure sufficient sedimentation capacity.
	<ul> <li>Complied with the requirement under the discharge license.</li> </ul>
Waste and	• Disposal of C&D wastes to any designated public filling facility and/or
Chemical	landfill followed a trip ticket system;
Management	<ul> <li>Debris and refuse generated on-site collected regularly;</li> </ul>
-	<ul> <li>Oils and fuels were stored in designated areas;</li> </ul>
	Kept the site tidy and clean.

# 9.3 TENTATIVE CONSTRUCTION ACTIVITIES IN THE COMING MONTH

- 9.3.1 The tentative construction works schedule of the Contract Works under FEP in the coming month are listed below:
  - Rebar fixing work at proposed areas of Hypo-Chlorination Facilities
  - Formwork erection work at proposed area of Reclaimed Water Pumping Station and Hypo-Chlorination Facilities
  - Pile Cap construction at proposed area of Reclaimed Water Pumping Station
  - Scaffolding work at proposed areas of Reclaimed Water Pumping Station

## 9.4 KEY ISSUES FOR THE COMING MONTH

- 9.4.1 Key issues to be considered in the coming month for the Contract Works under FEP include:
  - Ensure the sand bag bund at site boundary near the Ng Tung River is properly maintained to avoid muddy discharge during heavy rain;



- Ensure sufficient capacity of sedimentation pit and tanks for wastewater sedimentation;
- Ensure all surface runoff are diverted to sedimentation pit and tanks properly;
- Sufficient stock of standby pump should be available on site for pumping the runoff water/wastewater to the sedimentation tank.
- Cover the dusty stockpile on site to reduce potential fugitive dust quality impact;
- All the vehicles should be properly washed prior leaving the site;
- Erect barrier for wood/steel bar cutting machine;
- Use Quiet powered mechanical equipment (QPME) whenever applicable;
- Minimize the number of plants used at the same time to reduce cumulative noise impact;
- Regular clearance of stagnant water after rainy days;
- Properly management of general refuse and chemical waste generated on site.



#### 10. CONCLUSIONS AND RECOMMENDATIONS

## 10.1 CONCLUSIONS

- 10.1.1 This is 8<sup>th</sup> monthly EM&A report presenting the monitoring results and inspection findings for the Reporting Period from 1 to 31 July 2022.
- 10.1.2 No noise complaint (which is an Action Level exceedance) was received and no construction noise measurement results that exceeded the Limit Level were recorded in the Reporting Period. No NOEs or the associated corrective actions were therefore issued.
- 10.1.3 Four (4) occasions of the weekly waterbirds survey has been taken in the Reporting Period. Although decline in the Little Ergret was recorded in the Reporting Period, the cause of decline was considered unlikely due to the Project. No action and limit level exceedance was considered triggered in the Reporting Month.
- 10.1.4 No documented complaint, notification of summons or successful prosecution was received by either the RE or WSD or the Main Contractor.
- 10.1.5 Weekly site inspection by the RE, ET and the Main Contractor had carried out on 7, 14, 21 and 25 July 2022. The mitigation measures implemented was considered satisfactory. No non-compliance observed during the site inspection.

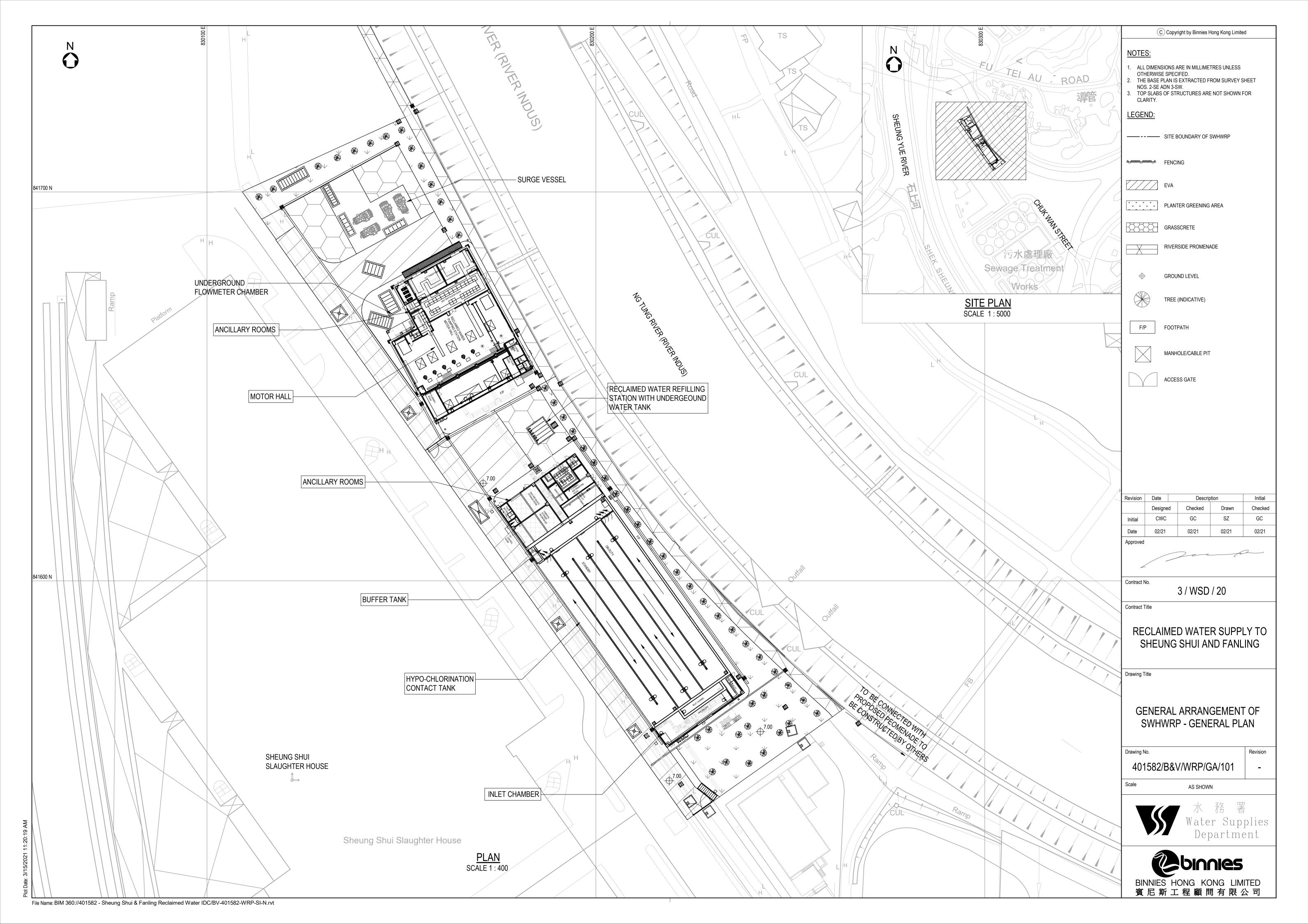
#### 10.2 RECOMMENDATIONS

- 10.2.1 Rebar fixing and formwork erection will be the major construction work in the coming month. Noise mitigation measures such as using soft face hammer for hammering work and erect barrier for wood/steel bar cutting machines were recommended to reduce noise impact.
- 10.2.2 As a general recommendation during wet season, the Contractor was reminded that to paid special attention to water quality mitigation measures especially to prevent surface runoff into Ng Tung River and nearby water bodies/public areas.
- 10.2.3 The Contractor was reminded to pay attention to the key issues for the coming month mentioned in Section 9.4.



# Appendix A

Location of Shek Wu Hui Water Reclamation Plant



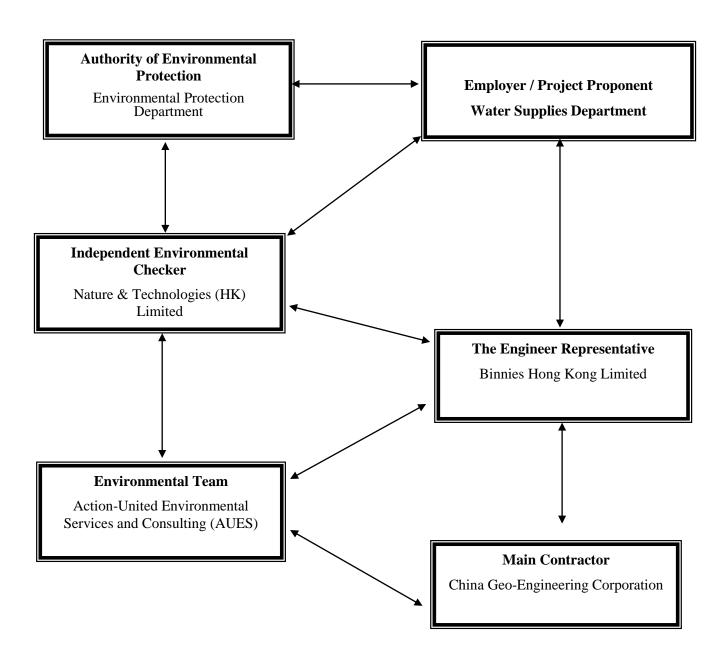


# Appendix B

**Project Organization** 



# **Project Organization Chart**





# **Contact Details of Key Personnel for the Project**

Organization	Project Role	Name of Key Staff	Tel No.	Email
WSD	Project Proponent	Tim Wong	2829 5638	tim_cw_wong@wsd.gov.hk
Binnies	Senior Resident Engineer	S.H. Chung	2608 7380	sre.3wsd20@gmail.com
Binnies	Resident Engineer	Chester Chan,	2608 7380	chancw@binnies.com
N&T	Independent Environmental Checker	Vega Wong	2877 3122	vegawong@nt.com.hk
CGC	Site Agent	Chan Tsz Kin	6874 8835	3wsd20@gmail.com
CGC	Environmental Officer	Luke Chung	6488 0975	3wsd20@gmail.com
AUES	Environmental Team Leader	T. W. Tam	2959 6059	twtam@fordbusiness.com
AUES	Environmental Consultant	Nicola Hon	2959 6059	nicolahon@fordbusiness.com
AUES	Environmental Consultant	Martin Li	2959 6059	martinli@fordbusiness.com
AUES	Assistant Environmental Consultant	Fai So	2959 6059	faiso@fordbusiness.com

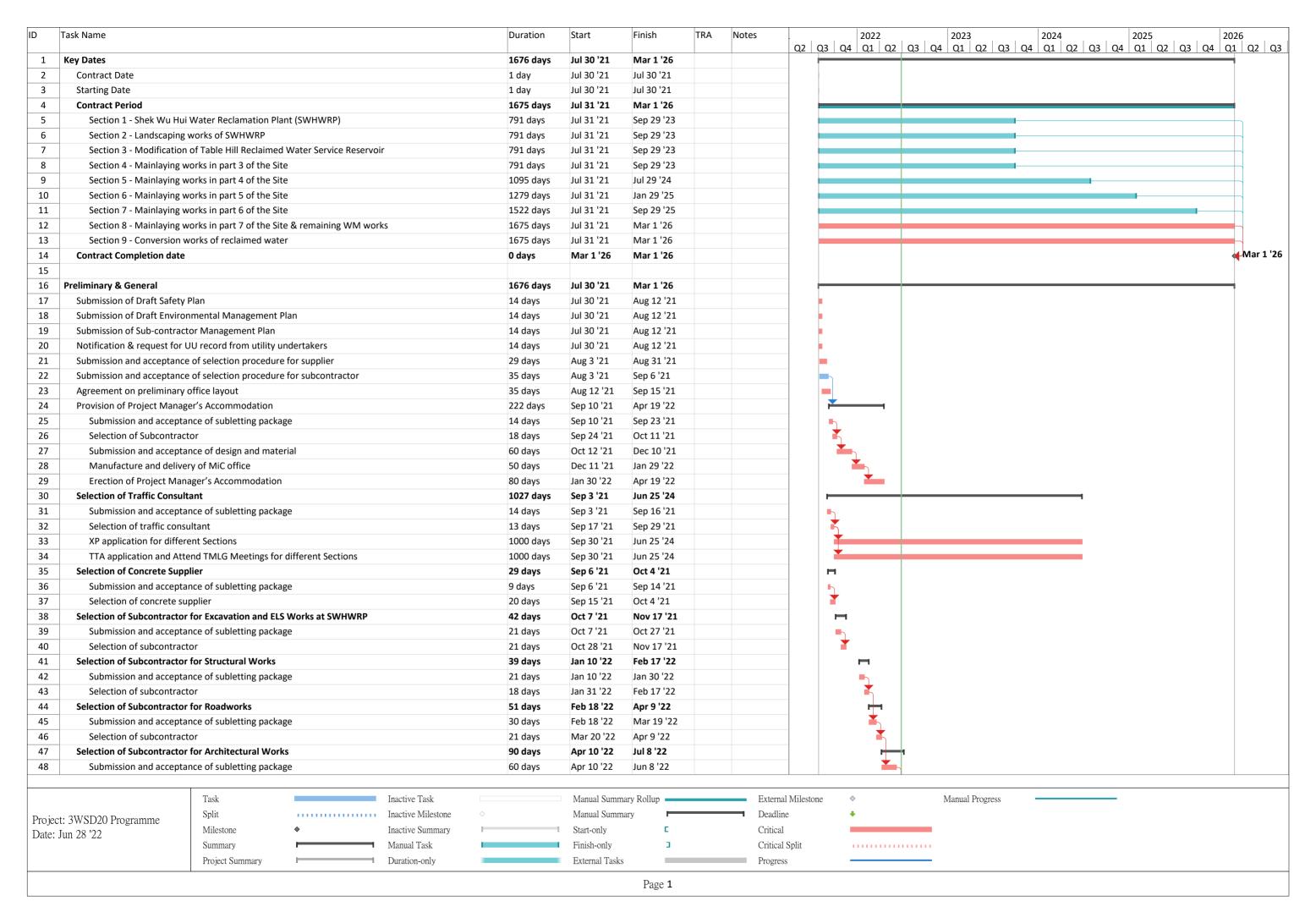
# Legend:

WSD (Employer) – Water Supplies Department
Binnies (Engineer Representative) – Binnies Hong Kong Limited
CGC (Main Contractor) –China Geo-Engineering Corporation
N&T (IEC) –Nature & Technologies (HK) Limited
AUES (ET) – Action-United Environmental Services and Consulting (AUES)



# **Appendix C**

Master Construction Program and Site Overview Photo in the Reporting Period



D Task Name	ne				Duration	Start	Finish	TRA	Notes	02 0	202 3   Q4   Q1	22 L   <sub>O2</sub>   (		2023 Q1 Q2 Q	20 3   Q4   Q	024 1   Q2   Q3   (	2025 04   Q1   Q2   C	2026 3   Q4   Q1   Q
49 Sele	lection of subcontracto	r			30 days	Jun 9 '22	Jul 8 '22			JE   Q	- , 4. , 41		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	_	- , Q. , Q		<u> </u>	
50 <b>Selecti</b>	tion of Subcontractor f	or Landscape Works			90 days	Jul 9 '22	Oct 6 '22					H	_					
51 Sub	bmission and acceptane	ce of subletting packag	ge		60 days	Jul 9 '22	Sep 6 '22											
52 Sele	lection of subcontracto	r			30 days	Sep 7 '22	Oct 6 '22											
53 <b>Selecti</b>	tion of Subcontractor f	or Mainlaying Works			188 days	Jan 24 '22	Jul 30 '22				_							
54 Sub	bmission and acceptane	ce of subletting packag	ge - open trench (for Se	ection 4)	40 days	Jan 24 '22	Mar 4 '22					h						
55 Sele	lection of subcontracto	r - open trench (for Se	ction 4)		7 days	Mar 5 '22	Mar 11 '22				i	<b>*</b>						
56 Sub	bmission and acceptane	ce of subletting packag	ge - open trench (for Se	ection 5)	43 days	Apr 20 '22	Jun 1 '22											
57 Sele	lection of subcontracto	r - open trench (for Se	ction 5)		14 days	Jun 2 '22	Jun 15 '22					*						
58 Sub	bmission and acceptane	ce of subletting packag	ge - open trench (for Se	ection 6)	21 days	Jun 23 '22	Jul 13 '22											
59 Sele	lection of subcontracto	r - open trench (for Se	ction 6)		14 days	Jul 14 '22	Jul 27 '22					1						
60 Sub	bmission and acceptane	ce of subletting packag	ge - open trench (for Se	ection 7)	24 days	Jun 30 '22	Jul 23 '22					-	)					
61 Sele	lection of subcontracto	r - open trench (for Se	ction 7)		7 days	Jul 24 '22	Jul 30 '22					i						
62 Sub	bmission and acceptane	ce of subletting packag	ge - open trench (for Se	ection 8)	24 days	Jun 30 '22	Jul 23 '22					-	)					
63 Sele	lection of subcontracto	r - open trench (for Se	ction 8)		7 days	Jul 24 '22	Jul 30 '22						•					
	bmission and acceptan			ection 9)	24 days	Jun 30 '22	Jul 23 '22					-	)					
	lection of subcontracto				7 days	Jul 24 '22	Jul 30 '22						•					
	bmission and acceptan				21 days	Jun 23 '22	Jul 13 '22					ļ.,						
	lection of subcontracto				14 days	Jul 14 '22	Jul 27 '22											
	tion of Supplier for Sur				35 days	Dec 13 '21	Jan 16 '22											
69 Sub	bmission and acceptant	ce of subletting packag	ge		21 days	Dec 13 '21	Jan 2 '22				<b>-</b>							
	lection of subcontracto				14 days	Jan 3 '22	Jan 16 '22				*							
71 Selecti	tion of Supplier for Con	nputer Facilities			47 days	Dec 7 '21	Jan 22 '22				Н							
	bmission and acceptan		ge		33 days	Dec 7 '21	Jan 8 '22											
	lection of subcontracto				14 days	Jan 9 '22	Jan 22 '22				<b>*</b>							
	tion of Environment Te				35 days	Nov 1 '21	Dec 5 '21				$\vdash$							
	bmission and acceptan		ze		21 days	Nov 1 '21	Nov 21 '21				<b>—</b>							
	lection of Environment		,-		14 days	Nov 22 '21	Dec 5 '21											
77 <b>BEAM</b>					1208 days	Dec 1 '21	Mar 22 '25				_							
	bmission and acceptant	ce of subletting package	2e		90 days	Dec 1 '21	Feb 28 '22					_					-	
	lection of BEAM plus co		,-		21 days	Mar 1 '22	Mar 21 '22											
	AM Plus PA submission				210 days	Mar 22 '22	Oct 17 '22					+						
	AM Plus FA submission				540 days	Sep 30 '23	Mar 22 '25											
82 <b>BIM</b>					1537 days	Dec 16 '21	Mar 1 '26				_							
	bmission and acceptant	ce of subletting nackag	Je		90 days	Dec 16 '21	Mar 15 '22											
	lection of BIM consulta		50		21 days	Mar 16 '22	Apr 5 '22					<b>+</b>						
	ecution of BIM (rebar B		ordination and produc	tion)	1426 days	Apr 6 '22	Mar 1 '26					<u></u>						
	tion of Contractor's De				28 days	Feb 1 '22	Feb 28 '22				н							
	bmission and acceptant				14 days	Feb 1 '22	Feb 14 '22			-	_							
	lection of Contractor's		, <u> </u>		14 days	Feb 1 5 '22	Feb 14 22 Feb 28 '22			-								
	tion of Independent Ch		for Permanent Works	(foundation)	28 days	Feb 15 22 Feb 1 '22	Feb 28 '22			-								
	bmission and acceptan			(iouiluation)	14 days	Feb 1 '22	Feb 28 22 Feb 14 '22			-								
	lection of ICE for Perma		5C		14 days	Feb 1 22 Feb 15 '22	Feb 14 22 Feb 28 '22			-								
	tion of Contractor's De		ctural Works							-								
					28 days	May 3 '22	May 30 '22			_		Ħ						
	bmission and acceptant		<b>ξ</b> Ε		14 days	May 3 '22	May 16 '22			-		<b>"</b>						
	lection of Contractor's		for Dormonout Marilia	(Civil O. Churchanal)	14 days	May 17 '22	May 30 '22			-		_						
	tion of Independent Ch			(Civii & Structural)	28 days	May 3 '22	May 30 '22			_		Ħ						
30 SUD	bmission and acceptane	се от ѕишентів раска	<del>دد</del>		14 days	May 3 '22	May 16 '22					<u> </u>						
		Task		Inactive Task		Manual Sumn	nary Rollup		Externa	al Milestone	<b>\$</b>			Manual Progress				
Dualisate AMADO	20 Duo cur	Split				Manual Sumn			Deadlin		+			-				
Project: 3WSD20		Milestone	<b>*</b>	Inactive Summary		Start-only	C		Critical									
Date: Jun 28 '22	<u> </u>	Summary		Manual Task		Finish-only	3		Critical									
		Project Summary		Duration-only		External Task	<u> </u>		Progres									
		_ 10,000 0000000000000000000000000000000	-				-		110810									

ID T	Гask Name				Duration	Start	Finish	TRA	Notes	02	03   04	2022 01 02		2023 01   02   03	04 01 02	Q3   Q4   Q1   Q2	03 04 01	
97	Selection of ICE for Perr	nanent Works			14 days	May 17 '22	May 30 '22			رد	45 (44	, Q1   Q2	<u> </u>	<u> </u>	<u>α.                                    </u>	<u> </u>	45   Q7   Q1	_ ~~   ~.
98																		
99	Section 1 & 2 - Construction of		caping Works		825 days	Aug 27 '21	Nov 29 '23				-				_			
100	Access Date (part 1 of the S	Site)			1 day	Aug 27 '21	Aug 27 '21				5							
101	Site clearance				7 days	Aug 28 '21	Sep 3 '21				15							
102	Initial survey				7 days	Sep 4 '21	Sep 10 '21				l'							
103	Installation of monitoring i		nitial readings		28 days	Nov 1 '21	Nov 28 '21				-							
104	Environmental baseline mo				33 days	Nov 4 '21	Dec 6 '21				_							
105	Foundation Works - ReWP		- for any delling conde		321 days	Aug 31 '21	Jul 17 '22						=1					
106	Submission and approve		e for pre-drilling works		7 days	Aug 31 '21	Sep 6 '21											
107	Selection of pre-drilling				13 days	Sep 7 '21	Sep 19 '21		E v 4d/holo									
108 109	Pre-drilling works (15 no Pre-drill log report and				12 days 6 days	Sep 20 '21 Oct 2 '21	Oct 1 '21 Oct 7 '21		5 x 4d/hole									
						Oct 2 21	Nov 4 '21											
110	Design review for found Piling works (54 nos. of		tal length = 2207~		28 days 88 days	Dec 7 '21	Mar 4 '22				1							
111	Installation of King Post		rai iciigiii - 230/III		7 days	Mar 5 '22	Mar 11 '22				'							
113	Testing of pre-bored H-				29 days	Mar 12 '22	Apr 9 '22											
114	Shortage of Acetylen				15 days	Mar 12 '22	Mar 26 '22											
115	Setting up of load te				7 days	Mar 27 '22	Apr 2 '22											
116	Tension Load Test				7 days	Apr 3 '22	Apr 9 '22					<b>+</b>						
117	Sheet piling works for E	LS - 300 pcs (length 12r	m)		10 days	Mar 15 '22	Mar 24 '22											
118	Excavation works (6900				56 days	Apr 10 '22	Jun 4 '22											
119	Shortage of Acetylen				24 days	Apr 10 '22	May 3 '22											
120	ELS installation and e				25 days	May 4 '22	May 28 '22					*						
121	Welding of pile head				13 days	May 23 '22	Jun 4 '22						•					
122	Laying of blinding layer				3 days	Jun 5 '22	Jun 7 '22											
123		nce of method statem	ent for pile cap construction	n	45 days	Mar 15 '22	Apr 28 '22					<b>)</b>						
124	Submission and accepta	nce of water proofing	material		45 days	Mar 15 '22	Apr 28 '22											
125	Concrete mix submissio	n, plant trial and accep	tance of Grade 50 concrete	2	45 days	Mar 9 '22	Apr 22 '22											
126	Construction of pile cap				38 days	Jun 8 '22	Jul 15 '22					*	<b>-</b>					
127	Installation of water	proofing system and to	esting		14 days	Jun 8 '22	Jun 21 '22					*						
128	Rebar fixing				21 days	Jun 22 '22	Jul 12 '22					ì	<b>K</b>					
129	Concreting of pile ca	p (996 m3)			3 days	Jul 13 '22	Jul 15 '22						K					
130	Backfilling to pile cap to	p level			2 days	Jul 16 '22	Jul 17 '22						Ť					
131	Foundation Works - HCF				325 days	Oct 2 '21	Aug 22 '22						<del>-</del>					
132	Pre-drilling works (25 no				20 days	Oct 2 '21	Oct 21 '21		5 x 4d/hole									
133	Pre-drill log report and	Point Load Test			11 days	Oct 22 '21	Nov 1 '21											
134	Design review for found				30 days	Nov 2 '21	Dec 1 '21				<del> </del>	L						
135			s) - Total length = 1871m		72 days	Dec 21 '21	Mar 2 '22											
136	Testing of pre-bored H-	•			7 days	Mar 7 '22	Mar 13 '22					1						
137	Testing of pre-bored H-	•	I test		62 days	Mar 7 '22	May 7 '22											
138	Shortage of Acetylen				36 days	Mar 7 '22	Apr 11 '22					+						
139		-piles and setting up of	load test		21 days	Apr 12 '22	May 2 '22											
140	Compression load te		.)		5 days	May 3 '22	May 7 '22	2	CO (5-5-1-1			<b>↓</b> ']						
141	Sheet piling works for E		1)		15 days	Mar 23 '22	Apr 6 '22	3	60 pcs/day									
142	Excavation works (7600 Welding of pile head ca				49 days	May 8 '22 Jun 12 '22	Jun 25 '22 Jun 25 '22											
143 144		hhilig higte			14 days	Jun 12 22 Jun 26 '22	Jun 25 22 Jun 28 '22											
144	Laying of blinding layer				3 days	Juil 20 22	Juli 28 22											
		Task	T	nactive Task		Manual Summ	ary Rollun		External	l Milesto	one <	>	N/	anual Progress				
<b>.</b> .	01110D 20 =	Split		nactive Milestone		Manual Summ			Deadline		, inc	<b>.</b>	14.					
	: 3WSD20 Programme	Milestone		nactive Summary		Start-only	, г		Critical									
Date: Ju	un 28 '22	Summary		Manual Task		Finish-only	3		Critical									
		Project Summary		Ouration-only		External Tasks	_		Progress									
		1 Toject Summary	- " 1	Jaranon-Omy		LAUTHAI TASK	,		1 1081688									

