



Our Ref.: CJO-3113

14 August 2023

The EIA Ordinance Register Office, Environmental Protection Department, 27th floor, Southorn Centre, 130 Hennessy Road, Wanchai, Hong Kong

CONTRACT NO. 1/WSD/19 & 6/WSD/21

#### IN-SITU REPROVISIONING OF SHA TIN WATER TREATMENT WORKS (SOUTH WORKS) – WATER TREATMENT WORKS AND ANCILLARY FACILITIES Environmental Permit EP-494/2015

We are enclosing the following information for your kind considerations of our application:

- (a) Three hard copies,
- (b) Two copies of the 89<sup>th</sup> monthly Environmental Monitoring and Audit (EM&A) Report (Rev.0). (Register No.: AEIAR-187/2015)

Please feel free to contact us should you need further information.

Yours sincerely, Acumen Environmental Engineering and Technologies Co. Ltd.

Mr. Vega Wong 2698 8032

c.c. Water Supplies Department c.c. AECOM





Your ref: Our ref: CJO-3113

#### <u>By hand</u>

Chief Engineer /Project Management Water Supplies Department 46/F., Immigration Tower 7 Gloucester Road, Wanchai (Attn: Mr. H C Wong, Heinz)

14 August 2023

Dear Sir,

### In-Situ Reprovisioning of Sha Tin Water Treatment Works (South Works) – Water Treatment Works and Ancillary Facilities Environmental Permit EP-494/2015 Submission of 89<sup>th</sup> monthly EM&A Report

In accordance with the Condition 3.4 of the Environmental Permit (No. EP-494/2015), we submit herewith 3 hard copies and 2 electronic copies of the 89<sup>th</sup> monthly Environmental Monitoring and Audit (EM&A) Report (Rev.0) for your processing. I certified and confirmed the submission of this monthly EM&A Report had complied with the requirements as set out in the approved Environmental Monitoring and Audit (EM&A) Manual of the EIA Report (Register No.: AEIAR-187/2015).

Yours faithfully,

Mr. Wong, Vega, T. L. Environmental Team Leader

c.c. Independent Environmental Checker



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Your Ref: 60479142/C/fyw2308141

#### By Email

Chief Engineer/Project Management Water Supplies Department 46/F., Immigration Tower 7 Gloucester Road, Wanchai

Attn: Mr. Edmund Huen

14 August 2023

Dear Sir,

<u>Contract No.1/WSD/19</u> In-situ reprovisioning of Sha Tin Water Treatment Works (South Works) – Water Treatment Works and Ancillary Facilities <u>Contract No.6/WSD/21</u> In-situ reprovisioning of Sha Tin Water Treatment Works (South Works) – Administration Building

#### Submission of 89th Monthly EM&A Report for July 2023

Reference is made to Environmental Team (ET)'s 89<sup>th</sup> Monthly EM&A Report for July 2023 (Rev. 0) submitted on 10 and 14 August 2023.

In accordance with the Condition 3.4 of the Environmental Permit (No.EP-494/2015), I verified and confirmed the submission of this Monthly EM&A Monitoring Report as compiled with the requirements as set in the approved Environmental Monitoring and Audit (EM&A) Manual of the EIA Report (Register No.: AEIAR-187/2015).

Should you have any queries, please feel free to contact the undersigned at 3922 9366.

Yours faithfully, AECOM Asia Co. Ltd.

Y W Fung Independent Environmental Checker

c.c. Environmental Team Leader (via email)



Water Supplies Department



## MONTHLY ENVIRONMENTAL MONITORING AND AUDIT

## (EM&A) REPORT (NO. 89)

FOR

## CONTRACT NO. 1/WSD/19 & 6/WSD/21 IN-SITU REPROVISIONING OF SHA TIN WATER TREATMENT WORKS (SOUTH WORKS) – Water Treatment Works and Ancillary Facilities

(Rev. 0)

Acumen Environmental Engineering & Technologies Company Limited

Project no.: CJO-3113

## MONTHLY ENVIRONMENTAL MONITORING AND AUDIT (EM&A) REPORT (NO. 89)

#### FOR

## Contract No. 1/WSD/19 & 6/WSD/21 In-situ Reprovisioning of Sha Tin Water Treatment Works (South Works) – Water Treatment works and Ancillary facilities

	Name	Signature
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Reviewed by	Ms. Choy, Yiting, Y. T.	yiting.
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Verified & Confirmed by	Mr. Fung, Y. W. Independent Environmental Checker (IEC)	8

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#### EXECUTIVE SUMMARY

- A.1 Pursuant to the Environmental Impact Assessment (EIA) Ordinance, the Director of Environmental Protection (DEP) granted the Environmental Permit (No. EP- 494/2015) to the Water Supplies Department (WSD) to construct and operate the designated project for "In-situ Reprovisioning of Sha Tin Water Treatment Works - South Works" ("The Project").
- A.2 Under Contract No. 1/WSD/19 and 6/WSD/21, ATAL CW MH JV (ACMJV) is commissioned by WSD to undertake the construction of the main works while AECOM Asia Company Limited was appointed by WSD as the Engineer. For implementation of the environmental monitoring and audit (EM&A) programme under the Contract, Acumen Environmental Engineering & Technologies Company Limited was appointed by ACMJV as the Environmental Team (ET). AECOM Asia Company Limited was also employed by the WSD as the Independent Environmental Checker (IEC).
- A.3 The construction phase of Contract No. 3/WSD/15 commenced on 30 October 2015 for completion by 31 December 2020. The construction phase of Contract No. 1/WSD/19 commenced on 01 January 2021. The construction phase of Contract No. 6/WSD/21 commenced on 16 March 2022. The impact monitoring of the EM&A programme, including air quality, noise, water quality monitoring as well as environmental site inspections, commenced on 17 February 2016.
- A.4 This is the 89<sup>th</sup> monthly Environmental Monitoring and Audit Report for the Project which covers the period from 1 to 31 July 2023 (the reporting period) for Contract No. 1/WSD/19 and 6/WSD/21.
- A.5 For Contract No. 1/WSD/19, as informed by the Contractor, major activities in the reporting period included:
  - Major ELS Work (S1F, S2F, Ozone Building, SWPS, RMF)
    - ♦ Excavation
    - ♦ Soil nail installation
    - ♦ Lagging wall construction
    - ♦ Strut and waling installation
    - $\diamond$  Pre-loading works
    - $\diamond$  Plate load tests
  - · Grout curtain
  - WET structure construction, top slab construction, water test
  - S1F and S2F:
    - ♦ Formation preparation (dewatering)
      - $\diamond$  Blinding construction
      - ♦ Drilling works for earthing rods
    - $\diamond$  Structure construction
  - Demolition of TWRT
  - Drilling works for King Posts
  - Filter bed demolition and backfilling
  - King Post installation work
  - Valve chamber for M1-5 water pipe diversion
  - Wall A & B construction works
  - Fencing construction works
  - Landscape works
  - Installation of under structures pipes
  - Installation of temporary steel decking at S2F
  - Installation of tower crane

- A.6 For Contract No. 6/WSD/21, as informed by the Contractor, major activities in the reporting period included:
  - Waterproofing Works
  - Carry Out Excavation Down to + 23.3mPD
  - Concreting for Raft Slab (LG/F Level)
  - Steel Plate Welding to Sheetpile for Waterproofing Works
  - Carry Out Excavation to Final Excavation Level +21.0mPD
  - MIC Installation
  - Excavation to Bottom Rockfill Level & Rockfill Replacement Work
  - Town Crane installation
- A.7 Environmental monitoring activities under the EM&A program in this reporting period are summarized below

Issues	Environmental Monitoring Parameters / Inspection	Occasions
Air	1-Hour TSP	15
Noise	L <sub>eq(30mins)</sub> Daytime	5
Water	Water Sampling	13
Quality	water Sampning	15
Inspection /	ET Regular Environmental Site Inspection	5
Audit	IEC Monthly Environmental Site Audit	1

- A.8 No exceedance of air quality and noise monitoring was recorded in this reporting period. There were 0 exceedance in action level and 3 exceedances in limit level for water quality monitoring was recorded in this reporting period.
- A.9 No environmental complaint was received via EPD in this reporting period.
- A.10 No notification of any summons and successful prosecutions was received in this reporting period.
- A.11 No reporting change was made in this reporting period.
- A.12 EPD site inspections were conducted on 25 July 2023 and 31 July 2023 in the reporting period.
- A.13 As informed by the Contractor, the major works for Contract No. 1/WSD/19 between August 2023 to October 2023 will be:
  - Major ELS Work (S1F, S2F, Ozone Building, SWPS, RMF)
    - $\diamond$  Excavation
    - $\diamond$  Soil nail installation
    - ♦ Lagging wall construction
    - $\diamond$  Strut and waling installation
    - $\diamond$  Pre-loading works
    - $\diamond$  Plate load tests
  - Grout curtain
    - WET structure construction, top slab construction, water test
  - S1F, S2F and TWRT:
    - ♦ Formation preparation (dewatering)
    - $\diamond$  Blinding construction
    - $\diamond$  Drilling works for earthing rods
    - $\diamond$  Structure construction
  - Demolition of TWRT
  - Drilling works for King Posts
  - King Post installation work

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- Valve chamber for M1-5 water pipe diversion
- Wall A & B construction works
- Fencing construction works
- Landscape works
- Installation of under structures pipes
- Installation of temporary steel decking at S2F
- ABWF Works for 6 major buildings
- Scaffolding Works for WET ABWF & Metal Works
- Structural Steelworks for WET
- Excavation for Stainless Steel Pipework under Structures of Six Major Buildings in Portion A
- A.14 As informed by the Contractor, the major works for Contract No. 6/WSD/21 between August 2023 to October 2023 will be:
  - Waterproofing Works
  - Carry Out Excavation Down to +23.3mPD
  - Concreting for Raft Slab (LG/F Level)
  - Steel Plate Welding to Sheetpile for Waterproofing Works
  - Carry Out Excavation to Final Excavation Level +21.0mPD
  - MIC Installation
  - Excavation to Bottom Rockfill Level & Rockfill Replacement Work
  - Town Crane installation
- A.15 EM&A monitoring for the 89<sup>th</sup> reporting period for Contract No. 1/WSD/19 and 6/WSD/21 has been completed. The 90<sup>th</sup> monthly EM&A report will cover the period from 1 to 31 August 2023.