Та	isk Name		Duration	Start	Finish	TRA	Notes	2022   2023   2024   2025   2026   Q2   Q3   Q4   Q1   Q3   Q4
145	Construction of pile cap		52 days	Jun 29 '22	Aug 19 '22			42 42 42 42 43 44 41 42 43 44 41 42
146	Installation of water	proofing system and testing (1/3)	14 days	Jun 29 '22	Jul 12 '22		From G.L. 1	
L47	Rebar fixing (1/3)		14 days	Jul 6 '22	Jul 19 '22			
.48	Concreting of pile ca	p (1/3) - 920m3	3 days	Jul 20 '22	Jul 22 '22			
L49	Installation of water	proofing system and testing (1/3)	14 days	Jul 13 '22	Jul 26 '22			
L50	Rebar fixing (1/3)		14 days	Jul 20 '22	Aug 2 '22			
.51	Concreting of pile ca	p (1/3) - 920m3	3 days	Aug 3 '22	Aug 5 '22			
.52	Installation of water	proofing system and testing (1/3)	14 days	Jul 27 '22	Aug 9 '22			
.53	Rebar fixing (1/3)		14 days	Aug 3 '22	Aug 16 '22			
.54	Concreting of pile ca	p (1/3) - 920m3	3 days	Aug 17 '22	Aug 19 '22			
155	Backfilling to pile cap to		3 days	Aug 20 '22	Aug 22 '22			
156								
157	Construction of SWHWRP		537 days	May 1 '22	Oct 19 '23			
.58	Submission and accepta station	ance of DfMA proposal for bathroom unit, valves chamber, water refilling	60 days	Jun 9 '22	Aug 7 '22			
.59	Selection of Supplier for	r DfMA	21 days	Aug 8 '22	Aug 28 '22			
.60	Manufacture of DfMA F		60 days	Aug 29 '22	Oct 27 '22			
.61	Installation of DfMA seg	<del>-</del>	90 days	Oct 28 '22	Jan 25 '23			
162		ance of method statement for construction of ReWPS and HCF	30 days	May 3 '22	Jun 1 '22			
163	Construction of RC stru		270 days	Jul 18 '22	Apr 13 '23			
164		ement (below ground)	91 days	Jul 18 '22	Oct 16 '22			
165		crut and wailing (2nd layer)	2 days	Jul 18 '22	Jul 19 '22			
166		xternal walls, W6, W8-W15, beams and slabs (+0mPD to +5.6mPD)	51 days	Jul 20 '22	Sep 8 '22			
.67		ection and rebar fixing	28 days	Jul 20 '22	Aug 16 '22			
168		Formwork erection	21 days	Aug 17 '22	Sep 6 '22			
.69	Concreting	Tomwork erection	2 days	Sep 7 '22	Sep 8 '22			
170	Removal of form	work	3 days	Sep 9 '22	Sep 11 '22			
171		esting of water proofing system	7 days	Sep 12 '22	Sep 18 '22			
.72		moval of ELS strut and wailing (1st layer)	4 days	Sep 12 '22	Sep 22 '22			
.73		xternal walls, W6, W8-W15 (+5.6mPD to +7.2mPD)	20 days	Sep 23 '22	Oct 12 '22			
174		ection and rebar fixing	7 days	Sep 23 '22	Sep 29 '22			
175	Formwork ere	-		Sep 30 '22				
176	Concreting	CLIOII	6 days 1 day	Oct 6 '22	Oct 5 '22 Oct 6 '22			
177	Removal of fo	rmuark	1 day	Oct 6 22 Oct 7 '22	Oct 6 22 Oct 7 '22			
178 179		d testing of water proofing system	5 days	Oct 8 '22	Oct 12 '22			
		5.6mPD to +7.2mPD	4 days	Oct 13 '22	Oct 16 '22			
180		taircase ST1, ST2 (+0mPD to +7.2mPD)	38 days	Aug 27 '22	Oct 3 '22			
181		d falsework erection	7 days	Aug 27 '22	Sep 2 '22			
.82	Rebar fixing		14 days	Sep 3 '22	Sep 16 '22			
183	Formwork ere	ction	14 days	Sep 17 '22	Sep 30 '22			
184	Concreting	A office	3 days	Oct 1 '22	Oct 3 '22			
185	Removal of ELS shee	•	7 days	Oct 17 '22	Oct 23 '22			
186		erstructure (above ground) - Grid Line 4-6	203 days	Sep 23 '22	Apr 13 '23			
187		ase slab (+4.45mPD to +5.95mPD & +5.6mPD to +7.1mPD)	21 days	Sep 23 '22	Oct 13 '22			
188		water proofing system	7 days	Sep 23 '22	Sep 29 '22			
189	Rebar fixing		7 days	Sep 30 '22	Oct 6 '22			
190	Formwork ere	ction	5 days	Oct 7 '22	Oct 11 '22			
191	Concreting		2 days	Oct 12 '22	Oct 13 '22			
192	Construction of C	olumns (+5.95mPD to +13.25mPD)	28 days	Oct 14 '22	Nov 10 '22			
-	3WSD20 Programme n 28 '22	Task Inactive Task Split Inactive Milestone Milestone  Inactive Summary		Manual Sumn Manual Sumn Start-only			Externa Deadlin Critical	Milestone   Manual Progress   Manual Progress
vaic. Jul	11 20 22	Summary Manual Task		Finish-only	3		Critical	Split
		Project Summary Duration-only		External Tasks	s		Progres	
					-		1105103	

D Task Na	me				Duration	Start	Finish	TRA	Notes	02		2022 01 02	03   04	2023 01 0	02   03   04	2024 4   Q1   Q2   Q3   Q4   C	.025 01   02   03   04	2026
193	Scaffolding er	ection and rebar fixing			14 days	Oct 14 '22	Oct 27 '22				45   41	Q1   Q2	Q5   Q.		<u> </u>	. 41 42 43 41 3	(2   Q2   Q3   Q .	
194	Formwork ere	ction			7 days	Oct 28 '22	Nov 3 '22											
195	Concreting				7 days	Nov 4 '22	Nov 10 '22											
196	Construction of B	earing walls and Slabs (-	+5.95mPD to +7.2mPD)		14 days	Nov 11 '22	Nov 24 '22						<b>*</b>					
197	Rebar fixing				7 days	Nov 11 '22	Nov 17 '22						Ь					
198	Formwork ere	ction			4 days	Nov 18 '22	Nov 21 '22											
199	Concreting an	d curing of concrete			3 days	Nov 22 '22	Nov 24 '22											
200		earing walls (+7.2mPD t	o +13.25mPD)		14 days	Nov 25 '22	Dec 8 '22											
201	Rebar fixing		<u> </u>		7 days	Nov 25 '22	Dec 1 '22											
202	Formwork ere	ction			4 days	Dec 2 '22	Dec 5 '22											
203		d curing of concrete			3 days	Dec 6 '22	Dec 8 '22											
204		eams and Slabs at +11.8	BmPD		28 days	Dec 9 '22	Jan 5 '23							<u> </u>				
205		d falsework erection			7 days	Dec 9 '22	Dec 15 '22											
206	Formwork ere				3 days	Dec 16 '22	Dec 18 '22						F					
207	Rebar fixing				14 days	Dec 10 22 Dec 19 '22	Jan 1 '23			-								
208		d curing of concrete			4 days	Jan 2 '23	Jan 5 '23			_				<b> </b>				
209		eams and Slabs at +13.2	25mPD		60 days	Jan 6 '23	Mar 6 '23			_								
		eams and slabs at +13.2 d falsework erection	טווורט			Jan 6 23 Jan 6 '23	Jan 19 '23			_				<u>'</u> [ ]				
210					14 days					_								
211	Formwork ere	CUOII			14 days	Jan 20 '23	Feb 2 '23			_								
212	Rebar fixing	al accessor of the second			21 days	Feb 3 '23	Feb 23 '23			_								
213		d curing of concrete	0:11: 4.6		11 days	Feb 24 '23	Mar 6 '23			_								
214		ernal finishing works for	Grid Line 4-6		38 days	Mar 7 '23	Apr 13 '23			_								
215		e for cable trench			7 days	Mar 7 '23	Mar 13 '23											
216		g system at slabs			3 days	Mar 14 '23	Mar 16 '23											
217		g on floor finish			7 days	Mar 17 '23	Mar 23 '23											
218	· · · · · · · · · · · · · · · · · · ·	int at wall and soffit			7 days	Mar 24 '23	Mar 30 '23											
219		system at cable trench			7 days	Mar 31 '23	Apr 6 '23											
220		oor system at chemical	storage rooms		7 days	Apr 7 '23	Apr 13 '23											
221		uminum louver			7 days	Apr 7 '23	Apr 13 '23											
222		arapet Walls (+13.25mF	D to +14.65mPD)		14 days	Mar 7 '23	Mar 20 '23											
223	Scaffolding er	ection			1 day	Mar 7 '23	Mar 7 '23											
224	Rebar fixing				7 days	Mar 8 '23	Mar 14 '23											
225	Formwork ere	ction			5 days	Mar 15 '23	Mar 19 '23											
226	Concreting				1 day	Mar 20 '23	Mar 20 '23											
227	Construction of S	taircase ST3 (+7.1mPD t	o +13.5mPD)		18 days	Jan 6 '23	Jan 23 '23							H				
228		precast segments			3 days	Jan 6 '23	Jan 8 '23											
229	Rebar fixing				3 days	Jan 9 '23	Jan 11 '23											
230	Concreting an	d curing of concrete			12 days	Jan 12 '23	Jan 23 '23											
231	Construction of Sup	erstructure (above grou	ınd) - Grid Line 1-4		179 days	Oct 17 '22	Apr 13 '23						<u> </u>					
232	Construction of B	eams and Slabs at +7.2r	nPD		45 days	Oct 17 '22	Nov 30 '22						Н					
233	Falsework ere	ction			14 days	Oct 17 '22	Oct 30 '22						<b>-</b>					
234	Formwork ere	ction			14 days	Oct 31 '22	Nov 13 '22											
235	Rebar fixing				14 days	Nov 14 '22	Nov 27 '22											
236	Concreting				3 days	Nov 28 '22	Nov 30 '22						H					
237	Construction of B	eams and Slabs at +9.1r	nPD		46 days	Oct 31 '22	Dec 15 '22											
238	Falsework ere	ction			8 days	Oct 31 '22	Nov 7 '22											
239	Formwork ere	ction			8 days	Nov 28 '22	Dec 5 '22						🐈					
240	Rebar fixing				8 days	Dec 6 '22	Dec 13 '22											
I	3	Task		Inactive Task	,	Manual Summa	J		Fytern	al Milesto	one ♦		1	Manual Pro	noress			
		Split		Inactive Milestone		Manual Summa			Deadli				ľ	vianual FI	ogress			
	D20 Programme				~		ar y		— Deadii Critica		_							
Oate: Jun 28 '2	22	Milestone	<b>*</b>	Inactive Summary		Start-only	L											
		Summary		Manual Task		Finish-only	]		Critica									
		Project Summary		Duration-only		External Tasks			Progre	ess								

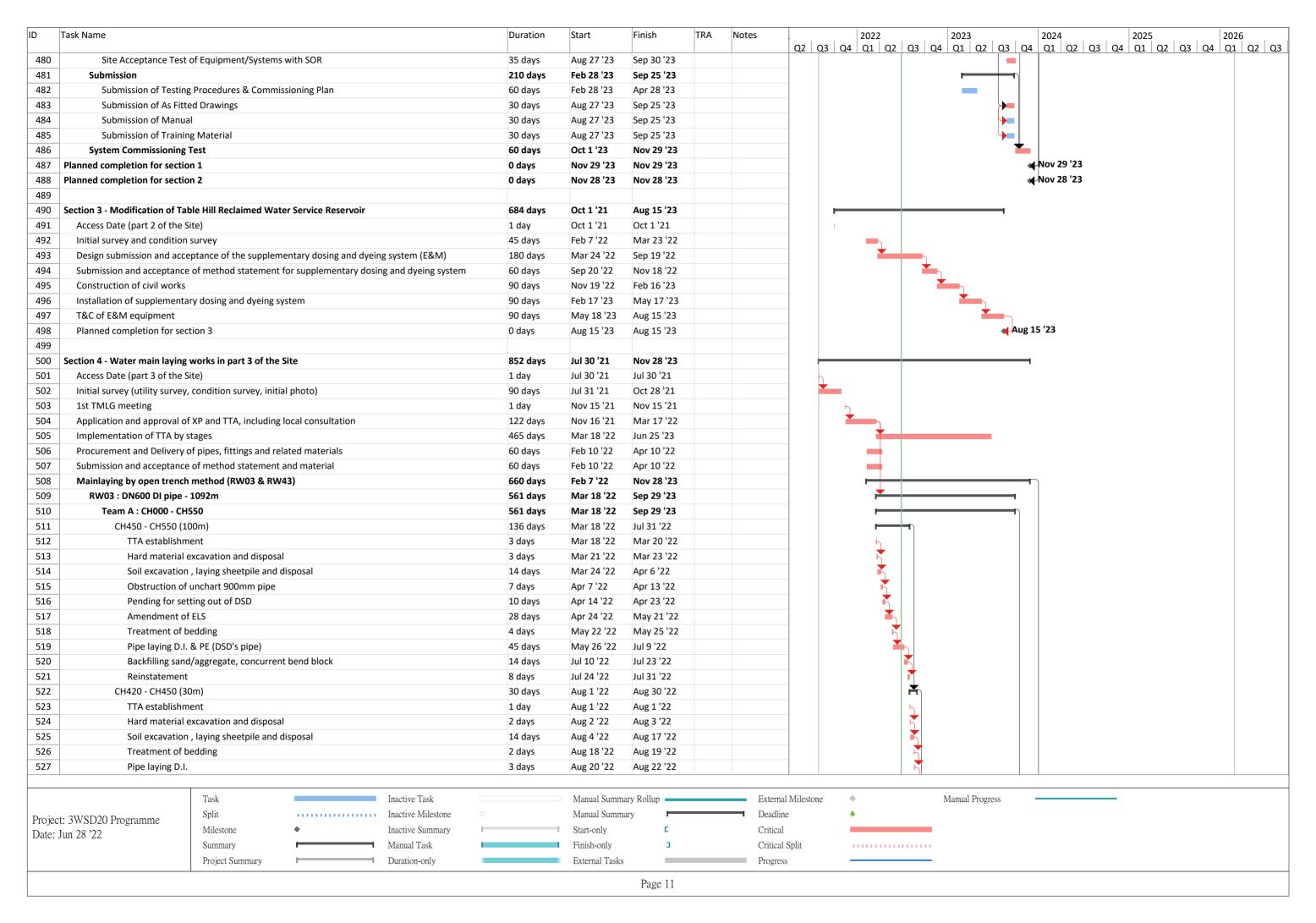
Task Name			Duration	Start	Finish	TRA	Notes	02	202 03   04   01	22   <sub>02</sub>   <sub>03</sub>	3 04	2023 Q1 (	02   03   0	2024   2025   2026   Q4   Q1   Q2   Q3   Q4   Q1   Q2   Q3   Q4   Q1   Q2
241 Coi	ncreting		2 days	Dec 14 '22	Dec 15 '22				<u></u> , <u>u</u> . , <u>u</u> 1					32 32 32 32 32 32 32 32 32 32 32 32
242 Remov	al of formwork and falsework		7 days	Dec 16 '22	Dec 22 '22									
Water	tightness test		14 days	Dec 23 '22	Jan 5 '23							ĥ		
144 Install	ation of internal finishing works fo	or basement	14 days	Jan 6 '23	Jan 19 '23									
245 Constr	ruction of Walls and Columns (+7.	2mPD to +15.2mPD)	21 days	Dec 1 '22	Dec 21 '22						H			
246 Sca	ffolding erection and rebar fixing		7 days	Dec 1 '22	Dec 7 '22						5			
47 For	mwork erection		7 days	Dec 8 '22	Dec 14 '22						į į			
	ncreting		7 days	Dec 15 '22	Dec 21 '22						F			
	ruction of Walls and Columns (+9.	•	21 days	Dec 16 '22	Jan 5 '23						F	1		
50 Sca	ffolding erection and rebar fixing		7 days	Dec 16 '22	Dec 22 '22						ì			
	mwork erection		7 days	Dec 23 '22	Dec 29 '22						ì	$\mathbb{L}$		
	ncreting		7 days	Dec 30 '22	Jan 5 '23									
	ruction of Beams and Slabs at +15	.2mPD	60 days	Jan 6 '23	Mar 6 '23						`			
	sework erection		21 days	Jan 6 '23	Jan 26 '23							<u></u>		
	mwork erection		14 days	Jan 27 '23	Feb 9 '23									
	par fixing		21 days	Feb 10 '23	Mar 2 '23									
	ncreting		4 days	Mar 3 '23	Mar 6 '23									
	ation of internal finishing works fo	or Grid Line 1-4 above ground	38 days	Mar 7 '23	Apr 13 '23									
	ss concrete for cable trench		7 days	Mar 7 '23	Mar 13 '23							<u> </u>		
	terproofing system at slabs		3 days	Mar 14 '23	Mar 16 '23									
-	oxy painting on floor finish		7 days	Mar 17 '23										
	ster and paint at wall and soffit		7 days	Mar 24 '23	Mar 30 '23							1 5		
	equer plate system at cable trenc		7 days	Mar 31 '23	Apr 6 '23							5		
	el grating floor system at chemica	al storage rooms	7 days	Apr 7 '23	Apr 13 '23									
	door and aluminum louver		7 days	Apr 7 '23	Apr 13 '23									
	ruction of Parapet Walls (+15.2ml	PD to +16.6mPD)	21 days	Mar 7 '23	Mar 27 '23							H		
	ffolding erection		2 days	Mar 7 '23	Mar 8 '23							<u> </u>		
	par fixing		10 days	Mar 9 '23	Mar 18 '23									
	mwork erection		7 days	Mar 19 '23	Mar 25 '23									
	ncreting		2 days	Mar 26 '23	Mar 27 '23							1		
	ruction of Staircase ST3 (+13.5mP	D to +15.45mPD)	7 days	Mar 7 '23	Mar 13 '23							■*		
	tallation of precast segments		3 days	Mar 7 '23	Mar 9 '23									
	par fixing		3 days	Mar 10 '23	Mar 12 '23							5		
	ncreting and curing of concrete		1 day	Mar 13 '23										
	of water proofing system at roo	of slab of ReWPS	15 days	Mar 28 '23									-	
	ness test for roof slab of ReWPS		15 days	Apr 12 '23	Apr 26 '23									
277	<b>.</b>													
	of RC structure of HCF	N 0 : 11:	303 days	Aug 23 '22							<b>—</b>			
	tion of Superstructure (above gro		137 days	Aug 23 '22						"				
	fuction of Columns (+5.55mPD to		14 days	Aug 23 '22	Sep 5 '22						1			
	ffolding erection and rebar fixing		7 days	Aug 23 '22	Aug 29 '22									
	mwork erection		4 days	Aug 30 '22	Sep 2 '22						1			
	ncreting	10.4mPD)	3 days	Sep 3 '22 Sep 6 '22	Sep 5 '22						<u> </u>			
	ruction of Wall W8 (+5.8mPD to + ffolding erection and Rebar fixing		14 days 8 days	Sep 6 '22 Sep 6 '22	Sep 19 '22 Sep 13 '22						[]			
	mwork erection and Repar fixing		5 days	Sep 6 22 Sep 14 '22	Sep 13 22 Sep 18 '22									
	ncreting		1 day	Sep 14 22 Sep 19 '22	Sep 18 22 Sep 19 '22									
	ruction of Bearing walls and Slabs	(±5 55mDD to ±7 1mDD)	1 day	Sep 19 22 Sep 20 '22	Oct 3 '22						*			
constr	uction of bearing wans and slabs	(ייס.סטוורט נט דיי.בווורט)	14 uays	3ep 20 22	OCI 3 22						n			
	Task	Inactive T	sk	Manual Sumi	nary Rollup 📥		Externa	al Mileston	ie 💠		N	Manual Pi	rogress	
roject: 3WSD20 Program	Split	Inactive M	ilestone $\Diamond$	Manual Sumi	nary		Deadlin	ne	•					
roject: 3 w SD20 Prograi late: Jun 28 '22	nme Milestone	♦ Inactive S	mmary	Start-only	E		Critical	1						
aic. Juli 20-22	Summary	Manual Ta		Finish-only	3		Critical							
	Project Summary	Duration-c		External Task	as ====		Progres							
	, , , , , , , , , , , , , , , , , , , ,		-				3-40							