#### 1. INTRODUCTION

#### **1.1. PROJECT BACKGROUND**

- 1.1.1 Pursuant to the Environmental Impact Assessment (EIA) Ordinance, the Director of Environmental Protection (DEP) granted the Environmental Permit (No. EP- 494/2015) on 28 January 2015, subsequent to approval of the EIA Report (Register No. AEIAR-187/2015), to the Water Supplies Department (WSD) to construct and operate the designated project for "In-situ Reprovisioning of Sha Tin Water Treatment Works South Works" ("The Project").
- 1.1.2 Under Contract No. 1/WSD/19 and 6/WSD/21, ATAL CW MH JV (ACMJV) and CW–FWS–JV are commissioned by WSD to undertake the construction of the main works while AECOM Asia Company Limited was appointed by WSD as the Engineer. For implementation of the environmental monitoring and audit (EM&A) programme under the Contract, Acumen Environmental Engineering & Technologies Company Limited was appointed by ACMJV as the Environmental Team (ET). AECOM Asia Company Limited was also employed by the WSD as the Independent Environmental Checker (IEC).
- 1.1.3 The construction phase of Contract No. 3/WSD/15 commenced on 30 October 2015 for completion by 31 December 2020. The construction phase of Contract No. 1/WSD/19 commenced on 01 January 2021. The construction phase of Contract No. 6/WSD/21 commenced on 16 March 2022. The general layout plan of the Contract components is presented in **Appendix A**.
- 1.1.4 ET conducted below baseline monitoring at designated locations according to the EM&A Manual.
   Air quality and noise: from 21 December 2015 to 3 January 2016.
   Water quality: from 15 December 2015 to 8 January 2016.
- 1.1.5 Baseline Monitoring Report was issued by the ET and verified by the IEC on 27 January 2016 and submitted to the EPD on 2 February 2016.
- 1.1.6 The impact monitoring of the EM&A programme, including air quality, noise, water quality monitoring as well as environmental site inspections, commenced on 17 February 2016.

#### **1.2.** ORGANIZATION STRUCTURE

1.2.1 The organization structure of the Contract is shown in **Appendix B**. Contact details of key personnel are summarized in below table:

Party	Position	Name	Telephone
Water Supplies	Senior Engineer	Mr. Ng, Horace, C. K.	2829 5693
Department			
AECOM	Chief Resident Engineer	Mr. Ng, Derek, K. H.	9717 1420
	Independent	Mr. Fung, Y. W.	3922 9366
	Environmental Checker		
	Deputy Independent	Ms. Lam, Lemon, M.	3922 9381
	Environmental Checker	C.	
ATAL-CW-MH Joint	Project Manager	Mr. Leung, W. C.	3758 8373
Venture	Site Agent	Ms. Cheung, S. Y.	6323 4716
CW-FWS JV	Construction Manager	Mr. Tung, K. M.	9680 4586
	Site Agent	Mr. Lee, C. M.	9148 4389
Acumen Env. Eng. &	Project Director	Ir Dr. Lam, Gabriel, C.	2333 6823
Tech. Co. Ltd.		К.	
	Environmental Team	Mr. Wong, Vega, T. L.	6113 2368
	Leader		
	Ecologist	Mr. Wan, Jay, P. H.	2333 6823

Table 1-1: Key Personnel Contact for Environmental Works

#### **1.3.** SCOPE OF REPORT

- 1.3.1 This is the 89<sup>th</sup> monthly EM&A Report under the Contract No. 1/WSD/19 and 6/WSD/21 In-situ Reprovisioning of Sha Tin Water Treatment Works (South Works) Water Treatment Works and Ancillary Facilities covering the period from 1 to 31 July 2023 (the reporting period).
- 1.3.2 The EM&A requirements for impact monitoring are set out in the approved EM&A Manual. Environmental aspects such as the construction air quality, noise, water quality and ecology were identified as the key issues during the construction phase of the Project.

#### **1.4.** SUMMARY OF CONSTRUCTION WORKS

- 1.4.1 The construction phase of the Contract commenced on 30 October 2015. Latest construction programmes are shown in **Appendix C**.
- 1.4.2 As informed by the Contractor, no major works for Contract No.3/WSD/15 will be conducted. The major works for Contract No. 1/WSD/19 in July 2023 are:
  - Major ELS Work (S1F, S2F, Ozone Building, SWPS, RMF)
    - $\diamond$  Excavation
    - ♦ Soil nail installation
    - ♦ Lagging wall construction
    - ♦ Strut and waling installation
    - $\diamond$  Pre-loading works
    - $\diamond$  Plate load tests
  - Grout curtain
  - WET structure construction, top slab construction, water test
  - S1F and S2F:
    - ♦ Formation preparation (dewatering)

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- $\diamond$  Blinding construction
- $\diamond$  Drilling works for earthing rods
- $\diamond$  Structure construction
- Demolition of TWRT
- Drilling works for King Posts
- Filter bed demolition and backfilling
- King Post installation work
- Valve chamber for M1-5 water pipe diversion
- Wall A & B construction works
- Fencing construction works
- Landscape works
- Installation of under structures pipes
- Installation of temporary steel decking at S2F
- Installation of tower crane
- 1.4.3 As informed by the Contractor, no major works for Contract No.3/WSD/15 will be conducted. The major works for Contract No. 6/WSD/21 in July 2023 are:
  - Waterproofing Works
  - Carry Out Excavation Down to + 23.3mPD
  - Concreting for Raft Slab (LG/F Level)
  - Steel Plate Welding to Sheetpile for Waterproofing Works
  - MIC Installation
  - Excavation to Bottom Rockfill Level & Rockfill Replacement Work
  - Town Crane installation
- 1.4.4 The locations of the construction activities are shown in **Appendix D**. The Environmental Sensitive Receivers in the vicinity of the Project are shown in **Appendix E**.

#### 2. EM&A RESULTS

#### 2.1. EM&A BACKGROUND

2.1.1 The EM&A programme required environmental monitoring for air quality, noise, water quality and ecology as well as environmental site inspections for air quality, noise, water quality, waste management and ecology impacts. The EM&A requirements and related findings for each component are summarized in the following sections. A summary of impact monitoring programme is presented in Table 2-1.

Impact Monitoring	Sampling Parameter	Frequency
Air Quality	1-hour TSP	3 times in every 6 days when documented and valid complaint was received
Noise	$L_{eq 30 min}$ , $L_{eq 5 min}$ , $L_{10}$ and $L_{90}$ as reference.	<ul> <li>1 time per week:</li> <li>♦ L<sub>eq 30 min</sub> for normal weekdays from 0700 - 1900;</li> </ul>
Water Quality	Duplicate in-situ measurements: Dissolved Oxygen (DO), Turbidity and pH; HOKLAS-accredited laboratory analysis: Suspended Solids (SS).	3 days per week. The interval between 2 monitoring days will be more than 36 hours.
Ecology	-	A detailed at least 6 years post-planting monitoring and maintenance programme

Table 2-1: Summary of Impact Monitoring Programme

#### Remark: Sampling Depth for Water Quality:

- (*i*) 3 depths: 1m below water surface, 1m above bottom and at mid-depth when the water depth exceeds 6m.
- (ii) If the water depth is between 3m and 6m, 2 depths: 1m below water surface and 1m above bottom.
- (iii) If the water depth is less than 3m, 1 sample at mid-depth is taken
- 2.1.2 A summary of the monitoring parameters is presented in Table 2-2.

Table 2-2: Summary of the monitoring parameters of EM&A Requirements

Environmental Issue	Parameter			
Air Quality	• 1-hour TSP Monitoring by Real-Time Portable Dust Meter			
Noise	• L <sub>eq (30min)</sub> during normal working hours			
Water Quality	In-situ measurement Dissolved Oxygen (mg/L); Dissolved Oxygen Saturation (%); Turbidity (NTU); pH value; Water depth (m); and Temperature (°C) Laboratory analysis			
	• Suspended Solids (mg/L)			

- 2.1.3 Summary of determination of Action/Limit (A/L) Levels for air quality, noise and water quality are presented in **Appendix F**.
- 2.1.4 Should non-compliance of the environmental quality criteria occurs, remedial actions will be triggered according to the Event and Action Plan enclosed in **Appendix G**.
- 2.1.5 The impact monitoring schedules are presented in **Appendix H** and the monitoring results are detailed in the following sub-sections.

#### 2.2. AIR QUALITY MONITORING

- 2.2.1 Impact monitoring for air quality had been carried out in accordance with Sections 2.29 of the approved EM&A Manual to determine the ambient 1-hour total suspended particulates (TSP) levels at the monitoring locations. 1-hour TSP sampling should be undertaken at least 3 times in every six-days at each monitoring station when the highest dust impacts are expected. General meteorological conditions (wind speed, direction and precipitation) and notes regarding any significant adjacent dust producing sources had also been recorded throughout the impact monitoring period.
- 2.2.2 Two (2) designated monitoring stations, AM1 located at the L Louey and AM2 located at Hin Keng Estate Hin Wan House, were recommended in Section 2.18 of the approved EM&A Manual. In order to identify and seek for the access of the air monitoring locations designated in the EM&A Manual, site visit was conducted among ET, IEC and EPD.
- 2.2.3 During the site visit, all designated air monitoring locations were identified. Details of air monitoring stations are described in Table 2-3. The location plan of air quality monitoring stations is shown in **Appendix I**.

Air Quality Monitoring Station	Air Sensitive Receiver (ASR) ID in the approved EIA Report	Dust Monitoring Station
AM1	ASR2	The L Louey (at a platform level of about 5m above road level nearby)
AM2	ASR4	Hin Keng Estate - Hin Wan House (at the roof top)

Table 2-3: Location of the Air Quality Monitoring Stations

2.2.4 The monitoring equipment using for the air quality impact monitoring was proposed by ET and verified by IEC. 1-hour TSP levels had been measured with direct reading dust meter. It has been demonstrated its capability in achieving comparable results with high volume sampling method as set out in the Title 40 of the Code of Federal Regulations, Chapter 1 (Part 50). The details of equipment using for impact monitoring are listed in Table 2-4 as below.

Table 2-4: Air Quality Impact Monitoring Equipment

Equipment	Model
Portable dust meter – 1-hour TSP	Qingdao Jingcheng Model PC-3A (E)
Portable Wind Speed Indicator	The Kestrel Pocket Weather Meter

- 2.2.5 The 1-hour TSP meter provides a real time 1-hour TSP measurement based on 90° light scattering. The 1-hour TSP monitor consists of the following:
  - A pump to draw sample aerosol through the optic chamber where TSP is measured;
  - A sheath air system to isolate the aerosol in the chamber to keep the optics clean for maximum reliability;

and

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- A built-in data logger compatible with based program to facilitate data collection, analysis and reporting.
- 2.2.6 The 1-hour TSP meter was calibrated by the manufacturer prior to purchasing. Zero response of the instrument was checked before and after each monitoring event. Operation of the 1-hour TSP meter followed manufacturer's Operation and Service Manual. A valid calibration certificate is attached in **Appendix J**.
- 2.2.7 In this Reporting Period, a total of five (5) sampling days perform air quality monitoring at the two designated locations. The results for 1-hour TSP are summarized in Table 2-5 and Table 2-6.

				1-hour TSP (μg/m³)		
Date	Weather	Start Time	End Time	1 <sup>st</sup> Measurement	2 <sup>nd</sup> Measurement	3 <sup>rd</sup> Measurement
6/7/2023	fine	12:40	15:40	22	25	27
12/7/2023	sunny	13:05	16:05	22	17	13
18/7/2023	fine	13:40	16:40	41	38	37
24/7/2023	fine	16:51	19:51	33	21	12
29/7/2023	cloudy	12:54	15:54	37	30	32
	Average				27.1	
	Range				12 - 41	

Table 2-5: Summary of 1-hour TSP Monitoring Results – AM1

Table 2-6: Summary of 1-hour TSP Monitoring Results – AM2

		1-hour TSP (μg/m <sup>3</sup> )				
Date	Weather	Start	End	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>
		Time	Time	Measurement	Measurement	Measurement
6/7/2023	fine	12:44	15:44	19	22	23
12/7/2023	sunny	13:09	16:09	12	20	24
18/7/2023	fine	13:45	16:45	32	39	35
24/7/2023	fine	16:55	19:55	15	12	20
29/7/2023	cloudy	12:58	15:58	36	31	38
	Average				25.2	
	Range				12 - 39	

2.2.8 In this Reporting Month, all monitoring result were below the action level. Hence, no Action or Limit Level exceedance was triggered during this month. The impact air quality monitoring results and graphical presentation are shown in **Appendix K**.

#### **2.3.** NOISE MONITORING

- 2.3.1 Impact monitoring for noise levels had been measured in accordance with Sections 3.13 of approved EM&A Manual on normal weekdays at a frequency of once a week at logging interval of 30 minutes for daytime (between 0700 and 1900 hours of normal weekdays). The L<sub>eq</sub> had been recorded at the specified intervals.
- 2.3.2 According to Section 3.7 of the approved EM&A Manual, 3 noise sensitive receivers designated for the construction noise monitoring. The designated monitoring stations are identified and successfully granted by the premises. The details of noise monitoring stations are described in Table 2-7 and the location plan of noise monitoring stations is shown in **Appendix L**.

Noise Monitoring Station	Noise Sensitive Receiver (NSR) ID in the approved EIA Report	Identified Noise Monitoring Station
		The L Louey (South)
NM1	HK2	(at a platform level of
	11112	about 5m above road level nearby
		- free field measurement)
		Hin Keng Estate –
NM2	HK5	Hin Wan House
		(at the roof level - facade measurement)
		C.U.H.K.F.A.A.
NM3	HK7	Thomas Cheung School
		(at the roof level - free field measurement)

Table 2-7: Details of Noise Monitoring Stations

2.3.3 The monitoring equipment using for the noise impact monitoring was proposed by ET and verified by IEC. Sound level meter in compliance with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications has been used for carrying out the noise monitoring. The sound level meter has been checked using an acoustic calibrator. The wind speed has been checked with a portable wind speed meter capable of measuring the wind speed in m/s. The details of equipment using for impact monitoring are listed in Table 2-8 as below.

Table 2-8: Noise Impact Monitoring Equipment

Noise	
Sound Level Meter	Svantek 971
Acoustic Calibrator	Rion NL-52
Portable Wind Speed Indicator	The Kestrel Pocket Weather Meter

- 2.3.4 All noise measurements were the meter set to FAST response and on the A-weighted equivalent continuous sound pressure level  $(L_{eq})$ .
- 2.3.5 Prior to the impact 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. Regular checking

was conducted in impact monitoring period. The calibration level before and after the noise measurement is agreed to within 1.0 dB.

- 2.3.6 An acoustic calibrator and sound level meter using impact monitoring is within the valid period and were calibrated per year. A set of valid calibration certificates is attached in **Appendix M**.
- 2.3.7 Noise measurements should not be made in presence of fog, rain, wind with a steady speed exceeding 5 ms<sup>-1</sup> or wind with gusts exceeding 10 ms<sup>-1</sup>. The wind speed was checked with a portable wind speed meter capable of measuring with speeds in ms<sup>-1</sup>.
- 2.3.8 In this Reporting Period, a total five (5) occasions noise monitoring was undertaken in Reporting period. The noise monitoring results at the designated locations are summarized in Tables 2-9 to 2-11.

Date	Time	Weather	1 <sup>st</sup> Leq <sub>5min</sub>	2 <sup>nd</sup> Leq <sub>5min</sub>	3 <sup>rd</sup> Leq <sub>5min</sub>	4 <sup>th</sup> Leq <sub>5min</sub>	5 <sup>th</sup> Leq <sub>5min</sub>	6 <sup>th</sup> Leq <sub>5min</sub>	Leq <sub>30min</sub>
6/7/2023	13:19 - 13:49	fine	52.8	54.1	51.6	58.7	51.9	58.7	55.7
12/7/2023	13:55 - 14:25	sunny	57.2	53.0	54.4	57.1	55.8	52.1	55.3
18/7/2023	14:58 - 15:28	fine	54.7	55.2	55.9	56.8	54.2	56.6	55.7
24/7/2023	16:51 - 17:21	fine	53.3	53.0	52.5	57.0	51.3	50.1	53.5
29/7/2023	12:54 - 13:24	cloudy	58.7	53.5	52.2	55.4	56.2	51.9	55.3
								Average	55.2
Limit Level	>75dB(A)							Range	53.5 -
									55.7

Table 2-9: Summary of Noise Monitoring Results - NM1

Table 2-10: Summary of Noise Monitoring Results – NM2

Date	Time	Weather	1 <sup>st</sup> Leq <sub>5min</sub>	2 <sup>nd</sup> Leq <sub>5min</sub>	3 <sup>rd</sup> Leq <sub>5min</sub>	4 <sup>th</sup> Leq <sub>5min</sub>	5 <sup>th</sup> Leq <sub>5min</sub>	6 <sup>th</sup> Leq <sub>5min</sub>	Leq <sub>30min</sub>
6/7/2023	13:53 - 14:23	fine	47.8	48.4	45.9	46.8	49.7	50.8	48.6
12/7/2023	14:29 - 14:59	sunny	52.2	51.4	50.5	49.2	47.0	49.9	50.3
18/7/2023	14:23 - 14:53	fine	53.4	52.9	53.7	54.1	52.7	53.9	53.5
24/7/2023	17:25 - 17:55	fine	52.4	51.8	50.0	49.1	52.3	51.1	51.3
29/7/2023	13:28 - 13:58	cloudy	50.1	49.5	50.9	48.9	48.1	47.9	49.4
								Average	51.0
Limit Level	>75dB(A)							Range	48.6 -
									53.5

8

Date	Time	Weather	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>	
Datt		weather	Leq <sub>5min</sub>	Leq <sub>30min</sub>					
6/7/2023	14:27 - 14:57	fine	51.4	52.9	52.0	53.3	52.6	49.2	52.1
12/7/2023	15:03 - 15:33	sunny	49.7	48.6	49.2	50.4	47.3	48.5	49.1
18/7/2023	13:49 - 14:19	fine	51.2	50.6	51.8	51.3	49.7	48.8	50.7
24/7/2023	17:59 - 18:29	fine	49.8	49.6	47.4	52.0	48.7	46.9	49.4
29/7/2023	14:02 - 14:32	cloudy	47.1	45.1	47.8	46.2	48.3	50.8	47.9
Limit Level 70dB(A) during normal teaching periods								Average	50.1
								Range	47.9 –
<del>or 65dB(A)</del>	or 65dB(A) during examination periods								52.1

Table 2-11.	Summary	of Noise	Monitoring	Results – NM3
1able 2-11.	Summary	OI INDISC	Monitoring	Results – INIVIS

2.3.9 As shown in the results were well below the limit level, also no complaint was received by the RE, WSD, EPD and contractor. Hence, no Action or Limit Level exceedance was triggered during this month. The impact noise quality monitoring results and graphical presentation are shown in **Appendix** N.

#### 2.4. WATER QUALITY MONITORING

- 2.4.1 Water Impact monitoring had been taken three days per week with sampling or measurement in accordance with Sections 4.12 of the approved EM&A Manual at all designated monitoring stations in the 2 water courses. The interval between 2 sets of monitoring had been more than 36 hours. Replicate in-situ measures had been carried out in each sampling event.
- 2.4.2 Three (3) control and two (2) impact stations were recommended in the Section 4.7 of the approved EM&A Manual to carry out water quality monitoring. In order to identify and seek for the access of the water monitoring locations designated in the approved EM&A Manual, site visit was conducted among ET, IEC and Environmental Protection Department (EPD).
- 2.4.3 During the site visit, all designated monitoring locations were identified however one more impact stations (M3) along the same water course was introduced due to the concern on multiple site effect, in particular to address the potential impact to M2 from a source at upstream of the water course. Details and coordinates of the monitoring stations are described in Table 2-12 and the location plan of water quality monitoring stations is shown in **Appendix O**.