ID	Task Name				Duration	Start	Finish	TRA	Notes	02		2022	03 04	2023			2024 01 02 0		2025 Q1   Q2   Q3	04 01	
289	Rebar fixing				7 days	Sep 20 '22	Sep 26 '22			٧٤	~~   QT	41 UL	Q   Q	<u> </u>		- <del></del>	<u> </u>	~~	<u> </u>		-   42   4
290	Formwork ere	ction			4 days	Sep 27 '22	Sep 30 '22						K								
291	Concreting and	curing of concrete			3 days	Oct 1 '22	Oct 3 '22														
292	Construction of C	olumns (+10.4mPD to	+13.00mPD)		7 days	Oct 4 '22	Oct 10 '22						l k								
293	Scaffolding ere	ction and Rebar fixing	Ş		4 days	Oct 4 '22	Oct 7 '22						Ь								
294	Formwork ere	ction			2 days	Oct 8 '22	Oct 9 '22						l F								
295	Concreting				1 day	Oct 10 '22	Oct 10 '22														
296	Construction of B	eams and Slabs at +13	3.00mPD		50 days	Oct 11 '22	Nov 29 '22														
297	Scaffolding and	d falsework erection			14 days	Oct 11 '22	Oct 24 '22						<b></b>								
298	Formwork ere	ction			14 days	Oct 25 '22	Nov 7 '22														
299	Rebar fixing				14 days	Nov 8 '22	Nov 21 '22						*								
300	Concreting and	curing of concrete			8 days	Nov 22 '22	Nov 29 '22						1								
301	Installation of inte	ernal finishing works for	or Grid Line 1-3		38 days	Nov 30 '22	Jan 6 '23						i	<del>*</del> h							
302	Mass concrete	for cable trench			7 days	Nov 30 '22	Dec 6 '22							$\parallel \parallel \parallel$							
303	Waterproofing	system at slabs			3 days	Dec 7 '22	Dec 9 '22							<b>#</b>							
304	Epoxy painting	on floor finish			7 days	Dec 10 '22	Dec 16 '22														
305		nt at wall and soffit			7 days	Dec 17 '22	Dec 23 '22														
306	Chequer plate	system at cable trenc	h and aerator room		7 days	Dec 24 '22	Dec 30 '22														
307	Steel grating fl	oor system at chemica	al storage rooms		7 days	Dec 31 '22	Jan 6 '23														
308	SS door and al	uminum louver			7 days	Dec 31 '22	Jan 6 '23														
309	Construction of P	arapet Walls (+13.00n	nPD to +15.1mPD)		14 days	Nov 30 '22	Dec 13 '22						i	<b>†</b>							
310	Scaffolding ere	ction			1 day	Nov 30 '22	Nov 30 '22														
311	Rebar fixing				7 days	Dec 1 '22	Dec 7 '22														
312	Formwork ere	ction			5 days	Dec 8 '22	Dec 12 '22							*							
313	Concreting				1 day	Dec 13 '22	Dec 13 '22														
314	Construction of Supe	erstructure (above gro	ound) - Grid Line 3-7		261 days	Aug 23 '22	May 10 '23						<u> </u>		┪						
315	Construction of C	olumns (+4.55mPD to	+10.8mPD)		14 days	Aug 23 '22	Sep 5 '22						<b>H</b> )								
316	Scaffolding ere	ction and rebar fixing			7 days	Aug 23 '22	Aug 29 '22						Ь								
317	Formwork ere	ction			4 days	Aug 30 '22	Sep 2 '22														
318	Concreting				3 days	Sep 3 '22	Sep 5 '22														
319	Construction of W	/alls W1, W7, W19, W	20, W29		21 days	Sep 6 '22	Sep 26 '22						📥								
320	Scaffolding ere	ction and Rebar fixing			10 days	Sep 6 '22	Sep 15 '22						Ь								
321	Formwork ere				7 days	Sep 16 '22	Sep 22 '22														
322	Concreting				4 days	Sep 23 '22	Sep 26 '22														
323	Construction of W	/alls W9, W13, W14, V	W37, W38		10 days	Sep 27 '22	Oct 6 '22						i								
324		ction and Rebar fixing			6 days	Sep 27 '22	Oct 2 '22						Ь								
325	Formwork ere				3 days	Oct 3 '22	Oct 5 '22														
326	Concreting				1 day	Oct 6 '22	Oct 6 '22														
327	Construction of W	alls W2 to W6			28 days	Oct 7 '22	Nov 3 '22						📥								
328		ction and Rebar fixing	3		14 days	Oct 7 '22	Oct 20 '22						<b>.</b>								
329	Formwork ere		•		10 days	Oct 21 '22	Oct 30 '22														
330	Concreting				4 days	Oct 31 '22	Nov 3 '22						+								
331		/alls W10, W11. W15.	W16, W12, W35, W36		10 days	Nov 4 '22	Nov 13 '22							·							
332		ction and Rebar fixing			6 days	Nov 4 '22	Nov 9 '22														
333	Formwork ere		•		3 days	Nov 10 '22	Nov 12 '22							<b>-</b>							
334	Concreting				1 day	Nov 13 '22	Nov 13 '22						3	<b>-</b>							
335		eams and Slabs at +10	0.4mPD and +10.8mPD		150 days	Nov 14 '22	Apr 12 '23								1						
336		falsework erection			45 days	Nov 14 '22	Dec 28 '22						•								
		I		Inactive Task	30/0					nol Mile-4:	ne 🔷			Mon13	Dungerra						
		Task				Manual Summ				nal Mileston	IC ♥			Manual 1	rrogress	_					
Projec	t: 3WSD20 Programme	Split		Inactive Milestone		Manual Summ	ary		Deadl		+										
Date:	Jun 28 '22	Milestone		Inactive Summary		Start-only	С		Critica												
		Summary		Manual Task		Finish-only	3			al Split											
		Project Summary		Duration-only		External Tasks			Progre	ess	_										

Task	k Name				Duration	Start	Finish	TRA	Notes	02 03	2022 Q4 Q1 Q2	03 04	2023	)   U3   (	2024	2025		2026
337	Formwork ered	ction			45 days	Dec 29 '22	Feb 11 '23			QZ Q3	, Q4   Q1   Q2	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			<u> </u>	Q3   Q4   Q1   V	<u> </u>	QI QZ
338	Rebar fixing				45 days	Feb 12 '23	Mar 28 '23											
39	Concreting and	d curing of concrete			15 days	Mar 29 '23	Apr 12 '23											
40	Construction of Pa	arapet Walls (+10.4mPD/	+10.8mPD to +12.5mP	PD)	14 days	Apr 13 '23	Apr 26 '23											
41	Scaffolding ere	ection			1 day	Apr 13 '23	Apr 13 '23											
342	Rebar fixing				7 days	Apr 14 '23	Apr 20 '23											
43	Formwork ered	ction			5 days	Apr 21 '23	Apr 25 '23											
344	Concreting				1 day	Apr 26 '23	Apr 26 '23							-				
45		taircase ST01 (+7.1mPD to	o +11 35mPD)		28 days	Apr 13 '23	May 10 '23											
346		d falsework erection	0 · 11.55iiii Dj		14 days	Apr 13 '23	Apr 26 '23											
347	Rebar fixing	u laisework erection			7 days	Apr 27 '23	May 3 '23							.				
348	Formwork ered	ation												-				
		ction			5 days	May 4 '23	May 8 '23											
349	Concreting				2 days	May 9 '23	May 10 '23											
350		taircase ST02 (+10.4mPD	to +13.95mPD)		14 days	Apr 13 '23	Apr 26 '23											
351		d falsework erection			7 days	Apr 13 '23	Apr 19 '23											
352	Rebar fixing				3 days	Apr 20 '23	Apr 22 '23							.				
353	Formwork ered	ction			3 days	Apr 23 '23	Apr 25 '23							.				
354	Concreting				1 day	Apr 26 '23	Apr 26 '23											
355	Watertightness test i				56 days	Apr 13 '23	Jun 7 '23							4				
356	Inlet Channel and	l Outlet Channel			14 days	Apr 13 '23	Apr 26 '23							.				
357	On duty contact to	tank			14 days	Apr 27 '23	May 10 '23											
358	Standby contact t	tank			14 days	May 11 '23	May 24 '23											
359	Overall water reta	aining structure at HCF			14 days	May 25 '23	Jun 7 '23							*				
360	Installation of interna	al finishing works for Grid	Line 3-7		14 days	Jun 8 '23	Jun 21 '23							<b>X</b>				
361	Construction of water p	proofing system at roof sla	ab of HCF		15 days	Apr 27 '23	May 11 '23											
362	Water tightness test for	r roof slab of HCF			15 days	May 12 '23	May 26 '23											
363	WWO542 design submis	ssion for Street Fire Hydra	ant, potable, flushing, o	cleansing & irrigation wa	ter 180 days	May 1 '22	Oct 27 '22				_		+					
264	supply  Construction of roadwo	- ul			150 days	Fab 42 122	11 42 122			_				Щ				
364	Construction of roadwo				150 days	Feb 13 '23	Jul 12 '23							<b>T</b> ])]				
365					90 days	Feb 13 '23	May 13 '23											
366		l at East side (189m)	00. \		63 days	Feb 13 '23	Apr 16 '23											
367		fence wall at West side (1	.98m)		66 days	Feb 13 '23	Apr 19 '23											
368	• • • • • • • • • • • • • • • • • • • •	l at North side (44m)	-		15 days	Feb 13 '23	Feb 27 '23											
369		fence wall at South side (3	37m)		13 days	Feb 28 '23	Mar 12 '23											
370	Type-4 fence wall	· · · · · · · · · · · · · · · · · · ·			10 days	Mar 13 '23	Mar 22 '23											
371	Installation of Gat				7 days	Mar 23 '23	Mar 29 '23											
372	Fabrication of stee	elworks			66 days	Feb 13 '23	Apr 19 '23											
373	Installation of wal	II finishes and steelworks			24 days	Apr 20 '23	May 13 '23											
374	Construction of unde	erground utilities			60 days	May 14 '23	Jul 12 '23							<del> </del>				
375	Laying of pipe wo	ork system outside ReWPS	and HCF		30 days	May 14 '23	Jun 12 '23						•					
376	Construction of ch	hambers and water refilli	ng station		45 days	May 14 '23	Jun 27 '23							<b>-</b>				
377	Installation of sur	ge vessels			15 days	Jun 28 '23	Jul 12 '23											
378		inderground utilities (drai	inage, irrigation system	n, cable ducting, CLP cab	le 60 days	May 14 '23	Jul 12 '23						•					
379	ducts & drawpits,  Construction of EVA roa	, street fire hydrant, etc)			20 dava	Jul 13 '23	Aug 11 122											
380		I pavement near ReWPS			30 days 15 days	Jul 13 '23 Jul 13 '23	<b>Aug 11 '23</b> Jul 27 '23			-								
381	Construction of road				15 days	Jul 13 23 Jul 28 '23	Aug 11 '23			-								
382	Installation of architect				120 days	Jun 22 '23	Oct 19 '23			-				<del>\</del>				
383		ectural works ectural works near ReWP:	ς		60 days	Jun 22 '23 Jun 22 '23	Aug 20 '23			-								
505	installation of archite	ectural works near KeWP:	<b>J</b>		ou days	Juli 22 23	Aug 20 23											
		Task		Inactive Task		Manual Sumn	nary Rollup 📥		Externa	al Milestone	<b>♦</b>		Manual Pro	gress				
rajeat. 21	WSD20 Programme	Split		Inactive Milestone		Manual Sumn	nary		Deadlin	ne	•							
		Milestone	<b>♦</b>	Inactive Summary		■ Start-only	Е		Critical	1								
ate: Jun	ZO ZZ	Summary		Manual Task		Finish-only	3		Critical									
		Project Summary		Duration-only		External Task			Progres									
		1 10 jool Suillild y		Duranon-Omy		LAWIIII I dSK			riogies	30		_						

)  T	isk Name			Duration	Start	Finish	TRA	Notes	02		2022	03   04	2023 01 0	2   03	04 01 C	2 Q3 Q4	2025		026 01   02   0
384	Erection of worki	ng platform		7 days	Jun 22 '23	Jun 28 '23			رک	Q0   Q7	Q. Q.	43 44		Ь	<u> </u>	<u>-                                    </u>	<u> </u>	<u>~~   ~ ~   ~ </u>	<u> </u>
385	Laying of artificial	granite tile at external wall		30 days	Jun 29 '23	Jul 28 '23													
386	Installation of ste	elworks		30 days	Jul 15 '23	Aug 13 '23													
387	Installation of cla	dding		14 days	Aug 7 '23	Aug 20 '23													
388		ectural works near HCF		60 days	Aug 21 '23	Oct 19 '23								*	ı				
389	Erection of worki	<del></del>		7 days	Aug 21 '23	Aug 27 '23													
390	· -	granite tile at external wall		30 days	Aug 28 '23	Sep 26 '23									_				
391	Installation of ste			30 days	Sep 13 '23	Oct 12 '23													
392	Installation of cla	lding		14 days	Oct 6 '23	Oct 19 '23													
393	Landscape works			160 days	Jun 22 '23	Nov 28 '23								•					
394	Landscape works at roo			60 days	Jun 22 '23	Aug 20 '23													
395		site timber decking with pedestal		15 days	Jun 22 '23	Jul 6 '23													
396		nite floor tile / paver block		30 days	Jul 7 '23	Aug 5 '23													
397	Construciton of roof			15 days	Aug 6 '23	Aug 20 '23								1					
398	Landscape works within	SWHWRP		100 days	Aug 21 '23	Nov 28 '23									-				
399																			
100	E&M Works of SWHWRP			811 days	Sep 10 '21	Nov 29 '23							<del>       </del>		_				
401	Design and Submission	_		472 days	Sep 10 '21	Dec 25 '22													
402		ptance of Surge Analysis Report		272 days	Oct 12 '21	Jul 10 '22													
403		ptance of Reclaimed Water Main Pumps		306 days	Sep 10 '21	Jul 12 '22			_										
404		ptance of Surge Vessels and Air Compressors		115 days	Jun 30 '22	Oct 22 '22													
405		ptance of Penstock & Stoplog		247 days	Nov 1 '21	Jul 5 '22													
406		ptance of Chemical Dosing System & Static In-lin	e Mixer	212 days	Dec 6 '21	Jul 5 '22				_		H							
407		ptance of Air Blower and Air Diffuser		56 days	Jun 30 '22	Aug 24 '22			_										
408		ptance of Lifting Appliances		42 days	May 24 '22	Jul 4 '22						H							
409		ptance of Minor Mechanical Equipment		63 days	Jun 30 '22	Aug 31 '22													
410		ptance of LV switchboard		52 days	Jun 20 '22	Aug 10 '22					1								
411	Submission and acce			72 days	Jun 30 '22	Sep 9 '22													
412		ptance of Instrumenation & Water Monitoring E	quipment	156 days	Jan 17 '22	Jun 21 '22													
413		ptance of Misc. Electrical Items		162 days	Jan 17 '22	Jun 27 '22													
414		ptance of Fire Services Equipment		175 days	Jul 4 '22	Dec 25 '22			_										
415		ptance of MVAC Equipment		129 days	Jun 20 '22	Oct 26 '22			_		•								
416		ptance of Plumbing & Drainage Equipment		38 days	Jul 2 '22	Aug 8 '22			_										
417		ptance of General Arrangement Drawing		157 days	Jan 17 '22	Jun 22 '22			_										
418		ptance of Civil Requirement Drawing		121 days	Feb 15 '22	Jun 15 '22					-								
419		ptance of method statement for E&M installatio	n works	55 days	Nov 1 '22	Dec 25 '22													
420	CSD, CBWD coordina			157 days	Jan 17 '22	Jun 22 '22													
421	Procurement and Deliv			327 days	Jun 22 '22	May 14 '23			_		P		<del>                                     </del>						
422	Reclaimed Water Ma			270 days	Jul 13 '22	Apr 8 '23													
423	Surge Vessels and Air	Compressors		179 days	Oct 23 '22	Apr 19 '23													
424	Penstock & Stoplog			264 days	Jul 6 '22	Mar 26 '23			_										
425	Chemical Dosing Syst	em		206 days	Jul 6 '22	Jan 27 '23													
426	Static In-line Mixer	ffusor		265 days	Jul 6 '22	Mar 27 '23			_										
427	Air Blower and Air Di	muser		144 days	Aug 25 '22	Jan 15 '23						<b>#</b>							
428	Lifting Appliances			168 days	Jul 5 '22	Dec 19 '22			_										
429	Sump Pumps			159 days	Sep 1 '22	Feb 6 '23													
430	Pipework and Valves			164 days	Sep 1 '22	Feb 11 '23			-										
431	LV switchboard			277 days	Aug 11 '22	May 14 '23													
		Task	Inactive Task		Manual Summ	ary Rollun ——		Externa	ıl Milesto	ne ♦		1	Manual Pro	ogress					
			Inactive Milestone		Manual Summ			Deadlin				1	raminai FIC	/ETCOO		_			
	3WSD20 Programme				Start-only	ш.у Г		Critical		_									
Oate: Ju	n 28 '22		Inactive Summary  Manual Tack		-														
			Manual Task		Finish-only			Critical											
		Project Summary	Duration-only		External Tasks			Progres	S										

) Task N	Name				Duration	Start	Finish	TRA	Notes	Q2   (	202 23   Q4   Q1			2023 Q1 Q2	2 03 0	2024   Q4   Q1   Q2   Q3   Q4   Q1   Q2   Q3   Q4   Q1   Q2
432	DCS				205 days	Sep 10 '22	Apr 2 '23				\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		- 41			45 47 42 42
433	Instrumenation and	Water Monitoring Equi	pment		296 days	Jun 22 '22	Apr 13 '23									
134	Misc. Electrical Items	(PV Panel, Earthing &	Cables, etc )		216 days	Jun 28 '22	Jan 29 '23									
135	Fire Services Equipm	ent			69 days	Oct 27 '22	Jan 3 '23						<b>&gt;</b>			
136	MVAC Equipment				123 days	Aug 28 '22	Dec 28 '22									
137	Plumbing & Drainage	Equipment			76 days	Aug 9 '22	Oct 23 '22									
138	Misc. Electrical Items	(Cables, Cable Contain	nment, Lightings )		178 days	Jun 28 '22	Dec 22 '22						-			
39	Installation Works				135 days	Apr 14 '23	Aug 26 '23								<del>       </del>	
40	Installation FS Equipr	ment			110 days	Apr 14 '23	Aug 1 '23									
41	Installation of MVAC	Equipment			100 days	Apr 14 '23	Jul 22 '23									
142	Installation of BS Equ	ipment			120 days	Apr 14 '23	Aug 11 '23									
43	Installation of Lifting	Appliance (12 nos.)			60 days	Apr 14 '23	Jun 12 '23								h III	
44	Installation of Reclain	med Water Pumps (6 N	os.)		75 days	Jun 13 '23	Aug 26 '23									
145	Installation of pensto	ocks (10 nos.) & Stoplog	gs (2 nos.)		80 days	Apr 14 '23	Jul 2 '23								<b>-</b>	
46	Installation of Surge	Vessel (4 Nos.) & Air Co	ompressor (4 Nos.)		30 days	Apr 20 '23	May 19 '23							¥		
147		wer (2 Nos.) & Air Diffu			30 days	Apr 14 '23	May 13 '23									
48	Installation of tanks (	14 nos.) & Chemical Pu	ımps (12 nos.)		30 days	May 27 '23	Jun 25 '23									
49		orks (DI, Chemical pipe,			45 days	Apr 17 '23	May 31 '23									
150	Installation of Cablin				90 days	Apr 14 '23	Jul 12 '23							\		
151		mentation and Monitor	ring Stations		60 days	Apr 14 '23	Jun 12 '23									
152		stem (CCTV & Access C			60 days	Apr 14 '23	Jun 12 '23								•	
453		ing & Drainage Equipm			90 days	Apr 14 '23	Jul 12 '23									
54	Installation of PV Par				45 days	Apr 14 '23	May 28 '23									
55	FS / DG Inspection Rela	ted Items			435 days	Jul 16 '22	Sep 23 '23									
56	VAC Desgin Submissi				60 days	Aug 1 '22	Sep 29 '22									
57	FS related statutory				60 days	Aug 1 '22	Sep 29 '22									
158		stallation (Integrated Te	est & Rehearsal)		14 days	Aug 12 '23	Aug 25 '23									
59	Submission of FS 314				14 days	Aug 26 '23	Sep 8 '23									
460	Target FS Inpsection				1 day	Sep 9 '23	Sep 9 '23									
161		letter (Form FS172 Fire	Certificate		14 days	Sep 10 '23	Sep 23 '23									
162	DG Design Submissio		. certificate)		30 days	Jul 16 '22	Aug 14 '22					¥			_    「	
163	DG Design Submission  DG Inspection	11 (0 1 3 0			30 days	Jul 13 '23	Aug 11 '23			-					<del>   </del>	
164	Obtain DG License				1 day	Aug 12 '23	Aug 11 23 Aug 12 '23									
165	Power Energization Rel	atad Itams			482 days	May 1 '22	Aug 12 23									
166	CLP Room Ready for				1 day	Jan 7 '23	Jan 7 '23			_		'		<del> </del>	<b>"</b>	
167		BS installation (ReWPS	1		1 day	Apr 14 '23	Apr 14 '23			_						
			I				•			_				<b>↓</b>		
68	Installation of BS Equ				98 days	Jan 8 '23	Apr 15 '23			_				_		
169 170	Installation of BS Equ				60 days	Apr 15 '23	Jun 13 '23			_				_		
170	CLP meter applicatio				120 days	Oct 24 '22	Feb 20 '23			_		_				
171	Cable laying by CLP in				21 days	May 1 '22	May 21 '22			_				,	<u>                                     </u>	
472	Lead time for CLP ins		MDC) CLD De em/LICE\ -!	unit and cases into the the	60 days	Jun 14 '23	Aug 12 '23			_						
473	CLP's Inspection for T ducts	ranstormer Room(ReV	VPS), CLP Room(HCF), drav	v pit and accsociated cable	e 21 days	May 29 '23	Jun 18 '23									
474	CLP to install Transfo	rmers and Cahling			7 days	Aug 13 '23	Aug 19 '23								#	
175		rom CLP Transformer t	o I VSB		3 days	Aug 13 23 Aug 20 '23	Aug 13 23 Aug 22 '23									
176		rom LVSB to All Equipm			3 days	Aug 23 '23	Aug 25 '23								7	
177	Preliminary Test of Equ		Tent		35 days	Aug 23 23 Aug 27 '23	Sep 30 '23									
178		ent/System with SOR			14 days	Aug 27 '23	Sep 9 '23									
79	Trial Run of Equipme				7 days	Sep 10 '23	Sep 9 23			-						
,,,,	That Nati of Equipme				, uays											<u>l</u>
		Task		Inactive Task		Manual Summ	ary Rollup		Exten	nal Mileston	e 💠		N	Ianual Pro	gress	
roject 3W	SD20 Programme	Split	]	Inactive Milestone		Manual Summ	nary		Deadl	line	+					
ate: Jun 28		Milestone	<b>•</b>	Inactive Summary		Start-only	E		Critic	al						
acc. Juil 20	. <i></i>	Summary		Manual Task		Finish-only	3		Critic	al Split						
		Project Summary		Duration-only		External Tasks	8		Progr							