Water Quality	Description	<b>Co-ordinates</b>		
<b>Monitoring Station</b>	Description	Easting	Northing	
C1		835110	824716	
C2	Control Stations	835403	824470	
C3		835642	824386	
M1	Turner et	835215	824827	
M2	Impact Monitoring Stations	835536	824775	
M3	Monitoring Stations	835501	824648	

Table 2-12: Details of Water Quality Monitoring Station

2.4.4 The water monitoring equipment and analysis using for the water quality monitoring were proposed by ET and verified by IEC. The details of equipment using for impact monitoring are listed in the Table 2-13 below:

Water quality	
Horiba Multi Water Quality C	hecker U-53
Thermometer & DO meter	The instrument is a portable and weatherproof dissolved oxygen (DO) measuring instrument complete with cable and sensor, and use a DC power source. The equipment is capable of measuring as included a DO level in the range of 0 - $20mg/L$ and 0 - $200\%$ saturation; and a temperature of 0 - $45^{\circ}C$ .
pH meter	The instrument consists of a potentiometer, a glass electrode, a reference electrode and a temperature-compensating device. It is readable to 0.1 pH in range of 0 to 14.
Turbidmeter	The instrument is a portable and weatherproof turbidity measuring instrument using a DC power source. It has a photoelectric sensor capable of measuring turbidity between 0 - 1000 NTU.
Laboratory Analysis	
Suspended Solids	HOKLAS-accredited laboratory (Acumen Laboratory and Testing Limited)

Table 2-13: Monitoring Equipment Used in Impact Monitoring Program

#### Remark:

(i) Water samples for suspended solids (SS) have been stored in high density polythene bottles with no preservative added, packed in ice (cooled to 4°C without being frozen).

- 2.4.5 Before the commencement of the sampling, general information such as the date and time of sampling as well as the personnel responsible for monitoring were recorded on the monitoring field data sheet.
- 2.4.6 Water temperature, turbidity, DO, pH and water depth were measured in-situ. Since water depths at C1, C2, M1, M2 and M3 were less than 3 m, all in-situ measurements and sampling conducted at one water depth such as mid-depth are performed. Moreover, C3 was recorded dry throughout the sampling period. Therefore, in-situ measurements and sampling could not be conducted at C3 in accordance with the water monitoring requirements in the approved EM&A Manual.
- 2.4.7 At each sampling point, (two) 2 consecutive measurements of temperature, DO, turbidity and pH were measured. The Multi-Parameter Water Quality Monitoring Probe were retrieved out of the water after the first measurement and then re-deployed for the second measurement. Where the difference in the value between the first and second readings of each set was more than 25% of the value of the first reading, the reading was discarded and further readings were taken. The certification of the Multi-parameter Water Quality Monitoring System is showed in **Appendix P**.
- 2.4.8 All water samples were delivered to the Acumen Laboratory and Testing Limited (HOKLAS registration no.: 241). SS testing was used HOKLAS accredited Analytical method APHA 2540 D. The certification of laboratory with HOKLAS accredited analytical tests are provided in **Appendix Q**.
- 2.4.9 In this reporting period, a total of thirteen (13) sampling days perform water monitoring at the six designated locations. Monitoring results of 4 key parameters: dissolved oxygen (DO), turbidity, suspended solids and pH in this Reporting Months, are summarized in Table 2-14.

C1	C2	C3	M1	M2	M3
10.54	10.23	N/A	12.00	11.42	12.26
9.00	9.30	N/A	9.34	10.25	10.80
12.24	11.56	N/A	14.81	13.19	14.05
C1	C2	C3	M1	M2	M3
1.27	0.22	N/A	1.73	0.41	0.09
0.00	0.00	N/A	0.00	0.00	0.00
3.53	1.55	N/A	4.22	1.74	0.98
<b>C1</b>	C2	C3	M1	M2	M3
1.75	1.17	N/A	1.51	1.19	1.17
<1	<1	N/A	<1	<1	<1
3.30	2.70	N/A	3.00	2.60	2.40
C1	C2	C3	M1	M2	M3
7.65	7.90	N/A	7.93	8.25	8.35
6.85	6.90	N/A	7.26	7.81	8.00
7.89	8.27	N/A	8.18	8 67	8.58
	10.54         9.00         12.24         C1         1.27         0.00         3.53         C1         1.75         <1	$\begin{array}{c ccccc} 10.54 & 10.23 \\ 9.00 & 9.30 \\ 12.24 & 11.56 \\ \hline C1 & C2 \\ 1.27 & 0.22 \\ 0.00 & 0.00 \\ 3.53 & 1.55 \\ \hline C1 & C2 \\ 1.75 & 1.17 \\ <1 & <1 \\ 3.30 & 2.70 \\ \hline C1 & C2 \\ 7.65 & 7.90 \\ \hline 6.85 & 6.90 \\ \hline \end{array}$	10.54         10.23         N/A           9.00         9.30         N/A           12.24         11.56         N/A           C1         C2         C3           1.27         0.22         N/A           0.00         0.00         N/A           3.53         1.55         N/A           C1         C2         C3           1.75         1.17         N/A           <1	10.54 $10.23$ N/A $12.00$ $9.00$ $9.30$ N/A $9.34$ $12.24$ $11.56$ N/A $14.81$ C1C2C3M1 $1.27$ $0.22$ N/A $1.73$ $0.00$ $0.00$ N/A $0.00$ $3.53$ $1.55$ N/A $4.22$ C1C2C3M1 $1.75$ $1.17$ N/A $1.51$ $<1$ $<1$ N/A $3.00$ C1C2C3M1 $7.65$ $7.90$ N/A $7.93$ $6.85$ $6.90$ N/A $7.26$	10.54 $10.23$ N/A $12.00$ $11.42$ $9.00$ $9.30$ N/A $9.34$ $10.25$ $12.24$ $11.56$ N/A $14.81$ $13.19$ C1C2C3M1M2 $1.27$ $0.22$ N/A $1.73$ $0.41$ $0.00$ $0.00$ N/A $0.00$ $0.00$ $3.53$ $1.55$ N/A $4.22$ $1.74$ C1C2C3M1M2 $1.75$ $1.17$ N/A $1.51$ $1.19$ $<1$ $<1$ N/A $<1$ $<1$ $3.30$ $2.70$ N/A $3.00$ $2.60$ C1C2C3M1M2 $7.65$ $7.90$ N/A $7.93$ $8.25$ $6.85$ $6.90$ N/A $7.26$ $7.81$

Table 2-14: Summary of Water Quality Monitoring Results

Remark 1: Suspended solid values that are <1 is assumed to be 1 during calculation Remark 2: Underlined values indicated exceedance of limit level Remark 3: Details of exceedance of action level, please refer to appendix R

- 2.4.10 In this reporting month, most of the monitoring results were below or within the action level. There were 0 exceedance of action level and 3 exceedances of limit level in the reporting period, all was found non-project related. Detailed monitoring results including in-situ measurements, laboratory analysis data are shown in Appendix R.
- 2.4.11 Investigation report for the exceedance of water quality in July 2023 are supplemented in Appendix V.

#### 2.5. ECOLOGY

- 2.5.1 The condition of TA572 was observed in fair health despite in poor form. TA327 was also in poor condition; while already dead TA326 collapsed under Signal No. 10 typhoon Mangkhut in September 2018. Tree guying cables have been installed to provide external support to the two remaining transplanted trees.
- 2.5.2 Compensatory planting of TA326 has been completed on 25 March 2020 by planting two Syzygium levinei and one Schefflera heptaphylla. However, the two native Syzygium levinei were mis-planted by two exotic Syzygium jambos, which has been replaced by another native tree species Celtis sinensis on 31 May 2021.
- 2.5.3 *Desmos chinensis* has been finalized as the candidate to compensate the loss of *Artabotrys hongkongensis*. Two individuals were planted at Wall C in STWTW on 1 April 2021.
- 2.5.4 New small sprouts keep emerging from the two *Desmos chinensis* that have been reported dead previously. Construction materials was also found too close to the planter. An eye-catching protective fence shall be set up as a protection zone. No construction materials shall be placed near/ within the protection zone.
- 2.5.5 In order to enhance a sustainable survival during the post-transplantation stage, a shelter (such as shading net) has been installed to reduce intensity of direct sunlight received and avoid direct hit of rainstorm/ typhoon to the 27 nos. *Cibotium barometz* at Portion E of STSFWSR.
- 2.5.6 Regular irrigation, set up of protection zone and weeding by hand held tools within protection zone, shall also be provided to the transplanted/ compensated plants in order to sustain their survival during the post-transplantation (establishment) stage.
- 2.5.7 Root ball of TA572 and TA327 tree should be kept moisture especially during dry and non-raining day.
- 2.5.8 Signs of ploughed soil by wild boar(s) at the two groups of transplanted *Cibotium barometz* were reported in previous monitoring. A robust fencing was recently installed to protect the group of *Cibotium barometz* from further damage caused by wild boars.
- 2.5.9 Given that leftover/ garbage was observed nearby, illegal feeding of wild pigs or other wild animals was also suspected to occur. Warning signs of illegal feeding and plant protection zone may be put along the receptor site to remind the hikers. Reporting the case to the relevant government department, i.e. AFCD, is suggested to prevent further aggregation of wild boars in the area.

#### 2.6. WASTE MANAGEMENT STATUS

- 2.6.1 The Contractor has submitted application form for registration as chemical waste producer under the Contract. Sufficient numbers of receptacles were available for general refuse collection and sorting. The Waste Producer Number to the Contractor is assigned in respect of the project site.
- 2.6.2 Wastes generated during this reporting period include mainly construction wastes (inert and non-inert). Waste flow table was prepared by the Contractor to record amount of waste generated and disposed (**Appendix T**).
- 2.6.3 The Contractor was advised to properly maintain on site C&D materials and waste collection, sorting and recording system, dispose of C&D materials and wastes at designated ground and maximize reuse/ recycle of C&D materials and wastes.
- 2.6.4 The Contractor was also reminded to properly maintain the site tidiness and dispose of the wastes accumulated on site regularly and properly. For chemical waste containers, the Contractor was reminded to treat properly and store temporarily in designated chemical waste storage area on site in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.

#### 2.7. DELIVERY, STORAGE AND HANDLING OF CHLORINE

2.7.1 Chlorine is delivered to Sha Tin WTW in batches of up to 6×1-tonne drums. The transport route from Sham Shui Kok dock on North Lantau is shown in **Figure 1**. The route passes along the North Lantau Expressway, around the northern edge of Tsing Yi, through Tsuen Wan and along Tai Po Road (Piper's Hill) to Sha Tin (Table 2-15).