Task Nam	ne				Duration	Start	Finish	TRA	Notes	02 0	2022 Q3   Q4   Q1   Q	2 03 0	2023 Q4 Q1 Q2 Q3	024   2025 Q1   Q2   Q3   Q4   Q1   Q2   Q3   Q4	2026 Q1   Q2
528	Backfilling san	d/aggregate, concurre	nt bend block		7 days	Aug 23 '22	Aug 29 '22				20   4.   42   4	,_ J	.   42   42   40	<u></u>	
529	Reinstatemen	t			1 day	Aug 30 '22	Aug 30 '22								
530	CH390 - CH420 (3	30m)			30 days	Aug 31 '22	Sep 29 '22					<b>*</b>			
531	TTA establishr				1 day	Aug 31 '22	Aug 31 '22					<u></u>			
532		excavation and dispos			2 days	Sep 1 '22	Sep 2 '22								
33		n , laying sheetpile and	disposal		14 days	Sep 3 '22	Sep 16 '22								
534	Treatment of				2 days	Sep 17 '22	Sep 18 '22					1 1			
535	Pipe laying D.I				3 days	Sep 19 '22	Sep 21 '22					1 5			
36		d/aggregate, concurre	nt bend block		7 days	Sep 22 '22	Sep 28 '22					1 5			
537	Reinstatemen				1 day	Sep 29 '22	Sep 29 '22					l I			
538	CH360 - CH390 (3				30 days	Sep 30 '22	Oct 29 '22					Ť			
539	TTA establishr				1 day	Sep 30 '22	Sep 30 '22					7			
540		excavation and dispos			2 days	Oct 1 '22	Oct 2 '22					5			
541		n , laying sheetpile and	disposal		14 days	Oct 3 '22	Oct 16 '22								
542	Treatment of				2 days	Oct 17 '22	Oct 18 '22					5			
543	Pipe laying D.I				3 days	Oct 19 '22	Oct 21 '22					5	1		
544		d/aggregate, concurre	nt bend block		7 days	Oct 22 '22	Oct 28 '22								
545	Reinstatemen				1 day	Oct 29 '22	Oct 29 '22						Ţ		
546	CH290 - CH360 (7	·			63 days	Oct 30 '22	Dec 31 '22					}			
547	TTA establishr				2 days	Oct 30 '22	Oct 31 '22					F	1		
548	Hard material	excavation and dispos	al		7 days	Nov 1 '22	Nov 7 '22								
549	Soil excavation	n , laying sheetpile and	l disposal		21 days	Nov 8 '22	Nov 28 '22					i	<u>*</u> _		
550	Treatment of	bedding			7 days	Nov 29 '22	Dec 5 '22						<u> </u>		
551	Pipe laying D.I				10 days	Dec 6 '22	Dec 15 '22						5		
552	Backfilling san	d/aggregate, concurre	nt bend block		14 days	Dec 16 '22	Dec 29 '22								
553	Reinstatemen	t			2 days	Dec 30 '22	Dec 31 '22								
554	CH250 - CH290 (4	10m)			30 days	Jan 1 '23	Jan 30 '23						<b>A</b>		
555	TTA establishr	ment			1 day	Jan 1 '23	Jan 1 '23						<b>h</b>		
556	Hard material	excavation and dispos	al		2 days	Jan 2 '23	Jan 3 '23						5		
557	Soil excavation	n , laying sheetpile and	disposal		14 days	Jan 4 '23	Jan 17 '23								
558	Treatment of	bedding			2 days	Jan 18 '23	Jan 19 '23						5		
559	Pipe laying D.I				3 days	Jan 20 '23	Jan 22 '23						, and the second		
560	Backfilling san	d/aggregate, concurre	nt bend block		7 days	Jan 23 '23	Jan 29 '23						<b>F</b>		
561	Reinstatemen	t			1 day	Jan 30 '23	Jan 30 '23								
562	CH210 - CH250 (4	10m)			30 days	Jan 31 '23	Mar 1 '23						<b>X</b>		
563	TTA establishr	ment			1 day	Jan 31 '23	Jan 31 '23						5		
564	Hard material	excavation and dispos	al		2 days	Feb 1 '23	Feb 2 '23						7		
565	Soil excavation	n , laying sheetpile and	disposal		14 days	Feb 3 '23	Feb 16 '23						<u> </u>		
566	Treatment of	bedding			2 days	Feb 17 '23	Feb 18 '23						5		
567	Pipe laying D.I				3 days	Feb 19 '23	Feb 21 '23						5		
568	Backfilling san	d/aggregate, concurre	nt bend block		7 days	Feb 22 '23	Feb 28 '23						Ħ		
569	Reinstatemen	t			1 day	Mar 1 '23	Mar 1 '23						Ť		
570	CH150 - CH210 (6	50m)			62 days	Mar 2 '23	May 2 '23						<b>—</b>		
571	TTA establishr	ment			1 day	Mar 2 '23	Mar 2 '23						<b>h</b>		
572	Hard material	excavation and dispos	al		7 days	Mar 3 '23	Mar 9 '23						<b>K</b>		
573	Soil excavation	n , laying sheetpile and	disposal		21 days	Mar 10 '23	Mar 30 '23						*		
574	Treatment of	bedding			7 days	Mar 31 '23	Apr 6 '23						<b>     </b>		
575	Pipe laying D.I				10 days	Apr 7 '23	Apr 16 '23						, in the second		
		Task		Inactive Task		Manual Summ	ary Rollup 🚃		Externa	al Milestone	e �		Manual Progress	 	
	20 D	Split				Manual Summ			Deadlin						
Project: 3WSD2		Milestone	•	Inactive Summary		Start-only			Critical		•				
Pate: Jun 28 '22	2	Summary		Manual Task		Finish-only			Critical						
		Project Summary		Duration-only		External Tasks			Progres	SS					

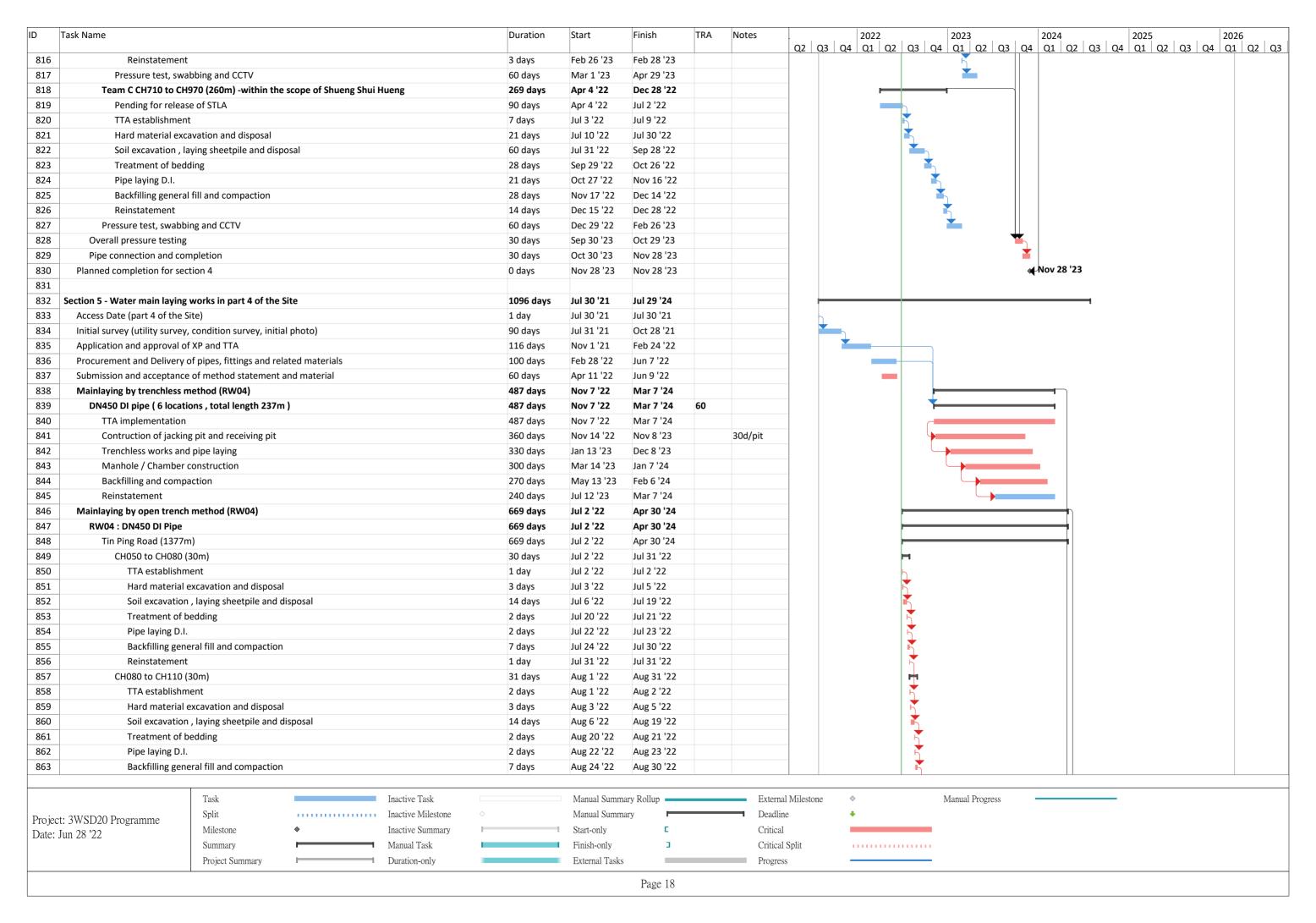
Task Name	e				Duration	Start	Finish	TRA	Notes	Q2	Q3   Q4   Q1	2   Q2   O	2023 3   Q4   Q1   Q2	Q3   Q4	2024   2025   2026 4   Q1   Q2   Q3   Q4   Q1   Q2   Q3   Q4   Q1   Q
576	Backfilling san	d/aggregate, concurrent l	bend block		14 days	Apr 17 '23	Apr 30 '23				4- 1 4- 1 4-	1 2 1 2			
577	Reinstatemen	t			2 days	May 1 '23	May 2 '23						Ť		
578	CH100 - CH150 (5	50m)			60 days	May 3 '23	Jul 1 '23						<u>*</u>		
579	TTA establishr	ment			1 day	May 3 '23	May 3 '23						h		
580	Removal of ex	isting railing			7 days	May 4 '23	May 10 '23						5		
581	Installation of	mild steel pipe			14 days	May 11 '23	May 24 '23						*		
582	Construction of	of thrust block			24 days	May 25 '23	Jun 17 '23						*		
583	Reinstatemen	t of railing			14 days	Jun 18 '23	Jul 1 '23						*		
584	CH000 - CH100 (1	100m)			30 days	Jul 2 '23	Jul 31 '23						2	<b>f</b> n	
585	TTA establishr	ment			1 day	Jul 2 '23	Jul 2 '23						Ь		
586	Hard material	excavation and disposal			2 days	Jul 3 '23	Jul 4 '23						F.		
587		n , laying sheetpile and dis	sposal		14 days	Jul 5 '23	Jul 18 '23								
588	Treatment of				2 days	Jul 19 '23	Jul 20 '23							<del> </del>	
589	Pipe laying D.I				3 days	Jul 21 '23	Jul 23 '23			_				#	
590		·· id/aggregate, concurrent l	hand black		7 days	Jul 24 '23	Jul 30 '23							#	
591	Reinstatemen		Deria Dioek		1 day	Jul 24 23 Jul 31 '23	Jul 30 23 Jul 31 '23							1	
592	Pressure test, swa					Aug 1 '23	Sep 29 '23							<u></u>	
					60 days										
	Team B : CH550 - CH				465 days	Apr 20 '22	Jul 28 '23							1 ]	
594	CH970 - CH1010	•			72 days	Apr 20 '22	Jun 30 '22								
595	TTA establishr				3 days	Apr 20 '22	Apr 22 '22					<b>1</b>			
596		excavation and disposal			4 days	Apr 23 '22	Apr 26 '22					5			
597		n , laying sheetpile and dis	sposal		14 days	Apr 27 '22	May 10 '22					511			
598	Treatment of				3 days	May 11 '22	May 13 '22					5			
599	Pipe laying D.I				7 days	May 14 '22	May 20 '22					5			
500	Backfilling san	id/aggregate			40 days	May 21 '22	Jun 29 '22								
601	Reinstatemen	t			1 day	Jun 30 '22	Jun 30 '22								
602	CH910 - CH970 (6	50m)			31 days	Jul 1 '22	Jul 31 '22					<b>*</b>			
603	TTA establishr	ment			1 day	Jul 1 '22	Jul 1 '22					h			
604	Hard material	excavation and disposal			2 days	Jul 2 '22	Jul 3 '22					K			
605	Soil excavation	n , laying sheetpile and dis	sposal		10 days	Jul 4 '22	Jul 13 '22					K			
606	Treatment of	bedding			3 days	Jul 14 '22	Jul 16 '22								
607	Pipe laying D.I	l.			7 days	Jul 17 '22	Jul 23 '22								
608	Backfilling san	d/aggregate, concurrent l	bend block		7 days	Jul 24 '22	Jul 30 '22								
609	Reinstatemen				1 day	Jul 31 '22	Jul 31 '22								
610	CH850 - CH910 (6				46 days	Aug 1 '22	Sep 15 '22					2	<u> </u>		
611	TTA establishr				3 days	Aug 1 '22	Aug 3 '22								
612		excavation and disposal (	CH880 - CH910)		2 days	Aug 4 '22	Aug 5 '22								
613		n, laying sheetpile and dis	·		7 days	Aug 6 '22	Aug 12 '22			_					
614		bedding (CH880 - CH910)			3 days	Aug 0 22 Aug 13 '22	Aug 12 22 Aug 15 '22								
615		I. (CH880 - CH910)			2 days	Aug 15 22 Aug 16 '22	Aug 13 22 Aug 17 '22						<del>]</del>		
616		•	bend block (CH880 - CH910)		7 days	Aug 16 22 Aug 18 '22	Aug 17 22 Aug 24 '22						<b>}</b>		
617		excavation and disposal (	•			Aug 18 22 Aug 25 '22	Aug 24 22 Aug 26 '22						<b>}</b>		
					2 days		Sep 2 '22								
618		n, laying sheetpile and dis			7 days	Aug 27 '22									
619		bedding (CH850 - CH880)			3 days	Sep 3 '22	Sep 5 '22						$\supset$		
620		I. (CH850 - CH880)	hand black for one of the co		2 days	Sep 6 '22	Sep 7 '22						<b>\</b>		
621			bend block (CH850 - CH880)		7 days	Sep 8 '22	Sep 14 '22						1		
522	Reinstatemen				1 day	Sep 15 '22	Sep 15 '22						<b>1</b>		
23	CH750 - CH850 (1	100m)			52 days	Sep 16 '22	Nov 6 '22						*		
		Task	Inactive	Task		Manual Summ	ary Rollup 📥		Externa	al Milesto	ne 💠		Manual Progres	S	
Project 2WCDO	O Drogramma	Split	Inactive	Milestone		Manual Summ	ary		Deadlin	ne	•				
Project: 3WSD2		Milestone		Summary		Start-only	Е		Critica						
Pate: Jun 28 '22		Summary	Manual			Finish-only	3		Critica						
		Project Summary	Duratio			External Tasks			Progres						
		1 TOJECT Summed y	- Dulatio	OHLY		LARGINAL LASKS			riugie	00					

Task Name					Duration	Start	Finish	TRA	Notes	Q2   Q3	2022 3   Q4   Q1   Q2	Q3   O4	2023 1 Q1 Q2 Q3	2024   2025 Q1   Q2   Q3   Q4   Q1   Q2   Q3   Q4	2026 4 Q1 Q2
524	TTA establish	nent			2 days	Sep 16 '22	Sep 17 '22					Ь Т	, , , , , , , , , ,		, , , , , , , ,
25	Hard material	excavation and dispos	sal (CH800 - CH850)		3 days	Sep 18 '22	Sep 20 '22								
26	Soil excavatio	n , laying sheetpile and	d disposal (CH800 - CH85	0)	9 days	Sep 21 '22	Sep 29 '22								
27	Treatment of	bedding (CH800 - CH8	50)		3 days	Sep 30 '22	Oct 2 '22					5			
28		I. (CH800 - CH850)			2 days	Oct 3 '22	Oct 4 '22					5			
29	Backfilling sar	id/aggregate, concurre	ent bend block		7 days	Oct 5 '22	Oct 11 '22								
30	Hard material	excavation and dispos	sal (CH750 - CH800)		3 days	Oct 12 '22	Oct 14 '22								
31	Soil excavatio	n , laying sheetpile and	d disposal (CH750 - CH80	0)	9 days	Oct 15 '22	Oct 23 '22								
32	Treatment of	bedding (CH750 - CH8	00)		3 days	Oct 24 '22	Oct 26 '22								
33		I. (CH750 - CH800)			2 days	Oct 27 '22	Oct 28 '22								
534		id/aggregate, concurre	ent bend block		7 days	Oct 29 '22	Nov 4 '22						•		
535	Reinstatemen				2 days	Nov 5 '22	Nov 6 '22					+	•		
36	CH650 - CH750 (				51 days	Nov 7 '22	Dec 27 '22					<u> </u>			
37	TTA establish				2 days	Nov 7 '22	Nov 8 '22								
38		excavation and dispos	sal (CH700 - CH750)		2 days	Nov 9 '22	Nov 10 '22			-		]	-		
339			d disposal (CH700 - CH75	0)	9 days	Nov 11 '22	Nov 10 22			-		]			
40		bedding (CH700 - CH7		~,	3 days	Nov 20 '22	Nov 22 '22			-			<u> </u>		
41		i. (CH700 - CH750)	JO <sub>1</sub>		7 days	Nov 20 22 Nov 23 '22	Nov 22 22 Nov 29 '22			-			<u> </u>		
542			ent bend block (CH700 - 0	`H750\	2 days	Nov 30 '22	Dec 1 '22			-			<del>}</del>		
543		t (CH700 - CH750)	יויי אבוומ אוטנע (כנוו/טט - נ	31730)	1 day	Dec 2 '22	Dec 1 22 Dec 2 '22			-			<del>}</del>		
544		excavation and dispos	-al (CUEEO CU700)		2 days	Dec 2 22	Dec 2 22 Dec 4 '22								
				n\		Dec 5 '22							$\supset$		
345			d disposal (CH650 - CH70	U)	9 days		Dec 13 '22								
46		bedding (CH650 - CH70	00)		3 days	Dec 14 '22	Dec 16 '22								
547		I. (CH650 - CH700)		211700)	7 days	Dec 17 '22	Dec 23 '22						1		
548			ent bend block (CH650 - C	CH /00)	2 days	Dec 24 '22	Dec 25 '22						1		
549	Reinstatemen				2 days	Dec 26 '22	Dec 27 '22						1		
550	CH550 - CH650 (	•			75 days	Dec 28 '22	Mar 12 '23								
551	TTA establish				2 days	Dec 28 '22	Dec 29 '22						<u> </u>		
552		excavation and dispos			7 days	Dec 30 '22	Jan 5 '23						5		
553			d disposal (CH600 - CH65	0)	3 days	Jan 6 '23	Jan 8 '23						5		
554		bedding (CH600 - CH6	50)		7 days	Jan 9 '23	Jan 15 '23						5		
555		I. (CH600 - CH650)			2 days	Jan 16 '23	Jan 17 '23						5		
556	Backfilling sar	id/aggregate, concurre	ent bend block (CH600 - 0	CH650)	1 day	Jan 18 '23	Jan 18 '23						5		
557	Reinstatemen	t (CH600 - CH650)			1 day	Jan 19 '23	Jan 19 '23						5		
558	Hard material	excavation and dispos	sal (CH550 - CH600)		2 days	Jan 20 '23	Jan 21 '23						5		
59	Soil excavatio	n , laying sheetpile and	d disposal (CH550 - CH60	0)	14 days	Jan 22 '23	Feb 4 '23						5		
660	Treatment of	bedding (CH550 - CH6	00)		7 days	Feb 5 '23	Feb 11 '23						5		
661	Pipe laying D.	I. (CH550 - CH600)			14 days	Feb 12 '23	Feb 25 '23						5		
662	Backfilling sar	id/aggregate, concurre	ent bend block (CH550 - 0	CH600)	14 days	Feb 26 '23	Mar 11 '23						K		
663	Reinstatemen	t			1 day	Mar 12 '23	Mar 12 '23						<b>†</b>		
664	CH1010 - CH104	0 (30m)			30 days	Mar 13 '23	Apr 11 '23						lacktriangle		
665	TTA establish	ment			1 day	Mar 13 '23	Mar 13 '23						5		
666	Hard material	excavation and dispos	sal		2 days	Mar 14 '23	Mar 15 '23						*		
667	Soil excavatio	n , laying sheetpile and	d disposal		14 days	Mar 16 '23	Mar 29 '23						*		
668	Treatment of				3 days	Mar 30 '23	Apr 1 '23						H		
569	Pipe laying D.	·			7 days	Apr 2 '23	Apr 8 '23						Ħ		
570		id/aggregate, concurre	ent bend block		2 days	Apr 9 '23	Apr 10 '23						<b>†</b>		
571	Reinstatemen				1 day	Apr 11 '23	Apr 11 '23						<b>†</b>		
I		Task		Inactive Task	, ,	Manual Summ		1	Extern	al Milestone	<b>♦</b>		Manual Progress	 	
roject. 2000000	Drogramma	Split		Inactive Milestone		Manual Summ	nary		Deadli	ne	+				
roject: 3WSD20 ate: Jun 28 '22	riogramme	Milestone	<b>♦</b>	Inactive Summary		Start-only	Е		Critica	1					
raic. Juli 20 22		Summary		Manual Task		Finish-only	3		Critica						
		Project Summary		Duration-only		External Tasks			Progre						

672	CH1040 - CH1090								Q2   1	Q3   Q7   U1	1 02		5   U4	4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2
	CH1040 - CH1090	) (50m)			48 days	Apr 12 '23	May 29 '23			4-14-4-	- 1 - 1			
573	TTA establishn	nent			1 day	Apr 12 '23	Apr 12 '23					5		
574	Hard material	excavation and disposa	al		2 days	Apr 13 '23	Apr 14 '23					5		
575	Soil excavation	n , laying sheetpile and	disposal		14 days	Apr 15 '23	Apr 28 '23					*		
576	Treatment of I	bedding			7 days	Apr 29 '23	May 5 '23					5		
577	Pipe laying D.I				21 days	May 6 '23	May 26 '23					<b>*</b>		
578	Backfilling san	d/aggregate, concurrer	nt bend block		2 days	May 27 '23	May 28 '23					F		
579	Reinstatemen	t			1 day	May 29 '23	May 29 '23							
80	Pressure test, swa	abbing and CCTV			60 days	May 30 '23	Jul 28 '23					*		
81	Overall pressure test				30 days	Sep 30 '23	Oct 29 '23						*	
582	Pipe connection and co	mpletion			30 days	Oct 30 '23	Nov 28 '23							
583	RW43: DN150 DI pipe	- 1144m			600 days	Feb 7 '22	Sep 29 '23			-			_	
684	Team A CH430 to Ch	1710 & CH970 to CH114	44 (454m)		597 days	Feb 10 '22	Sep 29 '23			-			<b>—</b> )	
85	Team A CH640 to	CH710 (20m)			140 days	Feb 10 '22	Jun 29 '22			-				
586	Pending for IIE	3 of pipe fittings			99 days	Feb 10 '22	May 19 '22				<u> </u>			
587	TTA establishn	nent			2 days	May 20 '22	May 21 '22				+			
588	Hard material	excavation and disposa	al		7 days	May 22 '22	May 28 '22				K			
589		n , laying sheetpile and			14 days	May 29 '22	Jun 11 '22							
690	Treatment of I				3 days	Jun 12 '22	Jun 14 '22				H			
591	Pipe laying D.I				7 days	Jun 15 '22	Jun 21 '22							
592		eral fill and compaction	n		5 days	Jun 22 '22	Jun 26 '22							
593	Reinstatement				3 days	Jun 27 '22	Jun 29 '22					<b>+</b>		
594	Team A CH430 to	CH460 (30m)			30 days	Jun 30 '22	Jul 29 '22					1		
595	TTA establishn				1 day	Jun 30 '22	Jun 30 '22					<b>+</b>		
596		excavation and disposa	al		2 days	Jul 1 '22	Jul 2 '22							
697		n , laying sheetpile and			14 days	Jul 3 '22	Jul 16 '22							
698	Treatment of I				2 days	Jul 17 '22	Jul 18 '22							
699	Pipe laying D.I				3 days	Jul 19 '22	Jul 21 '22					<del>\</del>		
700		eral fill and compaction	n		7 days	Jul 22 '22	Jul 28 '22							
701	Reinstatemen		<u> </u>		1 day	Jul 29 '22	Jul 29 '22							
702	Team A CH460 to				30 days	Jul 30 '22	Aug 28 '22					H		
703	TTA establishn				1 day	Jul 30 '22	Jul 30 '22					<b>+</b>		
704		excavation and disposa	al		2 days	Jul 31 '22	Aug 1 '22					<del>}</del>		
705		n, laying sheetpile and			14 days	Aug 2 '22	Aug 15 '22					<del>}</del>		
706	Treatment of I		шэрози		2 days	Aug 16 '22	Aug 17 '22					<b>-</b>		
707	Pipe laying D.I				3 days	Aug 10 22 Aug 18 '22	Aug 17 22 Aug 20 '22					<b>→</b>		
707		eral fill and compaction	<u> </u>			Aug 16 22 Aug 21 '22	Aug 20 22 Aug 27 '22					<b>→</b>		
708	Reinstatemen				7 days	Aug 21 22 Aug 28 '22			-			<b>}</b>		
710	Team A CH490 to				1 day 30 days	Aug 28 22 Aug 29 '22	Aug 28 '22 Sep 27 '22		-					
710									_			<b>#</b>		
	TTA establishm		N.		1 day	Aug 29 '22	Aug 29 '22		-			<b>\}</b>		
712		excavation and disposa			2 days	Aug 30 '22	Aug 31 '22		-			<b>-</b>		
713		n , laying sheetpile and	uisposai		14 days	Sep 1 '22	Sep 14 '22		-			•		
714	Treatment of I				2 days	Sep 15 '22	Sep 16 '22		_			<b>\</b>		
715	Pipe laying D.I		_		3 days	Sep 17 '22	Sep 19 '22		_			<b>\_</b>		
716		eral fill and compaction	n		7 days	Sep 20 '22	Sep 26 '22		_			<b>5</b>		
717	Reinstatemen		D 144 - "		1 day	Sep 27 '22	Sep 27 '22		_			5		
718		CH640 (120m) (crossin	ng Po Wan Road)		91 days	Sep 28 '22	Dec 27 '22		_					
719	TTA establishn	nent			7 days	Sep 28 '22	Oct 4 '22					<u> </u>		
		Task		Inactive Task		Manual Summ	ary Rollup ——	Externa	al Mileston	ie 💠		Manual Progress		
rainate 277	ICD20 Duo cuiore :	Split				Manual Summ		Deadli		+				
	/SD20 Programme	Milestone	<b>♦</b>	Inactive Summary		Start-only	E	Critica						
ate: Jun 28	ð 22	Summary		Manual Task		Finish-only	3	Critica						
		Project Summary		Duration-only		External Tasks		Progre						

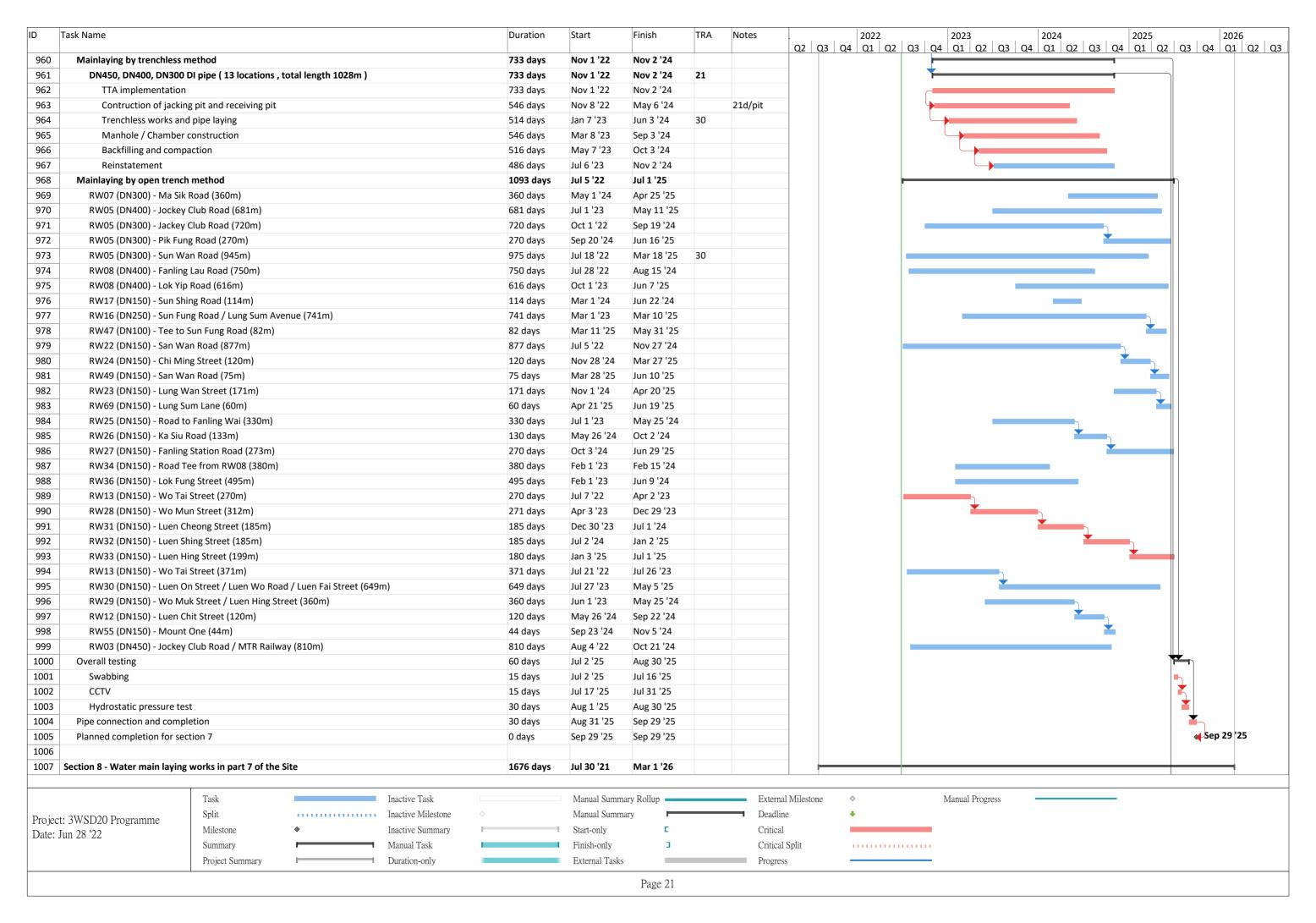
Task Na	me				Duration	Start	Finish	TRA	Notes	02   0	2022 23   Q4   Q1		2023   Q4   Q1   Q2   Q3		2024   2025   2026   Q1   Q2   Q3   Q4   Q1   Q2   Q3   Q4   Q1
720	Hard material	excavation and disposa	al		14 days	Oct 5 '22	Oct 18 '22			Q2   C	20   Q1   Q2	QE QS	<u> </u>		42 42 43 41 42 42 43 41 42
721	Soil excavation	n , laying sheetpile and	disposal		21 days	Oct 19 '22	Nov 8 '22						*		
722	Treatment of	bedding			7 days	Nov 9 '22	Nov 15 '22						*		
723	Pipe laying D.I				21 days	Nov 16 '22	Dec 6 '22								
724	Backfilling gen	eral fill and compaction	n		14 days	Dec 7 '22	Dec 20 '22						*		
725	Reinstatemen	t			7 days	Dec 21 '22	Dec 27 '22						*		
726	Team A CH970 to	CH1025 (55m)			62 days	Dec 28 '22	Feb 27 '23						-		
727	TTA establishr	nent			1 day	Dec 28 '22	Dec 28 '22						*		
28	Hard material	excavation and disposa	al		2 days	Dec 29 '22	Dec 30 '22						*		
729		n , laying sheetpile and			21 days	Dec 31 '22	Jan 20 '23						*		
730	Treatment of		<u>'</u>		7 days	Jan 21 '23	Jan 27 '23						<b>*</b>		
731	Pipe laying D.I				28 days	Jan 28 '23	Feb 24 '23						*		
732		eral fill and compaction	n		2 days	Feb 25 '23	Feb 26 '23								
733	Reinstatemen	•	•		1 day	Feb 27 '23	Feb 27 '23			-			<del>}</del>		
734	Team A CH1025 t				30 days	Feb 28 '23	Mar 29 '23								
735	TTA establishr				1 day	Feb 28 '23	Feb 28 '23			-			<del>\</del>		
736		excavation and dispose	al		2 days	Mar 1 '23	Mar 2 '23			-			<del>}</del>		
737		n, laying sheetpile and			14 days	Mar 3 '23	Mar 16 '23			-			<u> </u>		
738	Treatment of		posui		2 days	Mar 17 '23	Mar 18 '23			-			<del>-</del>		
739	Pipe laying D.I				3 days	Mar 19 '23	Mar 21 '23			-			<del>}</del>		
740		· leral fill and compaction	n		7 days	Mar 22 '23	Mar 28 '23			-			<b>→</b>		
741	Reinstatemen		II .			Mar 29 '23	Mar 29 '23			-			<b>-</b>		
					1 day					-			<u>l</u>		
742	Team A CH1065 t				62 days	Mar 30 '23	May 30 '23			-			<b>—</b>		
743	TTA establishr		-1		1 day	Mar 30 '23	Mar 30 '23			_			<b>\</b>		
744		excavation and disposa			2 days	Mar 31 '23	Apr 1 '23			-			<b>\</b>		
745		n , laying sheetpile and	disposai		21 days	Apr 2 '23	Apr 22 '23			_					
746	Treatment of				7 days	Apr 23 '23	Apr 29 '23			-			<b>-</b>		
747	Pipe laying D.I				28 days	Apr 30 '23	May 27 '23			_					
748		eral fill and compaction	n		2 days	May 28 '23	May 29 '23			_			<b>5</b>		
749	Reinstatemen				1 day	May 30 '23	May 30 '23			_			h		
750	Team A CH1125 t				62 days	May 31 '23							<b>—</b>		
751	TTA establishr				1 day	May 31 '23	May 31 '23						5		
752		excavation and disposa			2 days	Jun 1 '23	Jun 2 '23						5		
753		n, laying sheetpile and	disposal		21 days	Jun 3 '23	Jun 23 '23						•		
754	Treatment of				7 days	Jun 24 '23	Jun 30 '23						<u> </u>		
755	Pipe laying D.I				28 days	Jul 1 '23	Jul 28 '23			_			<u> </u>	,	
756		eral fill and compaction	n		2 days	Jul 29 '23	Jul 30 '23			_			5	,	
757	Reinstatemen				1 day	Jul 31 '23	Jul 31 '23						5		
758	Pressure test, sw				60 days	Aug 1 '23	Sep 29 '23								
759	Team B CH000 to Ch				447 days	Feb 7 '22	Apr 29 '23				_			$\neg   \  $	
760	Team B CH210 to				140 days	Feb 7 '22	Jun 26 '22					$\neg$			
761		lease of TTA from othe	r Contractor		102 days	Feb 7 '22	May 19 '22								
762	TTA establishr				1 day	May 20 '22	May 20 '22					5			
763		excavation and disposa			2 days	May 21 '22	May 22 '22					5			
764		n , laying sheetpile and	disposal		9 days	May 23 '22	May 31 '22					<u>5</u>			
765	Treatment of				3 days	Jun 1 '22	Jun 3 '22								
766	Pipe laying D.I				3 days	Jun 4 '22	Jun 6 '22					<u> </u>			
767	Backfilling gen	eral fill and compactio	n		19 days	Jun 7 '22	Jun 25 '22								
		Task		Inactive Task		Manual Summa	ary Rollup 📥		Extern	al Milestone	e \$		Manual Progress	_	
	220 D	Split				Manual Summa			Deadli		+				
	O20 Programme	Milestone	<b>♦</b>	Inactive Summary		Start-only	-, · Г		Critica		<u>.</u>				
Oate: Jun 28 '	22	Summary		Manual Task		Finish-only			Critica				_		
		Project Summary		Duration-only		External Tasks			Progre	35			_		

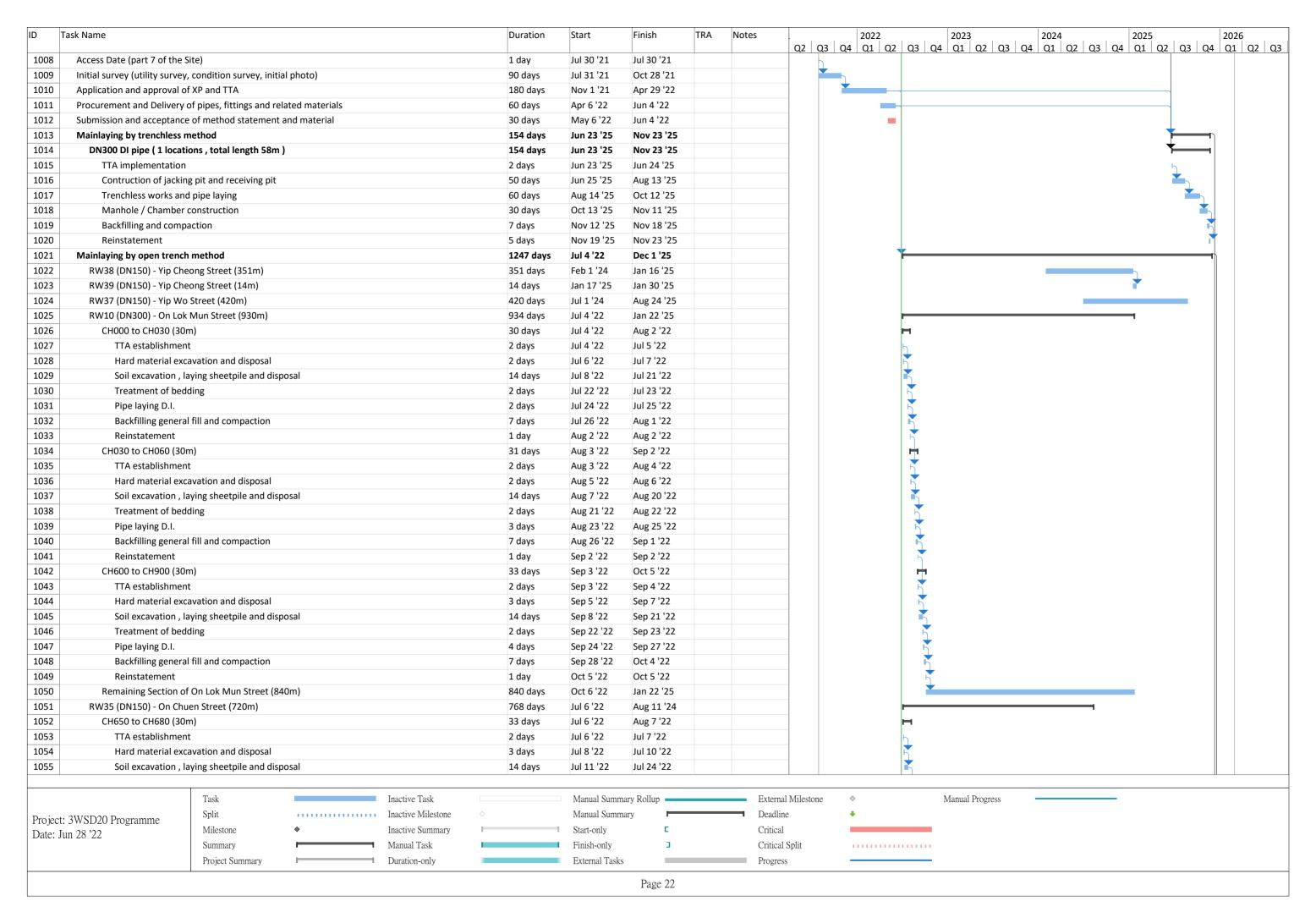
Task Name	е				Duration	Start	Finish	TRA	Notes	02 03	2022 3   Q4   Q1   Q2   Q3   Q4   Q1   Q2   Q	2024	2025 2026
768	Reinstatemer	t			1 day	Jun 26 '22	Jun 26 '22			ν ν ν ν ν ν ν ν ν ν ν ν ν ν ν ν ν ν ν	, , , , , , , , , , , , , , , , , , , ,	, 4, 41, 42, 43	<u> </u>
69	Team B CH180 to	CH210 (30m)			15 days	Jun 27 '22	Jul 11 '22				(**		
70	TTA establish	• •			1 day	Jun 27 '22	Jun 27 '22				<b>*</b>		
71		excavation and dispos	sal		1 day	Jun 28 '22	Jun 28 '22				<u> </u>		
72		n , laying sheetpile and			3 days	Jun 29 '22	Jul 1 '22				<u> </u>		
73	Treatment of		•		1 day	Jul 2 '22	Jul 2 '22				<u></u>		
74	Pipe laying D.				1 day	Jul 3 '22	Jul 3 '22				<b>*</b>		
75		neral fill and compaction	on		7 days	Jul 4 '22	Jul 10 '22						
76	Reinstatemer				1 day	Jul 11 '22	Jul 11 '22						
77	Team B CH235 to				21 days	Jul 12 '22	Aug 1 '22						
78	TTA establish	•			1 day	Jul 12 '22	Jul 12 '22						
79		excavation and dispos	sal		2 days	Jul 13 '22	Jul 14 '22				<b>→</b>		
80		n , laying sheetpile and			7 days	Jul 15 '22	Jul 21 '22				<b> </b> →		
81	Treatment of		a disposai		1 day	Jul 13 22 Jul 22 '22	Jul 21 22 Jul 22 '22			-			
82	Pipe laying D.					Jul 22 22 Jul 23 '22	Jul 22 22 Jul 24 '22			_	[.}		
			n		2 days		Jul 24 '22 Jul 31 '22			_	<b>\</b>		
83		neral fill and compaction	ווע		7 days	Jul 25 '22				_			
84	Reinstatemer				1 day	Aug 1 '22	Aug 1 '22			_			
85	Team B CH270 to				30 days	Aug 2 '22	Aug 31 '22			_	📮		
86	TTA establish				1 day	Aug 2 '22	Aug 2 '22				🕽		
87		excavation and dispos			2 days	Aug 3 '22	Aug 4 '22				5		
88		n , laying sheetpile and	d disposal		14 days	Aug 5 '22	Aug 18 '22				🐧		
789	Treatment of				2 days	Aug 19 '22	Aug 20 '22				5		
90	Pipe laying D.				3 days	Aug 21 '22	Aug 23 '22				5		
791		neral fill and compaction	on		7 days	Aug 24 '22	Aug 30 '22				5		
92	Reinstatemer				1 day	Aug 31 '22	Aug 31 '22						
93		CH430 (120m) (Shek	Shueng River)		91 days	Sep 1 '22	Nov 30 '22				🛨		
94	TTA establish				7 days	Sep 1 '22	Sep 7 '22				5		
95		excavation and dispos			14 days	Sep 8 '22	Sep 21 '22				5		
'96		n , laying sheetpile and	d disposal		21 days	Sep 22 '22	Oct 12 '22				🔨		
97	Treatment of	bedding			14 days	Oct 13 '22	Oct 26 '22				🕌		
'98	Pipe laying D.	l.			21 days	Oct 27 '22	Nov 16 '22						
'99	Backfilling ger	neral fill and compaction	on		7 days	Nov 17 '22	Nov 23 '22						
300	Reinstatemer	t			7 days	Nov 24 '22	Nov 30 '22				<del> </del>		
01	Team B CH150 to	CH180 (30m)			30 days	Dec 1 '22	Dec 30 '22				r-1		
02	TTA establish	ment			1 day	Dec 1 '22	Dec 1 '22				<del> </del>		
03	Hard materia	excavation and dispos	sal		2 days	Dec 2 '22	Dec 3 '22						
04		n , laying sheetpile and			14 days	Dec 4 '22	Dec 17 '22				📩		
05	Treatment of				2 days	Dec 18 '22	Dec 19 '22				<u> </u>		
06	Pipe laying D.				3 days	Dec 20 '22	Dec 22 '22				<u> </u>		
07		neral fill and compaction	on		7 days	Dec 23 '22	Dec 29 '22						
08	Reinstatemer				1 day	Dec 30 '22	Dec 30 '22						
09	Team B CH0 to C				60 days	Dec 31 '22	Feb 28 '23						
10	TTA establish				1 day	Dec 31 '22	Dec 31 '22						
311		excavation and dispos	sal		7 days	Jan 1 '23	Jan 7 '23			-			
12		n , laying sheetpile and			21 days	Jan 8 '23	Jan 28 '23			_			
313	Treatment of		<b>p</b>		7 days	Jan 29 '23	Feb 4 '23			-	<b>-</b>		
314	Pipe laying D.				7 days	Feb 5 '23	Feb 11 '23			-	<b>→</b>		
15		neral fill and compacti	ion		14 days	Feb 12 '23	Feb 25 '23			-	<b>]</b>		
	Dackilling gel	merar nii anu compacti			14 days	LEN 17 72	1 60 23 23						
		Task		Inactive Task		Manual Summ	ary Rollup —		Exterr	al Milestone	♦ Manual Progress		
· . OTTIOD	0 D	Split				Manual Summ			Deadl		+		
oject: 3WSD20		Milestone	<b>*</b>	Inactive Summary		Start-only	E		Critica				
ate: Jun 28 '22		Summary		Manual Task		Finish-only	1			al Split			
		Project Summary				External Tasks							
		Froject Summary		Duration-only		External Tasks			Progre	200			



Task Name				Duration	Start	Finish	TRA	Notes	Q2	Q3 Q4 Q1	22 .   Q2   C	Q3   Q4	2023   Q1   Q2   Q3   Q4   Q1	24   2025   2026 L   Q2   Q3   Q4   Q1   Q2   Q3   Q4   Q1   Q2
864 Reinstatemen	t			1 day	Aug 31 '22	Aug 31 '22						7	, ,	
865 CH110 to CH140	(30m)			30 days	Sep 1 '22	Sep 30 '22						H		
TTA establishr	nent			1 day	Sep 1 '22	Sep 1 '22						5		
Hard material	excavation and disposal			3 days	Sep 2 '22	Sep 4 '22						5		
68 Soil excavation	n , laying sheetpile and o	disposal		14 days	Sep 5 '22	Sep 18 '22						<u> </u>		
69 Treatment of	pedding			2 days	Sep 19 '22	Sep 20 '22						5		
70 Pipe laying D.I	•			2 days	Sep 21 '22	Sep 22 '22						5		
71 Backfilling gen	eral fill and compaction			7 days	Sep 23 '22	Sep 29 '22						5		
72 Reinstatemen	t			1 day	Sep 30 '22	Sep 30 '22						5		
73 Remaining Sectio	n of Tin Ping Road (1287	7m)		578 days	Oct 1 '22	Apr 30 '24								<b>-</b>
74 Ma Sik Road (1323m	)			665 days	Jul 6 '22	Apr 30 '24								<b>→</b>
75 CH1400 to CH143	30 (30m)			30 days	Jul 6 '22	Aug 4 '22					H			
76 TTA establishr	nent			1 day	Jul 6 '22	Jul 6 '22					Ь			
77 Hard material	excavation and disposal			3 days	Jul 7 '22	Jul 9 '22					5			
78 Soil excavation	n , laying sheetpile and o	disposal		14 days	Jul 10 '22	Jul 23 '22						1		
79 Treatment of	pedding			2 days	Jul 24 '22	Jul 25 '22								
Pipe laying D.I	•			2 days	Jul 26 '22	Jul 27 '22								
Backfilling gen	eral fill and compaction			7 days	Jul 28 '22	Aug 3 '22								
Reinstatemen				1 day	Aug 4 '22	Aug 4 '22					F			
83 CH1430 to CH146	60 (30m)			31 days	Aug 5 '22	Sep 4 '22					r	1		
84 TTA establishr	nent			2 days	Aug 5 '22	Aug 6 '22					i			
85 Hard material	excavation and disposal	l		3 days	Aug 7 '22	Aug 9 '22					i	5		
Soil excavation	n, laying sheetpile and o	disposal		14 days	Aug 10 '22	Aug 23 '22					i	K		
Treatment of	bedding			2 days	Aug 24 '22	Aug 25 '22						5		
Pipe laying D.I	•			2 days	Aug 26 '22	Aug 27 '22						5		
89 Backfilling gen	eral fill and compaction			7 days	Aug 28 '22	Sep 3 '22						5		
90 Reinstatemen	t			1 day	Sep 4 '22	Sep 4 '22						5		
OH1460 to CH149	90 (30m)			30 days	Sep 5 '22	Oct 4 '22						<b>H</b>		
92 TTA establishr	nent			1 day	Sep 5 '22	Sep 5 '22						5		
93 Hard material	excavation and disposal	I		3 days	Sep 6 '22	Sep 8 '22						5		
94 Soil excavation	n, laying sheetpile and o	disposal		14 days	Sep 9 '22	Sep 22 '22						*		
95 Treatment of	pedding			2 days	Sep 23 '22	Sep 24 '22						5		
96 Pipe laying D.I				2 days	Sep 25 '22	Sep 26 '22						5		
97 Backfilling gen	eral fill and compaction	l		7 days	Sep 27 '22	Oct 3 '22						5		
98 Reinstatemen	t			1 day	Oct 4 '22	Oct 4 '22						5		
99 Remaining Sectio	n of Ma Sik Road (1233r	m)		574 days	Oct 5 '22	Apr 30 '24								
00 Sha Tau Kok Road (8	869m)			580 days	Sep 1 '22	Apr 2 '24		1.5m/day						<b>-</b>
01 Overall testing				60 days	May 1 '24	Jun 29 '24								
02 Swabbing				15 days	May 1 '24	May 15 '24								<b>-</b>
03 CCTV				15 days	May 16 '24	May 30 '24								₹
04 Hydrostatic pressure te	st			30 days	May 31 '24	Jun 29 '24								<b>*</b>
05 Pipe connection and comp	letion			30 days	Jun 30 '24	Jul 29 '24								*
Planned completion for se	ction 5			0 days	Jul 29 '24	Jul 29 '24								Jul 29 '24
907														
Section 6 - Water main laying	works in part 5 of the	Site		1280 days	Jul 30 '21	Jan 29 '25								
O9 Access Date (part 5 of the	Site)			1 day	Jul 30 '21	Jul 30 '21				h				
10 Initial survey (utility survey	, condition survey, initia	al photo)		90 days	Jul 31 '21	Oct 28 '21				*				
11 Application and approval of	f XP and TTA			167 days	Oct 1 '21	Mar 16 '22					•			
	T. 1		.: m 1		. M. 10	D 11		<b></b>	13.57				W 1D	
	Task		active Task		Manual Sumn				al Milest	tone $\diamond$		I	Manual Progress	
oject: 3WSD20 Programme	Split		active Milestone		Manual Summ	ary		Deadli		•				
ate: Jun 28 '22	Milestone		active Summary		Start-only	С		Critica						
	Summary		anual Task		Finish-only	3		Critica						
	Project Summary	Di	ration-only		External Task	3		Progre	SS					