Figure 1: Chlorine Transport Route to Sha Tin Water Treatment Works

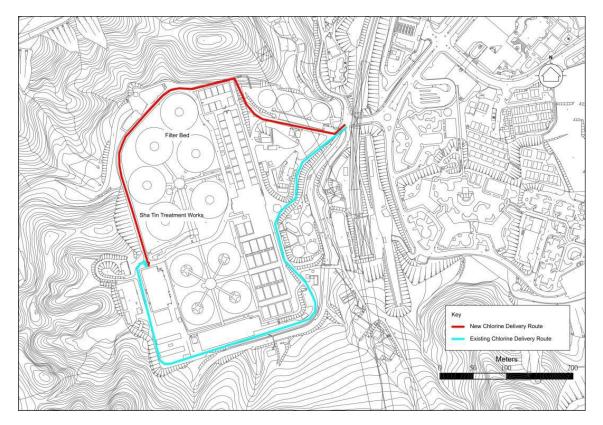


Table 2-15: Chlorine Truck Transport Route

Destination	Route
From SSK	Sham Shui Kok Dock > Cheung Tung Road > Sunny Bay Road > N Lantau Highway
Dock to Sha	> Lantau Link > NW Tsing Yi Interchange > Tsing Yi North Costal road > Tsing
Tin WTW	Tsuen Road > Tsuen Wan Road > Kwai Chung Road > Ching Cheung Road > Tai
	Po Road > Tai Po Road (Piper's Hill) > Tai Po Road (Sha Tin Heights) > Tai Po
	Road > Tsing Sha Highway (Sha Tin) > Tai Po Rd (Sha Tin) > Sha Tin Rural
	Committee Rd > Tai Chung Kiu Rd > Che Kung Miu Road > Sha Tin WTW

- 2.7.2 Unloading takes place inside the Chlorination House, with the doors closed, in a designated truck unloading bay. The movement of drums within the storage area and 'drive-through' unloading bay is carried out using a hoist/monorail system with a purpose-built lifting beam. Prior to usage, the drums are stored on cradles within the chlorine storage area.
- 2.7.3 The on-site chlorine delivery route is shown in **Figure 2**.

Figure 2: Chlorine Delivery Route at Sha Tin WTW



- 2.7.4 An emergency chlorine scrubbing system is installed to remove any leaked chlorine in the chlorine handling and storage areas. The system is a packed tower utilising sodium hydroxide as the neutralising agent. The plant and equipment are installed in a separate scrubber room.
- 2.7.5 On detection of chlorine at a concentration of 3 ppm or above in the chlorine handling or storage areas, the scrubbing system will activate automatically. The air/chlorine mixture in the affected areas is drawn into the scrubber by the scrubber fan via ducting connected to the normal ventilation system. An electrically-operated isolating damper is provided in the scrubber intake which opens automatically when the scrubber fan starts up.
- 2.7.6 The scrubber system is normally set at auto standby mode and is activated if the chlorine concentration rises above 3 ppm. A continuous chlorine monitor is installed at a point downstream of the packed tower

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and upstream of the vent/recycle changeover dampers to monitor the scrubber performance; a "Chlorine concentration high" alarm will be initiated if the concentration of chlorine in the tower exhaust exceeds the preset value.

- 2.7.7 According to the Fire Services Department's fire safety requirements, an emergency repair/stoppage kit for chlorine spillage/leakage is provided and maintained in good working condition at all times for use by the trained persons and stowed adjacent to but outside the store/plant room. Regular drills are conducted to train personnel on the proper use of the breathing apparatus and protective clothing.
- 2.7.8 A Hazard Assessment of the risks associated with the storage, handling and transport of chlorine at Sha Tin WTW and the off-site transport of chlorine for the Construction and Operational Phases of the reprovisioning project has been conducted in the approved EIA Report (Register No. AEIAR-187/2015).
- 2.7.9 This In-situ Reprovisioning of Sha Tin WTW is an improvement project, following its completion the chlorine-related risks levels to the general public will be lowered due to the anticipated reduction of the chlorine storage and usage levels.
- 2.7.10 Implementation of the recommended mitigation measures would be regularly audited. No specific Environmental Monitoring would be required.

#### **2.8. EM&A SITE INSPECTION**

- 2.8.1 Site inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures under the Contract. In the reporting period, contract No. 1/WSD/19 were five (5) site inspections carried out on 5, 11, 19, 26 and 31 July 2023. Contract No. 6/WSD/21 were five (5) site inspections carried out on 5, 11, 19, 26 and 31 July 2023.
- 2.8.2 One joint site inspection with IEC also undertaken on 31 July 2023. Minor deficiencies were observed during weekly site inspection or joint site inspection. Key observations during the site inspections are summarized in Table 2-16 (a) and Table 2-16 (b).

Date	Environmental Observations	Follow-up Status
5 July 2023	No environmental issue was observed during the site inspection.	N/A
11 July 2023	No environmental issue was observed during the site inspection.	N/A
19 July 2023	It is observed that water accumulation on road surface. Contractors are remind to prevent water accumulation after rain	Water accumulation has been cleaned up.
26 July 2023	No environmental issue was observed during the site inspection.	N/A
31 July 2023	No environmental issue was observed during the site inspection.	N/A

#### Table 2-16 (a): Site Observations (1/WSD/19)

#### Table 2-16 (b): Site Observations (6/WSD/21)

Date	<b>Environmental Observations</b>	Follow-up Status
	It is observed that waste disposal on the	
5 July 2023	working area. Contractors are reminded to	Waste has been cleaned up.
	clear them.	
11 July 2023	No environmental issue was observed during	N/A
11 July 2023	the site inspection.	
19 July 2023	No environmental issue was observed during	N/A
19 July 2023	the site inspection.	N/A
	It is observed that waste disposal on the	
26 July 2023	working area. Contractors are reminded to	Waste has been cleaned up.
	clear them.	
31 July 2023	No environmental issue was observed during	N/A
51 July 2025	the site inspection.	N/A

2.8.3 The Contractor has rectified all the observations identified during environmental site inspections in the reporting period.

#### 2.9. ENVIRONMENTAL LICENSES AND PERMITS

2.9.1 The status of environmental license and permit is summarized in Table 2-17 (a) and Table 2-17 (b) below:

License / Permit	License / Permit No.	Date of Issue	Date of Expiry	License / Permit Holder	Remark
Environmental Permit	EP- 494/2015	28/01/2015	N/A	WSD	
Notification of Construction Works under the Air Pollution Control (Construction Dust) Regulation (Form NA)	Reference No: 458807	10/8/2020	N/A	ACMJV	
Registration of Chemical Waste Producer	WPN5296-759- A3012-01	28/09/2020	N/A	ACMJV	
Trip Ticket (Chit) Account	7038091	26/8/2020	N/A	ACMJV	
Waste Water Discharge Licence	WT00037213- 2020	19/1/2021	31/1/2026	ACMJV	
Notification of Commencement of Asbestos Abatement Work	AX210503	30/8/2021	N/A	ACMJV	
Construction Noise Permit	GW-RN0644-23	16/06/2023	15/09/2023	ACMJV	

Table 2-17(a): Summary of Environmental License and Permit (1/WSD/19)

Table 2-17(b): Summary of Environmental License and Permit (6/WSD/21)

License / Permit	License / Permit No.	Date of Issue	Date of Expiry	License / Permit Holder	Remark
Notification of Construction Works under the Air Pollution Control (Construction Dust) Regulation (Form NA)	Reference No: 474147	24/11/2021	N/A	ACMJV	
Registration of Chemical Waste Producer	WPN5218-759- C4678-01	5/1/2022	N/A	ACMJV	
Trip Ticket (Chit) Account	7042460	8/12/2021	N/A	ACMJV	
Waste Water Discharge Licence	WT00040939- 2022	11/5/2022	31/5/2027	ACMJV	
Construction Noise Permit	GW-RN0547-23	5/6/2023	4/9/2023	ACMJV	

#### 2.10. IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES

- 2.10.1 In response to the site audit findings, the Contractors carried out corrective actions. A summary of the environmental mitigation measures implemented by the Contractor in this Reporting Period are summarized in Table 2-18.
- 2.10.2 The environmental mitigation measures that recommended in the Implementation Schedule for Environmental Mitigation Measures (EMIS) in the approved EM&A Manual covered the issues of dust, noise, water and waste and they are showed **Appendix U**.

Issues	Environmental Mitigation Measures	
Air Quality	<ul> <li>Tarpaulin covering of any dusty materials on a vehicle leaving the site;</li> <li>Imposition of speed controls for vehicles on site haul roads;</li> <li>Use of regular watering to reduce dust emissions from exposed site surfaces and roads;</li> <li>Side enclosure and covering of any aggregate or stockpiling of dusty materials to reduce emissions;</li> <li>Where possible, routing of vehicles and positioning of construction plant should be at the maximum possible distance from ASRs.</li> </ul>	
Noise	<ul> <li>Good site practices to limit noise emissions at the sources;</li> <li>Use of quite plant and working methods;</li> <li>Use of site hoarding or other mass materials as noise barrier to screen noise at ground level of NSRs;</li> <li>Scheduling of construction works outside school examination period in critical area.</li> </ul>	
Water	<ul> <li>Drainage systems were regularly and adequately maintained;</li> <li>Effluent discharged from the construction site should comply with standards stipulated in the TM-DSS;</li> <li>Open stockpiles of construction materials on sites should be covered.</li> </ul>	
General	The site was generally kept tidy and clean.	

 Table 2-18: Environmental Mitigation Measures

2.10.3 The necessary mitigation measures were implemented properly for this Contract.

## 2.11. SUMMARY OF EXCEEDANCES OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMIT

- 2.11.1 Results for 1-hour TSP and noise monitoring complied with the Action/ Limit levels in the reporting period. Results for water quality monitoring mostly complied with the Action/ Limit levels in the reporting period.
- 2.11.2 Cumulative statistics on exceedances is provided in Appendix V.

#### 2.12. SUMMARY OF COMPLAINTS, NOTIFICATION OF SUMMONS AND PROSECUTIONS

2.12.1 The Environmental Complaint Handling Procedure is shown in below table:

#### Table 2-19: Environmental Complaint Handling Procedure

Complaint Received via Project	Complaint Received via 1823 or		
Hotline	from other government departments		
ACMJV notify ER, ET and IEC	ER notify ACM, ET and IEC		
	·		
Register of the complaint. ACMJV and ET to conduct investigation of			
complaint and report to ER and IEC the investigation results			
If complaint is considered not valid	If complaint is found valid		
ET or ER to reply the complainant	ACMJV to implement necessary		
if necessary	improvement measures in		
	consultation with the IEC, ET and		
	ER. ET to check and inspect if the		
	situation is improved. ER to		
	conduct further inspection as		
	necessary.		
	ER to report the follow up actions		
	done to WSD and reply to		
	complainant is necessary.		
	If the complaint is referred by the		
	EPD, the Contractor to prepare		
	interim report on the status of the		
	complaint investigation and follow-		
	up action		
ER prepare complaint report for submission to WSD			
ET to record the complaint case in monthly EM&A report			

- 2.12.2 No environmental complaint was received in the reporting period.
- 2.12.3 No notification of summons and prosecution was received in the reporting period.
- 2.12.4 EPD site inspections were conducted on 25 July 2023 and 31 July 2023 in the reporting period.
- 2.12.5 Statistics on complaints, notifications of summons and successful prosecutions are summarized in Appendix V.

#### 2.13. DATA MANAGEMENT AND DATA QA/QC CONTROL

- 2.13.1 The impact monitoring data were handled by ET's in-house data recording and management system.
- 2.13.2 The monitoring data recorded in the equipment were downloaded directly from the equipment at the end of each monitoring day. The downloaded monitoring data were input into computerized database properly. The laboratory results were input directly into the computerized database and checked by personnel other than those who had input the data.
- 2.13.3 For monitoring parameters that require laboratory analysis, the local laboratory had followed the QA/QC requirements as set out under the HOKLAS scheme for the relevant laboratory testing.

#### **3. FUTURE KEY ISSUES**

#### 3.1. CONSTRUCTION PROGRAMME FOR THE COMING MONTHS

- 3.1.1 As informed by the Contractor, the major works for Contract No. 1/WSD/19 between August 2023 to October 2023 will be:
  - Major ELS Work (S1F, S2F, Ozone Building, SWPS, RMF)
    - $\diamond$  Excavation
    - ♦ Soil nail installation
    - ♦ Lagging wall construction
    - $\diamond$  Strut and waling installation
    - $\diamond$  Pre-loading works
    - $\diamond$  Plate load tests
  - Grout curtain
  - WET structure construction, top slab construction, water test
  - S1F, S2F and SWPS:
    - ♦ Formation preparation (dewatering)
    - $\diamond$  Blinding construction
    - $\diamond$  Drilling works for earthing rods
    - $\diamond$  Structure construction
  - Demolition of TWRT
  - Drilling works for King Posts
  - Filter bed demolition and backfilling
  - King Post installation work
  - Valve chamber for M1-5 water pipe diversion
  - Wall A & B construction works
  - Fencing construction works
  - Landscape works
  - Installation of under structures pipes
  - Installation of temporary steel decking at S2F
  - ABWF Works for 6 major buildings
  - Scaffolding Works for WET ABWF & Metal Works
  - Structural Steelworks for WET
  - Excavation for Stainless Steel Pipework under Structures of Six Major Buildings in Portion A
- 3.1.2 As informed by the Contractor, the major works for Contract No. 6/WSD/21 between August 2023 to October 2023 will be:
  - Waterproofing Works
  - Carry Out Excavation Down to +23.3mPD
  - Concreting for Raft Slab (LG/F Level)
  - Steel Plate Welding to Sheetpile for Waterproofing Works
  - Carry Out Excavation to Final Excavation Level +21.0mPD
  - MIC Installation
  - Excavation to Bottom Rockfill Level & Rockfill Replacement Work
  - Town Crane installation

#### **3.2.** KEY ISSUES FOR COMING MONTH

- 3.2.1 Potential environmental impacts arising from the above upcoming construction activities in July 2023 are mainly associated with dust, noise, water quality issues and waste management issues.
- 3.2.2 The tentative monitoring schedule for August 2023 to October 2023 can be found in Appendix W.

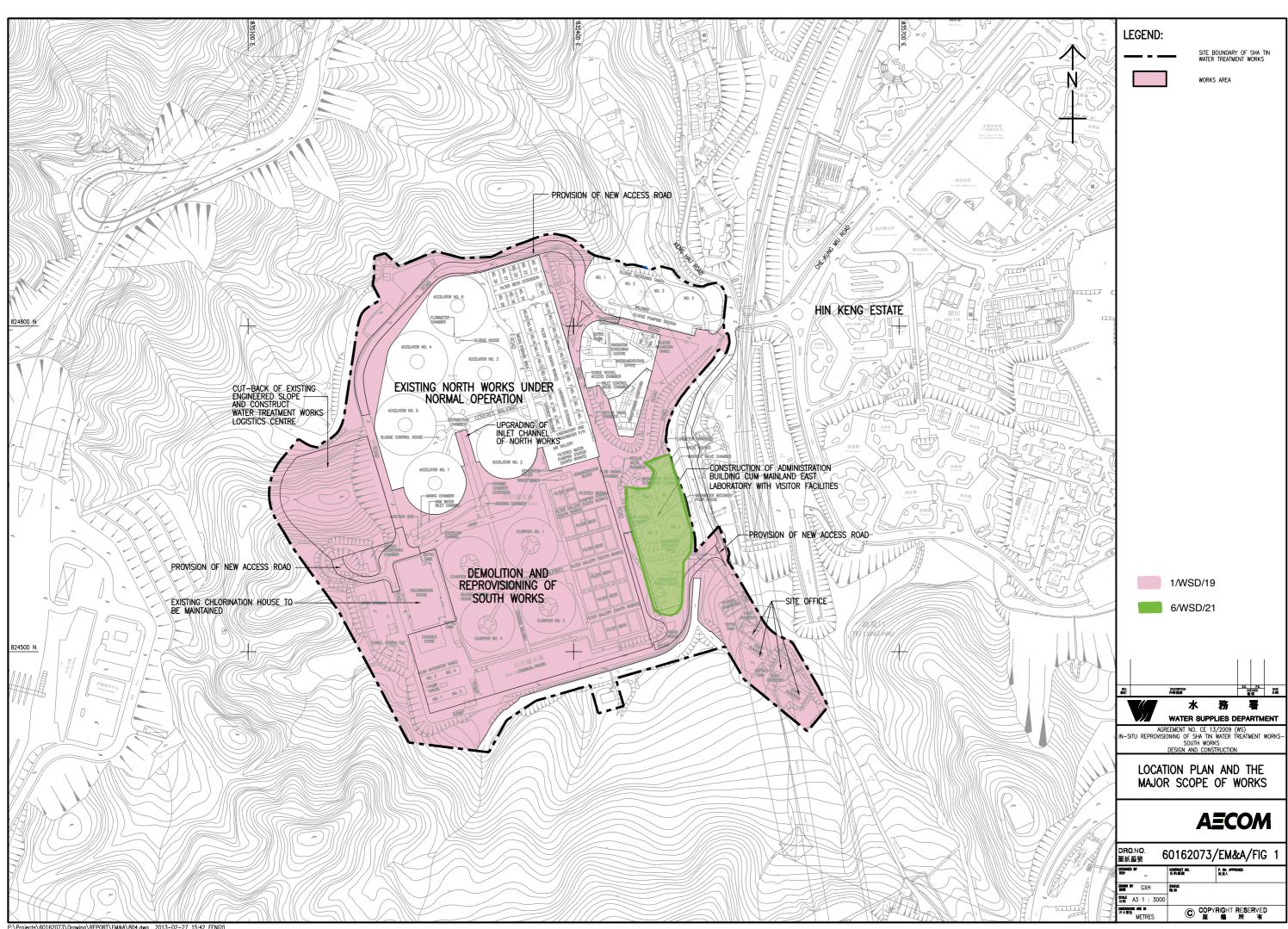
#### 4. CONCLUSIONS AND RECOMMENDATIONS

#### 4.1. SUMMARY

- 4.1.1 Air quality (1-hour TSP), noise, water quality and ecology impact monitoring were carried out in the reporting period. Most of the monitoring results are satisfactory, there were 0 exceedance of action level and 3 exceedances of limit level for water monitoring results in the reporting month was found and NOE and Investigation Report was therefore issued.
- 4.1.2 Five (5 nos.) environmental site inspections were conducted during the reporting period. Joint site inspection with IEC were carried out on 31 July 2023. Minor deficiencies were observed during site inspection and were rectified within the specified deadlines. The environmental performance of the Project was therefore considered satisfactory.
- 4.1.3 To control the site performance on waste management, the contractor shall ensure that all solid and liquid waste management works are fully in compliance with the relevant license/permit requirements, such as the effluent discharge licence and the chemical waste producer registration. Contractor is also reminded to implement the recommended environmental mitigation measures according to the Environmental Monitoring and Audit Manual.
- 4.1.4 No Environmental complaint was received in reporting period.
- 4.1.5 No notification of summons or prosecution was received since commencement of the Contract.
- 4.1.6 The ET will keep track on the construction works to confirm compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

## Appendix A General Layout Plan

Project no.: CJO-3113



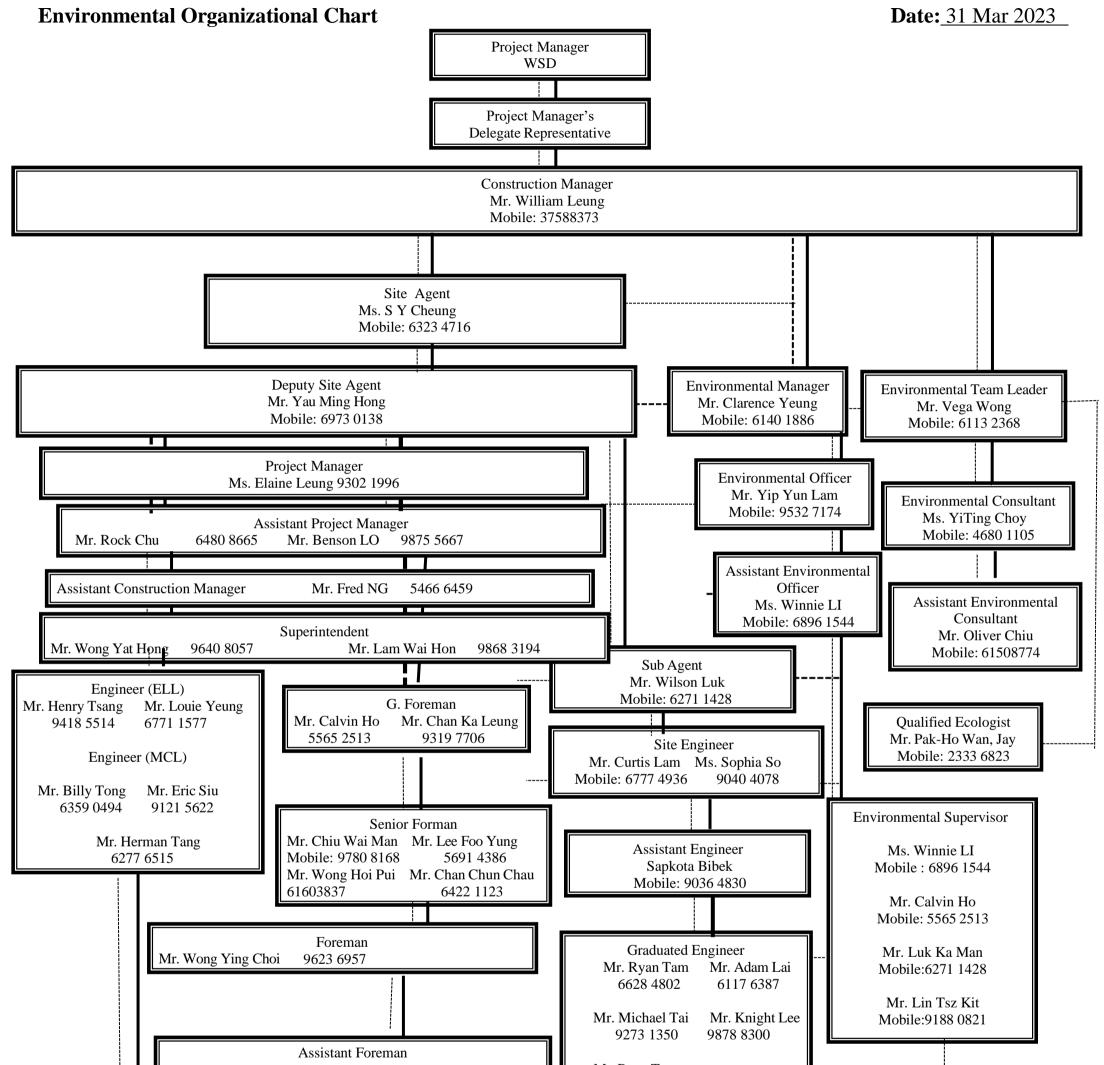
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# Appendix B Project Organization