ID T	ask Name				Duration	Start	Finish	TRA	Notes	2022 2023 2024 2025 2026
912	Procurement and Delivery of	f nines fittings and re	lated materials		30 days	May 30 '22	Jun 28 '22			Q2 Q3 Q4 Q1 Q2
913	Submission and acceptance				30 days	May 30 '22	Jun 28 '22			
914	Mainlaying by trenchless m		and material		519 days	Jun 1 '23	Oct 31 '24			
915	DN400, DN300 DI pipe (		oth 126m )		353 days	Jun 1 '23	May 18 '24	30		
916	TTA implementation		,		353 days	Jun 1 '23	May 18 '24			
917	Contruction of jacking	pit and receiving pit			120 days	Jun 8 '23	Oct 5 '23	3	30d/pit	
918	Trenchless works and				60 days	Aug 23 '23	Oct 21 '23		/	
919	Manhole / Chamber of				90 days	Oct 22 '23	Jan 19 '24			
920	Backfilling and compa				60 days	Jan 20 '24	Mar 19 '24			
921	Reinstatement				60 days	Mar 20 '24	May 18 '24			
922	DN150 DI pipe ( 1 location	on , total length 33m )			166 days	May 19 '24	Oct 31 '24	15		<del>     </del>
923	TTA implementation				4 days	May 19 '24	May 22 '24			<b>T</b>
924	Contruction of jacking	g pit and receiving pit			60 days	May 23 '24	Jul 21 '24	:	30d/pit	
925	Trenchless works and	pipe laying			30 days	Jul 22 '24	Aug 20 '24			
926	Manhole / Chamber of	onstruction			30 days	Aug 21 '24	Sep 19 '24			
927	Backfilling and compa	ction			21 days	Sep 20 '24	Oct 10 '24			
928	Reinstatement				21 days	Oct 11 '24	Oct 31 '24			
929	Contractor's Design and Co	nstruction of distribut	tion mains		60 days	May 16 '22	Jul 14 '22			<b>-</b>
930	Submission and acceptar	nce of detailed design	proposal		30 days	May 16 '22	Jun 14 '22			<u> </u>
931	Site investigation and lia	son with relevant part	ties		30 days	Jun 15 '22	Jul 14 '22			
932	Mainlaying by open trench	method			836 days	Jul 15 '22	Oct 27 '24			
933	RW41 (DN150) - Sheung	Shui Tung Hing Road (	288m)		280 days	Jul 15 '22	Apr 20 '23			
934	RW42 (DN150) - No nam		Heung (210m)		210 days	Apr 21 '23	Nov 16 '23			
935	RW71 (DN150) - Jockey (				308 days	Nov 17 '23	Sep 19 '24			
936	RW44 (DN150) - Jockey (				38 days	Sep 20 '24	Oct 27 '24			
937	RW11 (DN150) - Fung Na				510 days	Dec 1 '22		30		
938	RW46 (DN150) - Fung Na				38 days	Apr 24 '24	May 31 '24			
939	RW06 (DN300) - Lung Su				290 days	Jul 1 '23	Apr 15 '24			
940	RW05 (DN400) - Jockey (				392 days	Jul 15 '22		15		
941	RW15 (DN150) - Sun Fun	· · · · · · · · · · · · · · · · · · ·	ad (390m)		390 days	Oct 1 '23	Oct 24 '24			
942	RW18 (DN150) - San Hor				464 days	Jul 15 '22	Oct 21 '23			
943	RW20 (DN150) - Sun Wir				52 days	Oct 22 '23	Dec 12 '23			
944	RW45 (DN150) - Tsun Fu				82 days	Dec 13 '23	Mar 3 '24			
945	RW14 (DN150) - Fu Hing				372 days	Jul 1 '23	Jul 6 '24			
946	RW21 (DN150) - Sun Fat	Street (105m)			105 days	Jul 7 '24	Oct 19 '24			
947	Overall testing				60 days	Nov 1 '24	Dec 30 '24			
948	Swabbing				15 days	Nov 1 '24	Nov 15 '24			-
949 950	CCTV Hydrostatic pressure tes	•			15 days 30 days	Nov 16 '24 Dec 1 '24	Nov 30 '24 Dec 30 '24			-
950	Pipe connection and comple				30 days	Dec 1 24 Dec 31 '24	Jan 29 '25			-    -
951	Planned completion for sec				0 days	Jan 29 '25	Jan 29 '25			→ Jan 29 '25
953	a.mea completion for 3ec				o days	Juli 23 23	Juli 23 23			-
	Section 7 - Water main laying	works in part 6 of the	Site		1523 days	Jul 30 '21	Sep 29 '25			
955	Access Date (part 6 of the S				1 day	Jul 30 '21	Jul 30 '21			
956	Initial survey (utility survey,		al photo)		90 days	Jul 31 '21	Oct 28 '21			
957	Application and approval of				117 days	Nov 1 '21	Feb 25 '22			
958	Procurement and Delivery of		lated materials		30 days	May 7 '22	Jun 5 '22			
959	Submission and acceptance				30 days	May 7 '22	Jun 5 '22			_
İ		Task		Inactive Task		Manual Summ	ary Rollup 📥		External	al Milestone   Manual Progress
De-	3WSD20 Programme	Split		Inactive Milestone		Manual Summ	ary		Deadline	ne 🔸
- Project	n 28 '22	Milestone	<b>♦</b>	Inactive Summary		Start-only	Е		Critical	
		Summary		Manual Task		Finish-only	3		Critical S	Split
		Summary								Spit
		Project Summary	-	Duration-only		External Tasks			Progress	





	k Name			Duration	Start	Finish	TRA	Notes	02 4		2022	2023 3   Q4   Q1   Q2   Q3   Q	2024	2025	2026
.056	Treatment of bed	ding		2 days	Jul 25 '22	Jul 26 '22			QZ   C	<u>us   U4  </u>	QI   QZ   Q3	o   Q4   Q1   Q2   Q3   C	<u>u+   Q1   Q2   Q3   Q4</u>	Q1   Q2   Q3	Q4   Q1   Q2
057	Pipe laying D.I.			4 days	Jul 27 '22	Jul 30 '22									
)58	Backfilling genera	I fill and compaction		7 days	Jul 31 '22	Aug 6 '22						,			
)59	Reinstatement			1 day	Aug 7 '22	Aug 7 '22					5	7			
060	CH620 to CH650 (30	n)		16 days	Aug 8 '22	Aug 23 '22					н				
061	TTA establishmen	t		1 day	Aug 8 '22	Aug 8 '22					5	7			
62	Hard material exc	avation and disposal		1 day	Aug 9 '22	Aug 9 '22					5				
63	Soil excavation , l	aying sheetpile and dis	sposal	7 days	Aug 10 '22	Aug 16 '22									
64	Treatment of bed	ding		1 day	Aug 17 '22	Aug 17 '22					1				
65	Pipe laying D.I.			1 day	Aug 18 '22	Aug 18 '22					-				
66	Backfilling genera	I fill and compaction		4 days	Aug 19 '22	Aug 22 '22					F				
67	Reinstatement			1 day	Aug 23 '22	Aug 23 '22					F				
68	CH590 to CH620 (30	m)		29 days	Aug 24 '22	Sep 21 '22					P	1			
69	TTA establishmen	t		1 day	Aug 24 '22	Aug 24 '22					F				
70	Hard material exc	avation and disposal		2 days	Aug 25 '22	Aug 26 '22					ì				
71	Soil excavation , l	aying sheetpile and dis	sposal	14 days	Aug 27 '22	Sep 9 '22					i	<u></u>			
72	Treatment of bed	ding		2 days	Sep 10 '22	Sep 11 '22						5			
)73	Pipe laying D.I.			2 days	Sep 12 '22	Sep 13 '22						5			
)74	Backfilling genera	I fill and compaction		7 days	Sep 14 '22	Sep 20 '22						<u>K</u>			
)75	Reinstatement			1 day	Sep 21 '22	Sep 21 '22						5			
076	Remaining Section of	On Chuen Street (630	Dm)	690 days	Sep 22 '22	Aug 11 '24	60					<b>V</b>			
077	RW09 (DN150) - Wo Hir	ng Road (436m)		436 days	Jun 1 '23	Aug 9 '24									
078	RW60 (DN150) - Tee fro	m RW09 (14m)		29 days	Aug 10 '24	Sep 7 '24	14						<b>*</b>		
079	RW40 (DN150) - Tai Wo	Service Road West (42	20m)	450 days	Sep 8 '24	Dec 1 '25	30								
080	Overall testing			60 days	Dec 2 '25	Jan 30 '26									
081	Swabbing			15 days	Dec 2 '25	Dec 16 '25									<b>-</b>
082	CCTV			15 days	Dec 17 '25	Dec 31 '25									
.083	Hydrostatic pressure te	st		30 days	Jan 1 '26	Jan 30 '26									
084	Pipe connection and comp	etion		30 days	Jan 31 '26	Mar 1 '26									
.085	Planned completion for sec	tion 8		0 days	Mar 1 '26	Mar 1 '26									Mar
.086															
	ction 9 - Conversion works	to effect the supply of	f reclaimed water	1676 days	Jul 30 '21	Mar 1 '26			Į.						
	Access Date			1 day	Jul 30 '21	Jul 30 '21									
	Initial survey by stages			180 days	Jul 1 '22	Dec 27 '22									
	Liaison, coordination and e	nabling work for conv	ersion	300 days	Aug 1 '22	May 27 '23					-				
	Conversion works			944 days	Aug 1 '23	Mar 1 '26						1			
092	Section 4 (Part 3) - 3 no			60 days	Aug 1 '23	Sep 29 '23						_			
093	Section 5 (Part 4) - 11 n			220 days	Dec 23 '23	Jul 29 '24									
094	Section 6 (Part 5) - 11 n			220 days	Jun 24 '24	Jan 29 '25								_	
.095	Section 7 (Part 6) - 40 n			400 days	Aug 26 '24	Sep 29 '25									
1096	Section 8 (Part 7) - 3 no			60 days	Jan 1 '26	Mar 1 '26									
097	Planned completion for sec	tion 9		0 days	Mar 1 '26	Mar 1 '26									<b>∢</b> Mar



### SITE OVERVIEW PHOTO IN THE REPORTING PERIOD



Excavation and lateral support work at proposed area of Hypo-Chlorination Facilities



Rebar fixing work at proposed areas of Hypo-Chlorination Facilities



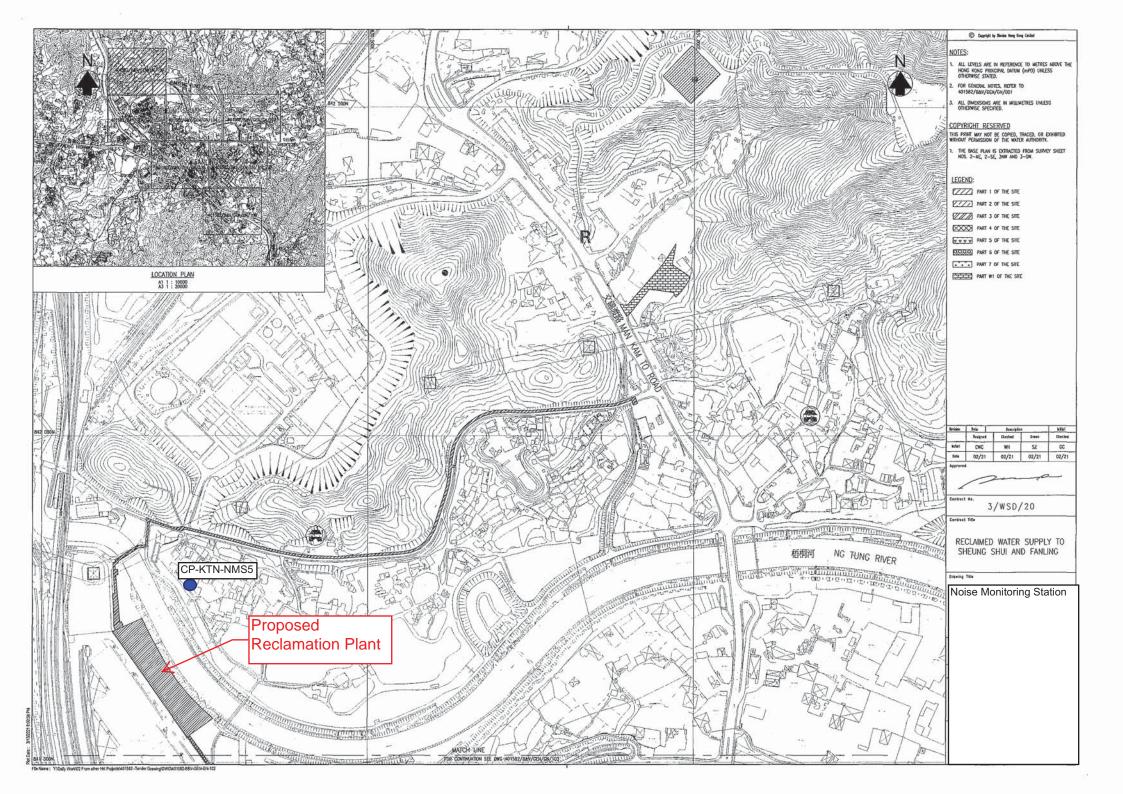


Pile Cap and Formwork erection work at proposed area of Reclaimed Water Pumping Station



## Appendix D

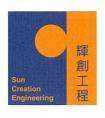
**Location of Designated Noise Monitoring Station CP-KTN-NMS5** 





## **Appendix E**

**Valid Calibration Certificates of Monitoring Equipment** 



### Sun Creation Engineering Limited

**Calibration & Testing Laboratory** 

## Certificate of Calibration 校正證書

Certificate No.: C216479

證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號: IC21-2189)

Date of Receipt / 收件日期: 25 October 2021

Description / 儀器名稱

Sound Level Meter (EQ016)

Manufacturer / 製造商

Rion NL-52

Model No. / 型號 Serial No. / 編號

00464681

Supplied By / 委託者

Action-United Environmental Services and Consulting

Unit A, 20/F., Gold King Industrial Building, 35-41 Tai Lin Pai Road, Kwai Chung, N.T.

TEST CONDITIONS / 測試條件

Temperature / 温度 :

 $(23 \pm 2)^{\circ}$ C

Relative Humidity / 相對濕度 :  $(50 \pm 25)\%$ 

Line Voltage / 電壓

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期

9 November 2021

#### TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.

The results do not exceed manufacturer's specification.

The results are detailed in the subsequent page(s).

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

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Agilent Technologies / Keysight Technologies
- Fluke Everett Service Center, USA

Tested By

測試

K P Cheuk Project Engineer

Certified By

核證

Engineer

Date of Issue 簽發日期

10 November 2021

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

Sun Creation Engineering Limited – Calibration & Testing Laboratory c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong 輝創工程有限公司 - 校正及檢測實驗所 c/o 香港新界屯門興安里一號四樓

Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986

E-mail/電郵: callab@suncreation.com

Website/網址: www.suncreation.com

Page 1 of 4



### Sun Creation Engineering Limited

Calibration & Testing Laboratory

## Certificate of Calibration 校正證書

Certificate No.:

C216479

證書編號

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

- 2. Self-calibration was performed before the test.
- 3. The results presented are the mean of 3 measurements at each calibration point.
- 4. Test equipment:

Equipment ID

Description

Certificate No.

CL280

40 MHz Arbitrary Waveform Generator

C210084

CL281

Multifunction Acoustic Calibrator

AV210017

- 5. Test procedure: MA101N.
- 6. Results:
- 6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

	UUT Setting					UUT	IEC 61672
Range	Function	Frequency	Time	Level	Freq.	Reading	Class 1 Spec.
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)	(dB)
30 - 130	$L_A$	A	Fast	94.00	1	93.6	± 1.1

6.1.2 Linearity

	UU	Γ Setting		Applied	d Value	UUT
Range	Function	Frequency	Time	Level	Freq.	Reading
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)
30 - 130	$L_{A}$	A	Fast	94.00	1	93.6 (Ref.)
				104.00		103.6
				114.00		113.6

IEC 61672 Class 1 Spec. :  $\pm$  0.6 dB per 10 dB step and  $\pm$  1.1 dB for overall different.

6.2 Time Weighting

	UUT	Setting		Applied Value		UUT	IEC 61672
Range	Function	Frequency	Time	Level	Freq.	Reading	Class 1 Spec.
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)	(dB)
30 - 130	$L_{A}$	A	Fast	94.00	1	93.6	Ref.
			Slow			93.6	± 0.3

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

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Sun Creation Engineering Limited – Calibration & Testing Laboratory c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong 輝創工程有限公司 - 校正及檢測實驗所 c/o 香港新界屯門興安里一號四樓



### Sun Creation Engineering Limited

**Calibration & Testing Laboratory** 

# Certificate of Calibration 校正證書

Certificate No.: C216479

證書編號

6.3 Frequency Weighting

A-Weighting 6.3.1

71-Weighting	UUT Setting				ied Value	UUT	IEC 61672
Range	Function	Frequency	Time	Level	Freq.	Reading	Class 1 Spec.
(dB)		Weighting	Weighting	(dB)		(dB)	(dB)
30 - 130	$L_{A}$	A	Fast	94.00	63 Hz	67.3	$-26.2 \pm 1.5$
,					125 Hz	77.4	$-16.1 \pm 1.5$
					250 Hz	84.9	<b>-8</b> .6 ± 1.4
					500 Hz	90.4	$-3.2 \pm 1.4$
					1 kHz	93.6	Ref.
					2 kHz	94.8	$+1.2 \pm 1.6$
					4 kHz	94.6	$+1.0 \pm 1.6$
					8 kHz	92.6	-1.1 (+2.1; -3.1)
					16 kHz	85.7	-6.6 (+3.5 ; -17.0)

6.3.2 C-Weighting

		Setting		Applied Value		UUT	IEC 61672
Range	Function	Frequency	Time	Level	Freq.	Reading	Class 1 Spec.
(dB)		Weighting	Weighting	(dB)		(dB)	(dB)
30 - 130	$L_{C}$	С	Fast	94.00	63 Hz	92.7	$-0.8 \pm 1.5$
					125 Hz	93.4	$-0.2 \pm 1.5$
					250 Hz	93.6	$0.0 \pm 1.4$
					500 Hz	93.6	$0.0 \pm 1.4$
					1 kHz	93.6	Ref.
				1	2 kHz	93.5	$-0.2 \pm 1.6$
					4 kHz	92.8	$-0.8 \pm 1.6$
					8 kHz	90.7	-3.0 (+2.1; -3.1)
		4.			16 kHz	83.7	-8.5 (+3.5; -17.0)

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Fax/傳真: (852) 2744 8986 E-mail/電郵: callab@suncreation.com

Tel/電話: (852) 2927 2606



### Sun Creation Engineering Limited

**Calibration & Testing Laboratory** 

## Certificate of Calibration 校正證書

Certificate No.: C216479

證書編號

Remarks: - UUT Microphone Model No.: UC-59 & S/N: 17434

- Mfr's Spec. : IEC 61672 Class 1

- Uncertainties of Applied Value: 94 dB : 63 Hz - 125 Hz  $: \pm 0.35 \text{ dB}$ 

> 250 Hz - 500 Hz :  $\pm$  0.30 dB 1 kHz  $: \pm 0.20 \text{ dB}$ 2 kHz - 4 kHz  $: \pm 0.35 \text{ dB}$ 8 kHz  $: \pm 0.45 \text{ dB}$ 16 kHz  $:\pm 0.70 \text{ dB}$

104 dB: 1 kHz  $: \pm 0.10 \text{ dB (Ref. 94 dB)}$ 114 dB: 1 kHz  $: \pm 0.10 \text{ dB (Ref. 94 dB)}$ 

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

#### Note:

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

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

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory

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### Sun Creation Engineering Limited

**Calibration & Testing Laboratory** 

## Certificate of Calibration 校正證書

Certificate No.: C216478

證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號: IC21-2189)

Date of Receipt / 收件日期: 25 October 2021

Description / 儀器名稱

Sound Calibrator (EQ087)

Manufacturer / 製造商

Rion

Model No. / 型號

NC-74

Serial No. / 編號

34657231

Supplied By / 委託者

Action-United Environmental Services and Consulting

Unit A, 20/F., Gold King Industrial Building, 35-41 Tai Lin Pai Road, Kwai Chung, N.T.

TEST CONDITIONS / 測試條件

Temperature / 温度 :

 $(23 \pm 2)^{\circ}$ C

Relative Humidity / 相對濕度 :

 $(50 \pm 25)\%$ 

Line Voltage / 電壓

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期

9 November 2021

#### TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.

The results do not exceed manufacturer's specification.

The results are detailed in the subsequent page(s).

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

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Agilent Technologies / Keysight Technologies
- Fluke Everett Service Center, USA

Tested By

測試

K P Cheuk

Project Engineer

Certified By

核證

K C/Lee

Date of Issue

10 November 2021

Engineer

簽發日期

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

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### Sun Creation Engineering Limited

**Calibration & Testing Laboratory** 

## Certificate of Calibration 校正證書

Certificate No.: C216478

證書編號

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

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

3. Test equipment:

**Equipment ID** 

CL130

CL281 TST150A Description

Universal Counter

Multifunction Acoustic Calibrator

Measuring Amplifier

Certificate No.

C213954 AV210017

C201309

Test procedure: MA100N.