Project no.: CJO-3113

In-situ Reprovisioning of Sha Tin Water Treatment Works (South Works)

- Water Treatment Works and Ancillary Facilities



Mr. Joh 5220 9	e		Mr. Ryan Tam 6628 4802		
Site Supervisor Mr. Yam Kim Pang Mobile: 9446 2998	Mr. Yeung Chung Shing Mobile: 9332 7090	Technical Apprentice Mr. Wong Ho Hin 6847 4497	Mr. Alex Hu Hongbin 6808 6236	]	J
Harvest Harvest Mr. Ho Kam Kuen Mr. Chan Fat Mobile: 6387 1108 6153 8582	Harvest Mr. Tam Chi Kwan 6918 3262	Sub-Con. Rep Sung Wah Mr. Chan Kuen Por 9558 3776	o's. Wing Wo Mr. Ben Chung 6480 7623		

Authorization

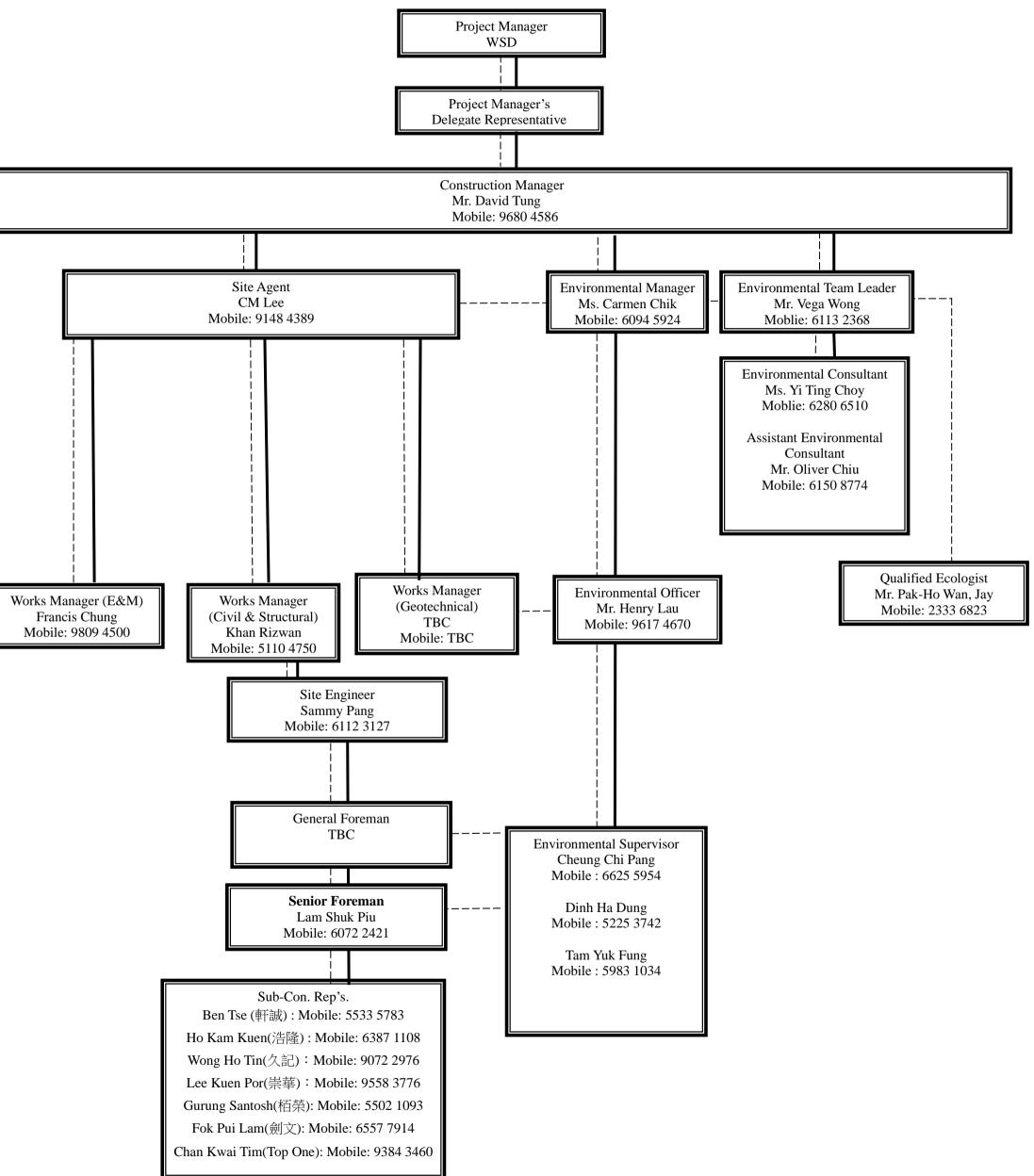
Communication Line

### Contract No. 6/WSD/21

In-situ Reprovisioning of Sha Tin Water Treatment Works (South Works)