5. Results:

Sound Level Accuracy 5.1

200110 20101110001000			
UUT	Measured Value	Mfr's Spec.	Uncertainty of Measured Value
Nominal Value	(dB)	(dB)	(dB)
94 dB, 1 kHz	94.1	± 0.3	± 0.2

5.2 Frequency Accuracy

UUT Nominal Value	Measured Value	Mfr's	Uncertainty of Measured Value
		_	,
(kHz)	(kHz)	Spec.	(Hz)
1	1.001	$1 \text{ kHz} \pm 1 \%$	± 1

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

#### Note:

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

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

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory

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## Appendix F

Monitoring Schedule of the Reporting Month and Coming Month



### **The Reporting Monitoring Schedule (July 2022)**

	Date	Noise Monitoring (Leq30min)	Ecology Monitoring (Water Bird)
Fri	1-Jul-22		
Sat	2-Jul-22		
Sun	3-Jul-22		
Mon	4-Jul-22		<b>✓</b> (High Tide)
Tue	5-Jul-22		
Wed	6-Jul-22		✓ (Low Tide)
Thu	7-Jul-22		
Fri	8-Jul-22	✓	
Sat	9-Jul-22		
Sun	10-Jul-22		
Mon	11-Jul-22		
Tue	12-Jul-22		
Wed	13-Jul-22		
Thu	14-Jul-22	✓	✓ (High Tide)
Fri	15-Jul-22		✓ (Low Tide)
Sat	16-Jul-22		
Sun	17-Jul-22		
Mon	18-Jul-22		✓ (Low Tide)
Tue	19-Jul-22		
Wed	20-Jul-22	✓	✓ (High Tide)
Thu	21-Jul-22		
Fri	22-Jul-22		
Sat	23-Jul-22		
Sun	24-Jul-22		
Mon	25-Jul-22		
Tue	26-Jul-22	✓	
Wed	27-Jul-22		
Thu	28-Jul-22		✓ (Low Tide)
Fri	29-Jul-22		
Sat	30-Jul-22		✓ (High Tide)
Sun	31-Jul-22		. 5

✓	Monitoring Day
	Sunday or Public Holiday



### **The Coming Month Monitoring Schedule (August 2022)**

	Date	Noise Monitoring (Leq30min)	Ecology Monitoring (Water Bird) Note
Mon	1-Aug-22	,	
Tue	2-Aug-22		
Wed	3-Aug-22		
Thu	4-Aug-22		✓
Fri	5-Aug-22	✓	
Sat	6-Aug-22		
Sun	7-Aug-22		
Mon	8-Aug-22		
Tue	9-Aug-22		
Wed	10-Aug-22		✓
Thu	11-Aug-22	✓	
Fri	12-Aug-22		
Sat	13-Aug-22		
Sun	14-Aug-22		
Mon	15-Aug-22		
Tue	16-Aug-22		✓
Wed	17-Aug-22	✓	
Thu	18-Aug-22		
Fri	19-Aug-22		
Sat	20-Aug-22		
Sun	21-Aug-22		
Mon	22-Aug-22		✓
Tue	23-Aug-22	✓	
Wed	24-Aug-22		
Thu	25-Aug-22		
Fri	26-Aug-22		
Sat	27-Aug-22		
Sun	28-Aug-22		
Mon	29-Aug-22	✓	
Tue	30-Aug-22		✓
Wed	31-Aug-22		

Note:

Ecology monitoring dates are tentative and are subject to change

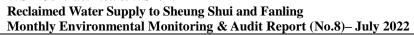
✓	Monitoring Day							
	Sunday or Public Holiday							



## Appendix G

**Database of Monitoring Result** 

WSD Contract No.: 3/WSD/20





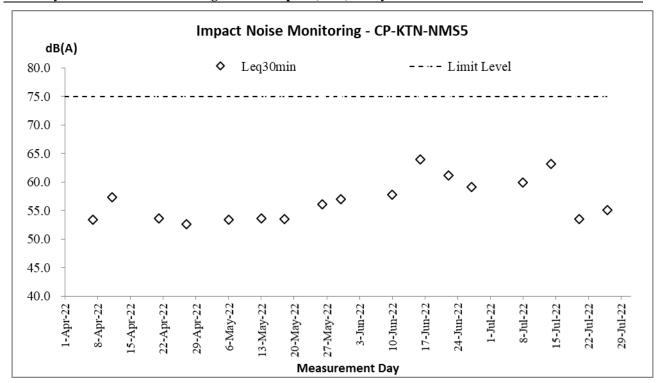
Daytime No	Daytime Noise Measurement Results (dB) at CP-KTN-NMS5																				
Date	Start Time	1st Leq (5min)		2nd Leq (5min)			3rd Leq (5min)			4th Leq (5min)			5th Leq (5min)			6th Leq (5min)			I a a 20	Corrected	
		Leq,	,	,	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90,	Leq30min, dB(A)	Leq30min									
		dB(A)																			dB(A)
8-Jul-22	14:18	62.4	65.0	58.0	58.2	62.5	53.5	57.6	61.0	52.5	61.6	62.5	53.0	56.6	63.5	49.0	60.2	63.0	56.0	59.9	62.9
14-Jul-22	9:30	60.5	61.6	58.7	61.0	62.2	58.8	61.4	62.7	59.2	63.3	64.5	62.3	64.4	65.5	64.4	65.8	65.6	65.2	63.2	66.2
20-Jul-22	15:40	54.0	55.9	51.8	52.9	54.4	51.5	53.7	55.6	50.9	52.4	53.7	50.4	53.4	54.7	50.4	54.5	55.7	51.0	53.5	56.5
26-Jul-22	10:19	58.4	60.4	51.3	57.9	62.1	51.0	52.4	54.0	50.6	52.2	53.9	50.8	52.2	54.6	49.7	51.1	52.1	49.4	55.1	58.1



## Appendix H

**Graphical Plots for Monitoring Result** 







## **Appendix I**

**Monthly Summary Waste Flow Table** 

Contract No.: 3/WSD/20

Contact Name: Reclaimed Water Supply to Sheung Shui and Fanling

#### Monthly Summary Waste Flow Table for \_2022\_\_\_ (year)

		Actual Quanti	ties of Inert C&D	Materials Generate	ed Monthly		Act	ual Quantities of Co	&D Wastes G	enerated Mo	nthly
Month	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m <sup>3</sup> )
Jan	0.3031	0	0	0	0.3031	0	0	0	0	0	0.0016
Feb	0.5411	0	0	0	0.5411	0	0	0	0	0	0.0019
Mar	0.8459	0	0	0	0.8459	0	0	0	0	0	0.0014
Apr	3.2205	0	0	0	3.2205	0	0	0	0	0	0.0024
May	4.1278	0	0	0.39	4.1278	0	0	0	0	0	0.0057
June	4.6925	0	0	1.6148	4.6925	0	0	0	0	0	0.0017
July	0.8427	0	0	0	0.8427	0	0	0	0	0	0.0078
Aug											
Sept											
Oct											
Nov											
Dec											
Total	14.5736	0	0	2.0048	14.5736	0	0	0	0	0	0.0225

	Forecast of Total Quantities of C&D Materials to be Generated from the Contract*									
Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m <sup>3</sup> )
25.472	5.386	0	0	25.472	0	0	0	0	0	0.3885

Notes:

- (1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
- (2) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.
- (3) The quantities of C&D material indicated in the half-yearly status report should be in tonnes. If the project offices do not have information on the densities of the material for the time being, they could initially adopt the following conversion factors for reporting purpose: insitu densities of rock and soil to be 2.5 tonnes/m3 and 2.0 tonnes/m3 respectively; and densities of imported rock and soil to be 2.0 tonnes/m3 and 1.8 tonnes/m3 respectively.
- (4) Boken concrete and bitumen = 2.4 tonnes/m3
- (5) Conversion to 1000m3 for general refuse is weight in 1000kg multiply by 0.002



## Appendix J

**Implementation Schedule for Environmental Mitigation Measures** (ISEMM)

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the Measures?	Location of the measures	When to implement the Measures?	What requirements or standards for the measures to achieve?
		n Measures (Applicable to ALL Project Components, including DPs and Non-D	Ps)				
S3.8	D1	Mitigation measures in form of regular watering under a good site practice should be adopted. Watering once per hour on exposed worksites and haul road is proposed to achieve dust removal efficiency of 92.1%. While the above watering frequencies are to be followed, the extent of watering may vary depending on actual site conditions but should be sufficient to maintain an equivalent intensity of no less than 1.7 L/m2 to achieve the respective dust removal efficiencies.	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	APCO To control the dust impact to meet HKAQO and TM-EIAO
S3.8	D2	The Contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation.	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	APCO To control the dust impact to meet HKAQO and TM-EIAO
\$3.8	D3	<ul> <li>Following dust suppression measures should also be incorporated by the Contractor to control the dust nuisance throughout the construction phase:</li> <li>Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading;</li> <li>Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads;</li> <li>A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones;</li> <li>The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle;</li> <li>Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hard cores;</li> <li>When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period;</li> </ul>	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	APCO To control the dust impact to meet HKAQO and TM-EIAO

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the Measures?	Location of the measures	When to implement the Measures?	What requirements or standards for the measures to achieve?
		<ul> <li>The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials;</li> <li>Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously;</li> <li>Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet;</li> <li>Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding;</li> <li>Any skip hoist for material transport should be totally enclosed by impervious sheeting; and</li> </ul>					
Material	1 (0	• Every stock of more than 20 bags of cement or dry pulverized fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides.					
		struction Phase)	Control ocastavstiss	Contractor	LAII	Construction	Annoy E TM FIAO
S4.9	N1	<ul> <li>Implement the following good site management practices:</li> <li>only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme;</li> <li>machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum;</li> <li>plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs;</li> <li>silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works;</li> <li>mobile plant should be sited as far away from NSRs as possible and practicable; and</li> <li>material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.</li> </ul>	Control construction airborne noise	Contractor	All construction sites	Construction phase	Annex 5, TM-EIAO
S4.9	N2	Install temporary site hoarding (approx. 2.4m high) located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level	Contractor	All construction sites	Construction phase	Annex 5, TM-EIAO

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address zone of NSRs	Who to implement the Measures?	Location of the measures	When to implement the Measures?	What requirements or standards for the measures to achieve?
			through partial screening.				
S4.9	N3	Install movable noise barriers, full enclosure and acoustic mat, screen the noisy plants including air compressor and generator.	Screen the noisy plant items to be used at all construction sites	Contractor	All construction sites	Construction phase	Annex 5, TM-EIAO
S4.9	N4	Use of "Quiet" Plant and Working Methods	Reduce the noise levels of plant items	Contractor	All construction sites	Construction phase	Annex 5, TM-EIAO
S4.9	N5	Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All construction sites	Construction phase	Annex 5, TM-EIAO
Water C	Quality Impa	nct (Construction Phase)	•	•		•	
\$5.7	W1	Construction Runoff In accordance with the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN 1/94), construction phase mitigation measures should be provided and the Storm Water Pollution Control Plan is given below.  Storm Water Pollution Control Plan  • At the start of site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities. The design of the temporary on-site drainage system will be undertaken by the Contractor prior to the commencement of construction.  • Diversion of natural stormwater should be provided as far as possible. The design of temporary on-site drainage should prevent runoff going through site surface, construction machinery and equipment in order to avoid or minimize polluted runoff. Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8m3 capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity shall be flexible and able to handle multiple inputs from a variety of sources and suited to applications		Contractor	All construction sites	Construction phase	WPCO, EIAO, TM-EIAO

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the Measures?	Location of the measures	When to implement the Measures?	What requirements or standards for the measures to achieve?
		<ul> <li>where the influent is pumped.</li> <li>The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a silt/sediment trap. The silt/sediment traps should be incorporated in the permanent drainage channels to enhance deposition rates.</li> <li>The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94. The detailed design of the sand/silt traps should be undertaken by the Contractor prior to the commencement of construction.</li> <li>Construction works should be programmed to minimize surface excavation works during the rainy seasons (April to September). All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means.</li> <li>All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas.</li> <li>Measures should be taken to minimize the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, it should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.</li> <li>All open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than 50m3 should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, s</li></ul>					

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the Measures?	Location of the measures	When to implement the Measures?	What requirements or standards for the measures to achieve?
		<ul> <li>All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at every construction site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains.</li> <li>Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain.</li> <li>Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts.</li> <li>All fuel tanks and storage areas should be provided with locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby.</li> <li>Regular environmental audit on the construction site should be carried out in order to prevent any malpractices. Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the meander, wetlands and fish ponds.</li> </ul>					
S5.7	W2	<ul> <li>Sewage from Workforce</li> <li>Portable chemical toilets and sewage holding tanks should be provided for handling the construction sewage generated by the workforce. A licensed Contractor should be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance.</li> <li>Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment during the construction phase of the Project. Regular environmental audit on the construction site should be conducted in order to provide an effective control of any malpractices and achieve continual improvement of environmental performance on site. It is anticipated that sewage generation during the construction phase of the Project would not cause water quality impact after undertaking all required measures.</li> </ul>	Handling of site sewage	Contractor	All construction sites	Construction phase	WPCO, EIAO, TM-EIAO

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the Measures?	Location of the measures	When to implement the Measures?	What requirements or standards for the measures to achieve?
Waste I	Managemer	nt (Construction Waste)					
S7.6	WM1	Waste Reduction Measures Waste reduction is best achieved at the planning and design phase, as well as by ensuring the implementation of good site practices. The following recommendations are proposed to achieve reduction:  • segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling of materials and their proper disposal;  • proper storage and site practices to minimize the potential for damage and contamination of construction materials;  • plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste;  • sort out demolition debris and excavated materials from demolition works to recover reusable/recyclable portions (i.e. soil, broken concrete, metal etc.); and  • provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling.	Reduce waste generation	Contractor	All construction sites where practicable	Prior to the commencement of construction	Waste Disposal Ordinance
S7.6	WM2	Prepare Waste Management Plan and submit to the Engineer for approval	Minimize waste generation during construction	Contractor	All construction sites	Construction phase	Waste Disposal Ordinance
S7.6	WM3	Good Site Practice The following good site practices are recommended throughout the construction activities:  nomination of an approved personnel, such as a site manager, to be responsible for the implementation of good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site;  training of site personnel in site cleanliness, appropriate waste management procedures and concepts of waste reduction, reuse and recycling;  provision of sufficient waste disposal points and regular collection for disposal;  appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers;  regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors;	Minimize waste generation during construction	Contractor	All construction sites	Construction phase	Waste Disposal Ordinance
S7.6	WM4	Storage of Waste The following recommendation should be implemented to minimize the impacts:	Minimize waste from storage impacts	Contractor	All construction	Construction phase	Waste Disposal Ordinance

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the Measures?	Location of the measures	When to implement the Measures?	What requirements or standards for the measures to achieve?
		<ul> <li>waste such as soil should be handled and stored well to ensure secure containment;</li> <li>stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away;</li> <li>different locations should be designated to stockpile each material to enhance reuse;</li> </ul>			sites		
S7.6	WM5	Collection and Transportation of Waste The following recommendation should minimize the impacts:  • remove waste in timely manner;  • employ the trucks with cover or enclosed containers for waste transportation;  • obtain relevant waste disposal permits from the appropriate authorities; and  • disposal of waste should be done at licensed waste disposal facilities.	Minimize waste from storage impacts	Contractor	All construction sites	Construction phase	Waste Disposal Ordinance
S7.6	WM6	Excavated and C&D Material  Wherever practicable, C&D materials should be segregated from other wastes to avoid contamination and ensure acceptability at public filling areas or reclamation sites. The following mitigation measures should be implemented in handling the excavated and C&D materials:  • maintain temporary stockpiles and reuse excavated fill material for backfilling;  • carry out on-site sorting;  • deliver surplus artificial hard materials to Tuen Mun Area 38 recycling plant or its successor for recycling into subsequent useful products;  • make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate;  • implement a recording system for the amount of waste generated, recycled and disposed of for checking;  Standard formwork should be used as far as practicable in order to minimize the arising of C&D waste. The use of more durable formwork (e.g. metal hoarding) or plastic facing should be encouraged in order to enhance the possibility of recycling. The purchasing of construction materials should be carefully planned in order to avoid over ordering and wastage. Wheel wash facilities have to be provided at the site entrance before the trucks leaving the works area.	Minimize waste impacts from excavated and C&D materials	Contractor	All construction sites	Construction phase	Land (Miscellaneous Provisions)     Ordinance     Waste Disposal Ordinance     ETWB TCW No. 19/2005
S7.6	WM8	Chemical Waste  If chemical wastes are produced at the construction site, the Contractors should register with EPD as chemical waste producers. Chemical wastes should be stored in appropriate containers and collected by a licensed chemical waste Contractor. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction phase	Waste Disposal (Chemical Waste) General)     Regulation     Code of Practice on the Packaging, Labelling and

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the Measures?	Location of the measures	When to implement the Measures?	What requirements or standards for the measures to achieve?
		waste that cannot be recycled should be disposed of at either the Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.					Storage of Chemical Waste
S7.6	WM9	General Waste     General refuse should be stored in enclosed bins separately from construction and chemical wastes. Recycling bins should also be placed to encourage recycling.     Preferably enclosed and covered areas should be provided for general refuse collection and routine cleaning for these areas should also be implemented to keep areas clean.     A reputable waste collector should be employed to remove general refuse on a daily basis.	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction phase	Waste Disposal Ordinance
S7.6	WM10	Sewage     The WMP should document the locations and number of portable chemical toilets depending on the number of workers, land availability, site condition and activities.     Regularly collection by licensed collectors should be arranged to minimize potential environmental impacts.	Minimize production of sewage impacts	Contractor	All construction sites	Construction phase	Waste Disposal Ordinance
S7.6	WM11	<b>Topsoil reuse</b> – Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where practical. This is considered a general measure for good site practice.	Good site practice	Contractor / Project Proponent	Onsite	Construction Phase	ETWB Technical Circular (Works) No.29/2004
Landsc	ape and Vis	sual (Construction)	•		•		
S.12.9 MM3	LV5	Open Space Provision - the principles adopted in the RODP planning ensure that public open space systems are incorporated. All requirements for open space areas stipulated in the planning documents for the formulation of the Preliminary Layout Plan should be adhered to.	Reprovision of open space. Enhance visual amenity of the area and improve the overall landscape character	Government Developer / Detailed Design Consultant / Contractor	Onsite as stipulated in the planning documents for the formulation of the Preliminary Layout Plan		Hong Kong Planning Standards and Guidelines (HKPSG) issued by the Planning Department (As at Aug 2011); Sustainable Building Design Guidelines
S.12.9 MM4	LV6	Tree Protection & Preservation – Exiting trees to be retained within the Project Site should be carefully protected during construction. In particular OVTs will be preserved according to ETWB Technical Circular (Works) No. 29/2004. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to	Protect and Preserve Trees	Government Developer / Detailed Design Consultant / Contractor	Onsite as stipulated in the planning documents for the formulation of	Prior to Construction and Construction Phase	ETWB Technical Circular Works (TCW) No. 29/2004 and 3/2006

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the Measures?	Location of the measures	When to implement the Measures?	What requirements or standards for the measures to achieve?
		undertaking any works adjacent to all retained trees, including trees in Contractor's works areas.  A detailed tree survey will be carried out for the Tree Removal Application (TRA) process which will be carried out at the later detailed design stage of the Project. The detailed tree survey will propose which trees should be retained, transplanted or felled and will include details of tree protection measures for those trees to be retained.			the Preliminary Layout Plan		
S.12.9 MM5	LV7	Tree Transplantation – Trees unavoidably affected by the Project works should be transplanted where practical. Trees should be transplanted straight to their final receptor site and not held in a temporary nursery as far as possible. A detailed Tree Transplanting Specification shall be provided in the Contract Specification, where applicable. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the project programme.  A detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBTC 2/2004 and 3/2006 and final locations of transplanted trees should be agreed prior to commencement of the work.  For trees associated with highways e.g. roadside planting along highways, that are unavoidably affected and should be transplanted, HyD HQ/GN/13 'Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit' should be referred to.		Government Developer / Detailed Design Consultant / Contractor	Onsite where possible. Otherwise consider offsite locations	Prior to Construction, Construction Phase & Maintenance in Operation Phase	ETWB TCW 3/2006 and 2/2004 HyD HQ/GN/13 Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit
S.12.9 MM7	LV9	Compensatory Planting – Compensatory tree planting for felled trees shall be provided to the satisfaction of relevant Government departments. Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Removal Application process under ETWBTC 3/2006.  Compensatory planting is proposed at the potential open areas such as open spaces, amenity areas, open areas of the streetscapes, as well as the open areas within development lots.  Compensatory planting for shrubs should be considered in suitable locations. Native species such as Melastoma malabathricum, Diospyros vaccinioides, Gardenia jasminoides, Ixora chinensis, Ligustrum sinense, Litsea rotundifolia, Melastoma dodecandrum, Atalantia buxifolia, Rhodomyrtus tomentosa, Rhaphiolepis indica, and Rhododendron simsii are suggested.	Compensate for trees and shrubs lost due to the Project.	Government Developer / Detailed Design Consultant / Contractor	Onsite where possible. Otherwise consider offsite locations	Prior to Construction, Construction Phase & Maintenance in Operation Phase	ETWB TCW 3/2006 and 2/2004
S.12.9 MM9	LV11	Vertical Greening – Planting of climbers to grow up vertical surfaces were appropriate (e.g. building edges, piers).	Soften hard surfaces and	Project Proponent /	On appropriate	Prior to Construction,	ETWB TCW No. 11/2004 – Cyber

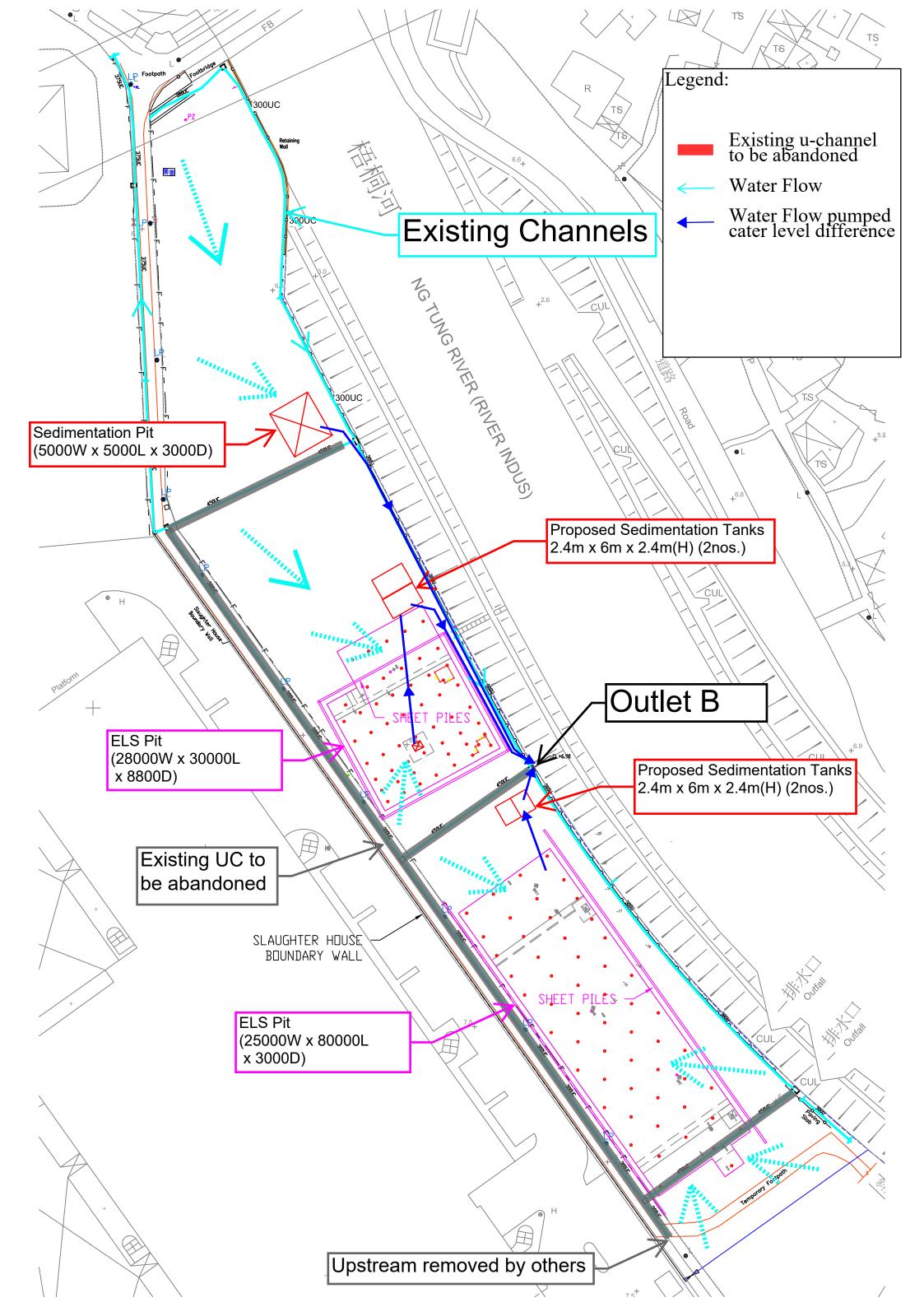
EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the Measures?	Location of the measures	When to implement the Measures?	What requirements or standards for the measures to achieve?
			facilities	Detailed Design Consultant / Contractor / Maintenance Authority	structures	Construction Phase & Maintenance in Operation Phase	Manual for Greening
S.12.9 MM10	LV12	Green Roof – Roof greening where appropriate should be established on proposed buildings as per the guidelines stated. These guidelines provide further details including information regarding structural loading, design, maintenance, etc. considerations as well as providing information on what types of plants might be suitable.	Reduce exposure to untreated concrete surfaces and particularly mitigate visual impact to VSRs at high levels. Provide greening.	Project Proponent / Detailed Design Consultant / Contractor / Maintenance Authority	On appropriate buildings	Prior to Construction, Construction Phase & Maintenance in Operation Phase	CIBSE HK Branch, Technical Guidelines for Green Roof Systems in Hong Kong (2011); ArchSD/Urbis Study on Green Roof Application in HK (2007)
S.12.9 MM11	LV13	Screen Planting – Tall screen/buffer trees and shrubs should be planted. This measure may additionally form part of the compensatory planting.	To screen proposed structures such as roads and buildings. Improve compatibility with the surrounding environment and create a pleasant pedestrian environment		Along roads, around suitable built structures, or around VSRs to contain their view out to the NDA Maintenance and create a pleasant Contractor structures	•	ETWBTC 3/2006
S12.9 MM14.5	LV20	Screen Hoarding – Screen hoarding shall be erected along areas of the construction works site boundary where the works site borders publically accessible routes and/or is close to visually sensitive receivers (VSRs). It is proposed that the screening be compatible with the surrounding environment and where possible, nonreflective, recessive colours be used.	To screen undesirable views of the works site.	Contractor	Throughout NDAs	Construction Phase	
		Any works areas near the ecological sensitive areas should erect 2m high dull green site boundary fence. Details can refer to the ecological impact assessment (Chapter 13 of the EIA report).					
S12.9	LV21	Light Control - Construction day and night time lighting should be controlled to	To minimize glare	Government /	Throughout	Construction	

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the Measures?	Location of the measures	When to implement the Measures?	What requirements or standards for the measures to achieve?
MM14.6		minimize glare impact to adjacent VSRs during the Construction phase.	impact to adjacent	Developer /	NDAs	and Operation	
		Street and night time lighting shall also be controlled to minimize glare impact to adjacent VSRs during the operation phase.	VSRs	Contractor		Phases	
Ecology	(Construc	tion Phase)	•				
S.13.9	E13	Review design and construction methods for bridges, especially those on the Sheung Yue and tidal Ng Tung Rivers, and adopt measures which minimize impacts on rivers and disturbance and fragmentation impacts on fauna.	Minimize impacts on rivers and disturbance and	Detailed	Along and within the Sheung	Detailed design and construction	TM-EIAO.
		No construction during ardeid breeding season (1 March to 31 July) along Sheung Yue River north and east of KTN area D1-5 and east of D1-9 and C2-3 and restriction of working hours on new pedestrian bridges over the Sheung Yue River and tidal Ng Tung River to 09.00 to 17.30 during the ardeid breeding season (1 March to 31 July).	fragmentation impacts on fauna.	Design Consultant / Contractor	Yue, Ng Tung and Shek Sheung Rivers	phases.	
		Provision of alternative foraging habitat along main river channels for large waterbirds.					
S.13.9	E16	Creation of Green Corridors along the Sheung Yue, Ng Tung and Shek Sheung Rivers, retention and provision of screen plantings where feasible; provision of Open Space areas and development areas along river corridors;	Minimize disturbance to waterbirds using Ng		Ng Tung, Sheung Yue and Shek	Detailed design and construction	TM-EIAO.
		Design and erection of 2m high solid dull green site barrier fence between river channel and any active works area along or adjacent to Ng Tung, Sheung Yue and Shek Sheung Rivers.	Tung, Sheung Yue and Shek Sheung River channels.	Contractor	Sheung Rivers	phases.	
		Ng Tung, Sheung Yue and Shek Sheung Rivers screen planting.			_		
S.13.9	E19	Use opaque, non-transparent, non-reflective noise barriers for all construction sites.	Minimize mortality impacts on birds.	Contractor	All construction	Construction phase.	TM-EIAO.
		Unnecessary lighting should be avoided.			sites		



## Appendix K

Site Temporary Drainage Plan in the Reporting Period





## Appendix L

**Waterbirds Survey Report for the Reporting Month** 



WSD Contract No. 3/WSD/20 - Reclaimed Water Supply to Sheung Shui and Fanling - Provision of EM&A (Ecological)

Monitoring

Monthly Report for July 2022 (Issue 1)

Job Ref.: 21/2063/582 AUES-SWHTSE

Date: 8<sup>th</sup> August 2022



## WSD Contract No. 3/WSD/20 - Reclaimed Water Supply to Sheung Shui and Fanling - Provision of EM&A (Ecological) Monitoring

Monthly Report for July 2022

(Issue 1)

August 2022

	Name	Signature
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Date:	8 <sup>th</sup> August 2022	U

Job Ref.: 21/2063/582 AUES-SWHTSE

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#### 1 INTRODUCTION

- 1.1 According to Section 12.3.2.5 of "Updated EM&A Manual for Advance And First Stage Works of Kwu Tung North and Fanling North New Development Areas", monitor of measures to minimise disturbance to waterbirds on Ng Tung, Sheung Tue and Shek Sheung Rivers is required.
- 1.2 aec Ltd. has been appointed by Action-United Environmental Services & Consulting (AUES) to conduct weekly transect bird surveys at high and low tides along Ng Tung River, Sheung Yue River and Shek Sheung River; and identify sources of actual and potential disturbances to birds due to construction activities of WSD Contract No. 3/WSD/20 Reclaimed Water Supply to Sheung Shui and Fanling. As instructed by the Contractor, the commencement date of the survey was in the week of 10<sup>th</sup> January 2022. This monthly report summarises the monitoring findings in July 2022.

#### 2 MONITORING METHODOLOGY

2.1 The survey methodology references the methodology stated in approved Baseline Monitoring Report (Ecology) (Version 1) (prepared by Cinotech Consultants Limited (2019)) under "Contract No. SPW 08/2019 – Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1". Three transects and seven point count locations were selected within the 500m boundary of Ng Tung, Sheung Yue and Shek Sheung River. These locations are shown in **Figure 1** and summarized in **Table 1**.

**Table 1** Ecological Monitoring Stations

Monitoring Stations	Descriptions	Influenced by Tidal Action	
Transect T1			
Transect T2			
Point Count Location P1	Along Ng Tung Biyor	No	
Point Count Location P2	Along Ng Tung River	NO	
Point Count Location P3			
Point Count Location P4			
Point Count Location P5	At Shek Sheung River	No	
Foint Count Location F3	(Low-flow Channel)	NO	
Transect T3	Along Shek Sheung River &	Yes	
Transect 15	Sheung Yue River	163	
Point Count Location P6	At Shek Sheung River	Yes	
Point Count Location P7	At Intersection between Sheung	Yes	
Point Count Location P7	Yue and Shek Sheung River	res	

- 2.2 Surveys were conducted on a weekly basis at both high and low tides (it is considered high tide when tidal levels are above 1.5m and low tide when tidal level are below 1.5m at Tsim Bei Tsui Station).
- 2.3 All avifauna species that were seen or heard were identified and quantified along transects and at point count locations. Survey data would be recorded continuously by the surveyor as they walk along the transects, while survey data of each point count location would be collected for 5-minutes after surveyor reaches the designated point count location. During the surveys, the utilisation of Ng Tung River, Sheung Yue River and Shek Shui River and their immediate environs/habitats by waterbirds will be focused. For comparison and data analysis, the transect routes and point count locations follows Figure 1 of the approved Baseline Monitoring Report (Ecology) (Version 1). Locations of T1, T2, and P1 to P4 were adjusted to the opposite side of Ng Tung River as the original transects were inaccessible due to various construction projects.



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2.4 Noticeable behaviours such as breeding, nesting, roosting, feeding and presence of recently fledged juveniles were recorded and reported. In the case which such behaviours were observed for species of conservation importance, the Resident Engineer (RE), the Contractor and the Independent Environmental Checker (IEC) would be immediately notified after the survey such that the Contractor could review the current construction programme and minimize disturbances due to construction activities.

2.5 Weather conditions, tidal information, time of the survey and other noticeable activities occurring within the vicinity of the survey area were recorded.

#### 3 ANALYTICAL METHODOLOGY

3.1 Total number of waterbirds and six representative waterbird species (listed in **Table 2**) are used as an indicator of the level disturbance to waterbirds at each of the survey location. Species listed as wetland-dependent according to Carey *et al.* (2001) are defined as waterbirds. A significant decline in the abundance of all or representative waterbirds would indicate a high level of disturbance.

**Table 2** Representative Waterbirds

Common Name	Species Name	Chinese Name
Chinese Pond Heron	Ardeola bacchus	池鷺
Eastern Cattle Egret	Bubulcus coromandus	牛背鷺
Grey Heron	Ardea cinerea	蒼鷺
Great Egret	Ardea alba	大白鷺
Little Egret	Egretta garzetta	小白鷺
Great Cormorant	Phalacrocorax carbo	普通鸕鷀

- 3.2 Survey data from each month is compared to the baseline monitoring data. When a decline in the total number of Waterbirds or the number of the representative Waterbird species is recorded the survey data would be compared to the baseline data (from Shek Wu Hui Effluent Polishing Plant Baseline Monitoring Report (Ecology) by Cinotech Consultants Limited, 2019) using a two-sample one-tailed Student's t-test assuming unequal variance to analyse whether the decline is significant.
- 3.3 If the collected data for the reporting month shows a significant difference at the 95% confidence level, the action level will be triggered. If the collected data for the reporting month shows a significant difference at the 99% confidence level, the limit level is triggered and corresponding suggestions would be given to minimize the disturbances according to **Table 3**.

**Table 3** Action and Limit Levels and Responses to Evidence of Disturbance to Waterbirds using Ng Tung, Sheung Yue and Shek Sheung Rivers during Construction Phase

Action Level	Response	Limit Level	Response
Decline in numbers	Investigate cause(s) and	Decline in numbers of all	Investigate cause(s) and
of all waterbird species	if cause(s) identified as	waterbird species	if cause(s) identified as
relative to numbers	related to NDAs project	relative to numbers	related to the NDAs
during Baseline	instigate remedial action	during Baseline	project instigate
Monitoring such that the	to remove or reduce	Monitoring such that the	remedial action.
Action Level response is	source of disturbance.	Limit Level response is	Review and adjust
triggered.		triggered.	project's Long Valley
			Nature Park (LVNP)
			management measures



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Action Level	Response	Limit Level	Response
			to improve conditions
			for affected species.
Decline in numbers of	Investigate cause(s) and	Decline in numbers of	Investigate cause(s) and
any one Waterbird	if cause(s) identified as	any one Waterbird	if cause(s) identified as
species occurring in	related to NDAs project	species occurring in	related to the NDAs
significant numbers*	instigate remedial action	significant numbers*	project instigate
during Baseline	to remove or reduce	during Baseline	remedial action.
Monitoring such that the	source of disturbance.	Monitoring such that the	Review and adjust
Action Level response is		Limit Level response is	project's LVNP
triggered.		triggered.	management measures
			to improve conditions
			for affected species.

Note: Whether numbers are significant depend on species and season after collection and evaluation of baseline survey data.

3.4 In order to increase the sample size and reduce the random error on each survey day, survey data would be collectively analysed on a monthly basis. The collective data of each month is also compared to the baseline data of the respective month and season instead of the entire data set, to account for the seasonal variation in the abundance of waterbirds. In this study, the Winter season is defined as October to March, while the Summer season is defined as April to September.

#### 4 RESULTS

4.1 The weather conditions and tide levels on the survey dates are listed in the table below.

Table 4 Weather Conditions and Tidal Information of Survey Dates in the Reporting Month

	High	Tide			Low	Tide	
Date	Time	Tide (m)	Weather	Date	Time	Tide (m)	Weather
4-Jul-22	10:00	1.83	Sunny	6-Jul-22	7:30	1.29	Sunny
14-Jul-22	9:00	3.01	Sunny	15-Jul-22	15:30	1.4	Sunny
20-Jul-22	13:00	1.65	Sunny	18-Jul-22	8:00	1.2	Sunny
30-Jul-22	9:00	2.26	Sunny	28-Jul-22	13:00	1.44	Sunny

4.2 Abundance and diversity of total bird species and key species are summarized in **Tables 5** and **6** respectively. Detailed list of avifauna recorded is provided in **Appendix A**.

Table 5 Total Bird Species and Abundance at Point Count Locations in the Reporting Month

Category	Number of Species	Abundance
All Avifauna	32	728
Waterbirds	11	159

Table 6 Abundance of Representative Waterbirds at Point Count Locations in the Reporting Month

Common Name	Species Name	Chinese Name	Abundance
Chinese Pond Heron	Ardeola bacchus	池鷺	58
Eastern Cattle Egret	Bubulcus coromandus	牛背鷺	4
Grey Heron	Ardea cinerea	蒼鷺	5
Great Egret	Ardea alba	大白鷺	19
Little Egret	Egretta garzetta	小白鷺	57
Great Cormorant	Phalacrocorax carbo	普通鸕鷀	0



#### 5 ANALYSIS

5.1 The result of Student's t-test for all waterbirds and representative waterbirds are compiled in **Table 7** respectively. Further details are provided in **Appendices B** and **C**.

**Table 7** T-test Result for Waterbirds in the Reporting Month

	Monthly				Seasonal					
Category	T-value	df	р	Action Level	Limit Level	T-value	df	р	Action Level	Limit Level
All Waterbirds	-0.818	4	0.230			-0.664	3	0.277		
Chinese Pond Heron	-0.823	5	0.224			-0.455	3	0.340		
Eastern Cattle Egret	-0.635	5	0.277			-1.789	8	0.056		
Grey Heron			No decline	2		No decline				
Great Egret			No decline				No decline	<u>;</u>		
Little Egret	-3.684	6	0.005	*	*	-2.884	4	0.022	*	
Great Cormorant		•	No decline	;				No decline	)	•

<sup>\* =</sup> level triggered

- 5.2 Only the decline in Little Egrets have triggered the Limit level by monthly standards and Action Level by seasonal standard.
- 5.3 Similar to the account in the report of previous months, another 56 Little Egrets have been recorded from the transect count in this reporting month, showing that a considerable number of Little Egrets are still active within the survey area, and are simply excluded from the analysis.
- Additionally, as suggested in previous reporting months, the change in habitats of Long Valley Nature Park (e.g. maintenance of shallow water in the reprofiled agricultural land or low-lying areas) is likely to attract more birds to be active within LVNP instead of the Study Area. This hypothesis is supported by the accounts of the surveyor, who observed a number of ardeids in flight above LVNP, which are excluded from both the point count and transect counts due to extent of the Study Area. In addition, the tidal influence of the Rivers may restrict the availability of foraging and roosting sites for the waterbirds. This may further encourage the waterbirds utilising the more attractive habitats in the nearby LVNP.
- 5.5 Given that the anthropogenic activities recorded were similar to the previous month, and no large instances of disturbance (only use of crane and scaffolding works) caused by the construction works of the project were recorded by the surveyor, it is suggested that the decline in numbers of Little Egrets are not related to the construction works.
- 5.6 Monitoring work will be continued next month to evaluate any construction impact on waterbirds. The construction site should continue keeping the best site practice in noise control to minimize disturbance caused to waterbirds.

#### 6 OBSERVATIONS

- 6.1 Waterbird behavior observed during ecological monitoring is listed below:
  - Flying
  - Resting
  - Foraging
- 6.2 The anthropogenic activities observed during ecological monitoring is listed in **Table 8.**



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Table 8 Observations during the Ecological Monitoring in the Reporting Month

Location	Observ	vations
Location	Project Related	Non-project Related
T1 (PC1, PC2)	/	Fishing
T2 (PC3, PC4)	Use of crane, scaffolding	Fishing
T3 (PC6, PC7)	/	Fishing

#### 7 REFERENCES

Carey, G.J., Chalmers, M.L., Diskin, D.A., Kennerley, P.R., Leader, P.J., Leven, M.R., Lewthwaite, R.W., Melville, D.S., Turnbull, M., and Young, L. 2001. The Avifauna of Hong Kong. Hong Kong Bird Watching Society, Hong Kong.

Cinotech Consultants Limited. 2019. Contract No. SPW 08/2019 Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1 Baseline Monitoring Report (Ecology) (Version 1). Accessed from <a href="https://shekwuhui.cinotech.hk/?page\_id=24">https://shekwuhui.cinotech.hk/?page\_id=24</a> in Jan 2022.



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Appendix A Recorded Bird Species and their Abundance in the Reporting Month

Common Name	Chinese Name	Scientific Name	Waterbird	Point Count Abundance	Transect Abundance	
Chinese Pond Heron	池鷺	Ardeola bacchus Y 58			+++++	
Eastern Cattle Egret	牛背鷺	Bubulcus coromandus	Υ	4	+	
Grey Heron	蒼鷺	Ardea cinerea	Υ	5	+	
Great Egret	大白鷺	Ardea alba	Y	19	+++	
Little Egret	小白鷺	Egretta garzetta	Υ	57	+++++	
Crested Serpent Eagle	蛇鵰	Spilornis cheela	N		+	
Black Kite	黑鳶	Milvus migrans	N	1	+	
White-breasted Waterhen	白胸苦惡鳥	Amaurornis phoenicurus	Υ	1	+	
Black-winged Stilt	黑翅長腳鷸	Himantopus himantopus	Y	1	+++	
Common Sandpiper	磯鷸	Actitis hypoleucos	Y	4	+	
Common Greenshank	青腳鷸	Tringa nebularia	Y		+	
Spotted Dove	珠頸斑鳩	Spilopelia chinensis	N	61	+++++	
Greater Coucal	褐翅鴉鵑	Centropus sinensis	N	2	+	
Asian Koel	噪鵑	Eudynamys scolopaceus	N	7	+	
Asian Barred Owlet	斑頭鵂鶹	Glaucidium cuculoides	N	1		
House swift	小白腰雨燕	Apus nipalensis	N		+	
White-throated Kingfisher	白胸翡翠	Halcyon smyrnensis	Y	5	+	
Common Kingfisher	普通翠鳥	Alcedo atthis	Y	4	+	
Pied Kingfisher	斑魚狗	Ceryle rudis	Y		+	
Long-tailed Shrike	棕背伯勞	Lanius schach	N	1	+	
Black Drongo	黑卷尾	Dicrurus macrocercus	N		+	
Red-billed Blue Magpie	紅嘴藍鵲	Urocissa erythroryncha	N		+	
Oriental Magpie	喜鵲	Pica serica	N	6	+	
Collared Crow	白頸鴉	Corvus torquatus	Υ	1	+	
Large-billed Crow	大嘴烏鴉	Corvus macrorhynchos	N		+	
Cinereous Tit	蒼背山雀	Parus cinereus	N	13	++	
Red-whiskered Bulbul	紅耳鵯	Pycnonotus jocosus	N	52	+++++	
Chinese Bulbul	白頭鵯	Pycnonotus sinensis	N	23	+++	
Barn Swallow	家燕	Hirundo rustica	N	9	+++++	
Yellow-bellied Prinia	黃腹鷦鶯	Prinia flaviventris	N	21	+	
Common Tailorbird	長尾縫葉鶯	Orthotomus sutorius	N	9	++	
Masked Laughingthrush	黑臉噪鶥	Pterorhinus perspicillatus N		19	++++	
Swinhoe's white-eye	暗綠繡眼鳥	Zosterops simplex	N	22	+++++	
Crested Myna	八哥	Acridotheres cristatellus	N	239	+++++	
Black-collared Starling	黑領椋鳥	Gracupica nigricollis N		23	+++++	
White-shouldered Starling	灰背椋鳥	Sturnia sinensis N			+	
Oriental Magpie Robin	鵲鴝	Copsychus saularis	N	15	++	
Eurasian Tree Sparrow	樹麻雀	Passer montanus	N	29	+	
Scaly-Breasted Munia	斑文鳥	Lonchura punctulata	N	6	+	
White Wagtail	白鶺鴒	Motacilla alba	N	10	+++	
		Total Point Count Abundance	<u> </u>	728		

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Common Name	Chinese Name	Scientific Name	Waterbird	Point Count Abundance	Transect Abundance
		Total Waterbirds		159	

For transect abundance, +: 1-10, ++: 11-20, +++: 21-30, ++++: 31-40, +++++: >40



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#### Appendix B Total Waterbird Abundance from Point Count

Survey Information				Number of Waterbirds			
Week	Date	Time	Tide Level	Individuals Recorded	Total		
1	4-Jul-22	10:00	High	8	30		
1	6-Jul-22	7:30	Low	22	30		
2	14-Jul-22	9:00	High	14	30		
2 15-J	15-Jul-22	15:30	Low	16	30		
3	18-Jul-22	8:00	Low	29	35		
3	20-Jul-22	13:00	High	6	33		
4	28-Jul-22	13:00	Low	47	64		
4	30-Jul-22	9:00	High	17	64		
	•	•	Survey Average		39.75		
Baselir		Pacolino	July Average	47.25			
			Daseille	Summer Average	45.34		



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#### Appendix C Abundance of Representative Waterbirds from Point Count

Representa	Recorded Abundance (Jul 2022)					Baseline			
Common Name	Species Name	Week 1	Week 2	Week 3	Week 4		Average	July Average	Summer Average
Chinese Pond Heron	Ardeola bacchus	9	13	11	25		14.5	18	16.18
Eastern Cattle Egret	Bubulcus coromandus	0	0	0	4		1	1.75	3.32
Grey Heron	Ardea cinerea	1	1	1	2		1.25	0	0.55
Great Egret	Ardea alba	4	3	6	6		4.75	2.5	2.61
Little Egret	Egretta garzetta	14	11	12	20		14.25	24.75	20.53
Great Cormorant	Phalacrocorax carbo	0	0	0	0		0	0	0



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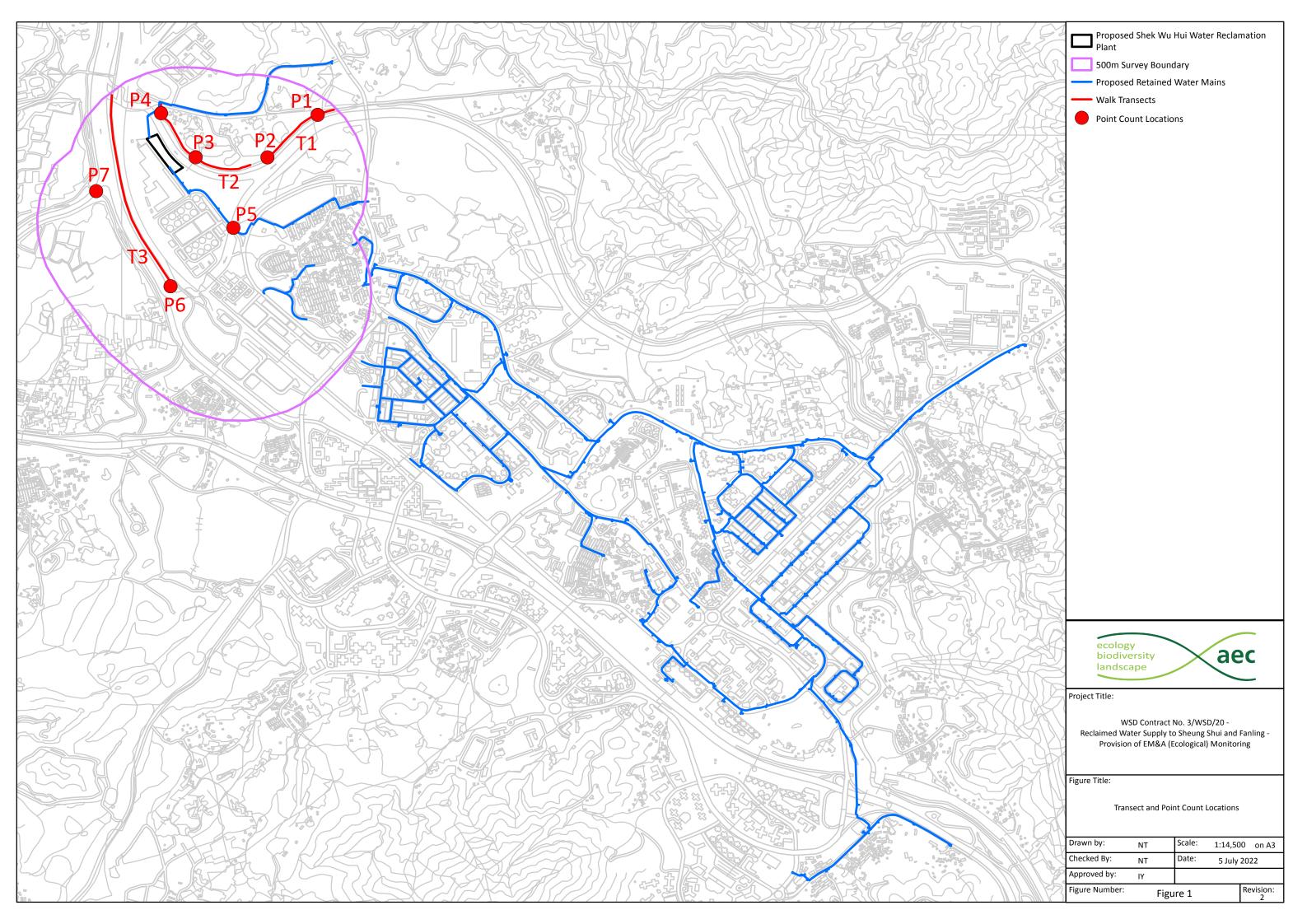
#### **Appendix D** Survey Photos

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## Figure 1 Transect and Point Count Location





# Figure 1a Transect and Point Count Location (Zoomed In)