- Administration Building

## **Environmental Organizational Chart (2023.03)**



Authorization

**Communication Line** \_ \_ \_ \_ \_ \_

# Appendix C Latest Construction Programme

Activity ID	Activity Name	Original Duration	Start	Finish	
	ixecutive Summary Programme (Jan-23)	3118	10-Aug-20 A	28-Mar-27	3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q1 Q2 Q1 Q1 Q2 Q1
Starting Date 119.CD.GEN.10000	Starting Date	0	10-Aug-20 A 10-Aug-20 A	10-Aug-20 A	
Key date KD1		411	10-Aug-20 A	24-Sep-21 A	
119.KD.CIV.10000	M1 - M5 Diversion	411	10-Aug-20 A	24-Sep-21 A	
Section 1 of the works 119.S1.CIV.10000	Temporary DG Store Construction	458 361	10-Aug-20 A 10-Aug-20 A	16-Nov-22 A 05-Aug-21 A	
119.S1.CIV.10010	DG Store Demolition and Site Formation Work	97	06-Aug-21 A	16-Nov-22 A	
Section 2 of the works	d Shitdown	1883	05-Nov-20 A	31-Dec-25	
Decomissioning, Demolition and 119.S2.CIV.22000	d Shutdown Decommissioning, Shutdown and Demolition	519 519	05-Nov-20 A 05-Nov-20 A	30-Jul-22 A 30-Jul-22 A	
Temporary Washwater Equaliz		224	25-Nov-21 A	22-Jun-22 A	
119.S2.CIV.20180 119.S2.MEP.20130	Civil and Structural Works E&M Works	92 67	25-Nov-21 A 11-Mar-22 A	26-May-22 A 22-Jun-22 A	
Stage 1 Filter		1280	07-Mar-22 A	30-Sep-25	
119.S2.CIV.20000 119.S2.CIV.20010	Pipe Pile, Excavation and Lateral Support Civil and Structural Works	216 435	07-Mar-22 A 31-Jan-23	02-May-23 09-Apr-24	
119.S2.MEP.20000	E&M Works	860	25-May-23	30-Sep-25	
Stage 2 Filter		1285	15-Jan-22 A	04-Oct-25	
119.S2.CIV.20020 119.S2.CIV.20030	Pipe Pile, Excavation and Lateral Support Civil and Structural Works	168 373	15-Jan-22 A 03-Mar-23	05-Jun-23 09-Mar-24	
119.S2.MEP.20010	E&M Works	860	29-May-23	04-Oct-25	
South Work Pumping Station		1343	24-Dec-21 A	04-Oct-25	
119.S2.CIV.20040 119.S2.CIV.20050	Pipe Pile, Excavation and Lateral Support Civil and Structural Works	285 372	24-Dec-21 A 14-Jun-23	13-Jun-23 19-Jun-24	
119.S2.MEP.20020	E&M Works	709	27-Oct-23	04-Oct-25	
Residual Management Facilities	s Pipe Pile, Excavation and Lateral Support	1269 365	12-Nov-21 A 12-Nov-21 A	02-Jul-25 23-Jun-23	
119.S2.CIV.20060 119.S2.CIV.20070	Pipe Pile, Excavation and Lateral Support Civil and Structural Works	365	12-Nov-21 A 24-Jun-23	23-Jun-23 07-Jun-24	
119.S2.MEP.20030	E&M Works	558	23-Dec-23	02-Jul-25	
Ozone Building 119.S2.CIV.20080	Pipe Pile, Excavation and Lateral Support	1310 254	17-Jan-22 A 17-Jan-22 A	29-Sep-25 01-Apr-23	
119.S2.CIV.20090	Pipe Pile, Excavation and Lateral Support Civil and Structural Works	798	02-Apr-23	01-Apr-23 07-Jun-25	
119.S2.MEP.20040	E&M Works	718	13-Oct-23	29-Sep-25	
Flocculation and Sedimentation 119.S2.CIV.20100	Tank Pipe Pile, Excavation and Lateral Support	1287 428	08-Feb-22 A 08-Feb-22 A	23-Sep-25 15-Sep-23	
119.S2.CIV.20110	Civil and Structural Works	159	16-Sep-23	21-Feb-24	
119.S2.MEP.20050	E&M Works	679	15-Nov-23	23-Sep-25	
Washwater Equalization Tank 119.S2.CIV.20120	Pipe Pile, Excavation and Lateral Support	1553 386	02-Jan-21 A 02-Jan-21 A	03-Apr-25 15-Apr-22 A	
119.S2.CIV.20130	Civil and Structural Works	241	30-Mar-22 A	24-Apr-23	
119.S2.MEP.20060	E&M Works	710	25-Apr-23	03-Apr-25	
Inlet Works and New Sampling 119.S2.CIV.20150	Room Civil and Structural Works	681 222	29-May-23 29-May-23	08-Apr-25 05-Jan-24	
119.S2.MEP.20070	E&M Works	613	05-Aug-23	08-Apr-25	
Elevated Walkway 119.S2.CIV.20160	Civil and Structural Works	661 542	22-Jan-24 22-Jan-24	12-Nov-25 16-Jul-25	
119.S2.MEP.20080	E&M Works	304	13-Jan-25	12-Nov-25	
WTW Logistics Centre	EMMWata	815	04-May-23	26-Jul-25	
119.S2.MEP.20090 Flowmeter House	E&M Works	815 735	04-May-23 04-Mar-23	26-Jul-25 07-Mar-25	
119.S2.MEP.20100	E&M Works	735	04-Mar-23	07-Mar-25	
New Administration Building 119.S2.MEP.20110	E&M Works	438 438	29-Nov-23 29-Nov-23	08-Feb-25 08-Feb-25	
119.CD.GEN.10040	Access to Portion H from 6/WSD/21	0	29-Nov-23*		
119.S2.MEP.20120	SCADA Installation and DCS Migration	330	16-Mar-24	08-Feb-25	
Geotechnical Works 119.S2.CIV.20170	Civil Works	379 379	24-Jun-23 24-Jun-23	06-Jul-24 06-Jul-24	
Road and Utilities	Designed and Descare Disc	1770	25-Jan-21 A	29-Nov-25	
119.S2.CIV.21010 119.S2.CIV.21030	Drainage and Process Pipe Underground Power Supply Cable Laying	1178 243	25-Jan-21 A 27-Oct-23	15-Jul-25 25-Jun-24	
119.S2.CIV.21000	Road Works and Other Utilities	615	25-Mar-24	29-Nov-25	
Inspection and Commissioning		248 52	28-Apr-25	31-Dec-25 18-Jun-25	
119.S2.INS.10030 119.S2.INS.10000	DG Inspection WSD Inspection	67	28-Apr-25 06-Jun-25	11-Aug-25	
119.S2.INS.10020	EPD Inspection	26	14-Jun-25	09-Jul-25	
119.S2.INS.10010	FSI Inspection	111	20-Aug-25	08-Dec-25	
119.S2.INS.10040 Section 3 of the works	Pre-commissioning Tests and Test on Completion	87 320	06-Oct-25 23-Feb-21 A	31-Dec-25 02-Mar-22 A	
119.S3.CIV.10000	Section 3 - Landscaping Softworks within Portion D	320	23-Feb-21 A	02-Mar-22 A	
Section 3A of the works 119.S3A.CIV.10000	Section 3A - Establishment Works within Portion D	391 391	29-Aug-21 A 29-Aug-21 A	02-Mar-22 A 02-Mar-22 A	
Section 4 of the works		81	01-Jan-26	22-Mar-26	
119.S4.CIV.10000	Section 4 - Landscaping Softworks within Portion A&B	81	01-Jan-26	22-Mar-26	
Section 4A of the works 119.S4A.CIV.10000	Section 4A - Establishment works within portion A&B	371 371	23-Mar-26 23-Mar-26	28-Mar-27 28-Mar-27	
Section 5 of the works		2245	10-Aug-20 A	27-Jan-27	
119.S5.CIV.10000	Section 5 - Post-planting Monitoring and Maintenance Works within Portion A, D & G	2245 611	10-Aug-20 A 27-May-25	27-Jan-27 27-Jan-27	
Section 6 of the works 119.S6.CIV.10000	Section 6 - Extended Tests (ET) within Portion A, B & H	611	27-May-25 27-May-25	27-Jan-27 27-Jan-27	
Sectional Completion Date		2011	24-Sep-21 A	28-Mar-27	
119.CD.GEN.10010 119.CD.GEN.10020	key date KD1 - Diversion of Pipelines M1, M2, M3, M4 and M5 Section 1 - Relocate DG Stores, Site formation for New Administration Building	0		24-Sep-21 A 16-Nov-21 A	
119.CD.GEN.10050	Section 3 - Landscaping Softworks within Portion D	0		02-Mar-22 A	
119.CD.GEN.10060	Section 3A - Establishment Works within Portion D	0		02-Mar-22 A	
119.CD.GEN.10030	Section 2 - Portion A&B const, E&M in portion H, Pipeline diversion M1 to M5	0		31-Dec-25*	
119.CD.GEN.10070 119.CD.GEN.10090	Section 4 - Landscaping Softworks within Portion A&B Section 5 - Post-planting Monitoring and Maintenance Works within Portion A, D & G	0		22-Mar-26 27-Jan-27	
119.CD.GEN.10100	Section 6 - Extended Tests (ET) within Portion A, B & H	0		27-Jan-27	
119.CD.GEN.10080	Section 4A - Establishment works within portion A&B	0		28-Mar-27	
	tu Reprovisioning of Sha Tin Water Treatment Works	4			Critical Work Actual Level of Effort Page 1 of 1
	b) - Water Treatment Works and Ancillary Facilities EXECUTIVE SUMMARY PROGRAMME			tual Work	Summary Level of Effort
		'			

#### Contract No. 6/WSD/21 In-situ Reprovisioning of Sha Tin Water Treatment Works (South Works) Administration Be

P6. ID Activity Name Total Late Start Late Finish Working 2024 N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D . Total 1633 10-Nov-21 30-Apr-26 0 10-Nov-21 30-Apr-26 In-situ Reprovisioning of Sha Tin WTW (South Works) - Admin. Bldg. (1st Programme) 30-Apr-26 1633 Nov-21 0 10-Nov-21 30-Apr-26 Contract Date 1633 10-Nov-21 30-Apr-26 10-Nov-21 30-Apr-26 7d/w x1 Key Dates 1268 10-Nov-21 30-Apr-25 0 10-Nov-21 30-Apr-25 7d/w x10 Contract Date WSD-CD-01 Contract Date 0 10-Nov-21 0 10-Nov-21 7d/w x10 starting date WSD-CD-02 starting date 0 17-Nov-21 0 17-Nov-21 7d/w x10 WSD-CD-03 Completion of Date 0 30-Apr-25\* 0 30-Apr-25 7d/w x10 Sectional Completion 30-Apr-26 7d/w x10 365 0 30-Apr-25 30-Apr-26 30-Apr-25 Section 1 - All Works except the Works in Section 2 & 2A 30-Apr-25 30-Apr-25 0 30-Apr-25 0 30-Apr-25 7d/w x10 WSD-SC-1-01 Contractual Completion Date according to CDP1 (1260d after starting date) 30-Apr-25\* 30-Apr-25 7d/w x10 0 0 30-Apr-25\* WSD-SC-1-02 Planned Completion Date 0 0 30-Apr-25 7d/w x10 0 30-Apr-25 30-Apr-25 0 30-Apr-25 30-Apr-25 7d/w x10 Section 2 - Landscaping Softworks within Portion A Contractual Completion Date according to CDP1 (1260d after starting date) 7d/w x10 WSD-SC-2-01 0 30-Apr-25\* 0 30-Apr-25 WSD-SC-2-02 Planned Completion Date 0 30-Apr-25\* 30-Apr-25 7d/w x10 0 Section 2A - Establishment Works wihin Portion A 0 30-Apr-26 30-Apr-26 0 30-Apr-26 30-Apr-26 7d/w x10 Contractual Completion Date according to CDP1 (1625d after starting date) WSD-SC-3-01 0 30-Apr-26\* 0 30-Apr-26 7d/w x10 WSD-SC-3-02 Planned Completion Date 0 30-Apr-26\* 0 30-Apr-26 7d/w x10 Key Dates-1 265 21-Oct-23 12-Jul-24 0 21-Oct-23 12-Jul-24 7d/w x10 KD1 - Completion of the Works as specified in Clause PS 0.21 0 21-Oct-23 21-Oct-23 0 21-Oct-23 21-Oct-23 7d/w x10 Contractual Completion Date acco WSD-KD-1-01 Contractual Completion Date according to CDP1 (703d after starting date) 21-Oct-23\* 0 21-Oct-23 7d/w x10 0 Planned Completion Date WSD-KD-1-02 0 21-Oct-23\* 21-Oct-23 Planned Completion Date 0 7d/w x10 KD2 - Completion of the Works as specified in Clause PS 0.22 0 12-Jul-24 12-Jul-24 0 12-Jul-24 12-Jul-24 7d/w x10 Contractual WSD-KD-2-01 Contractual Completion Date according to CDP1 (968d after starting date) 0 12-Jul-24\* 0 12-Jul-24 7d/w x10 Planned Com WSD-KD-2-02 Planned Completion Date 0 12-Jul-24\* 0 12-Jul-24 7d/w x10 Access Date 0 17-Nov-21 118 15-Mar-22 15-Mar-22 17-Nov-21 7d/w x10 Portion A & Portion B WSD-PS-01 Portion A & Portion B 0 17-Nov-2 118 15-Mar-22 7d/w x10 Major Submission / Procurement 452 )4-Feb-23 | 684 | 1 9-Dec-24 7d/w x' Major Submission 44 17-Nov-21 30-Dec-21 132 15-Dec-21 11-May-22 7d/w x10 Sub-contract Management Plan & Subletting Procedure - Submission & Approval by PM WSD-MS-01 Sub-contract Management Plan & Subletting Procedure - Submission & Approval by PM 30 17-Nov-21 16-Dec-21 28 15-Dec-21 13-Jan-22 7d/w x10 Safety Plan - Submission & Approval by PM WSD-MS-02 Safety Plan - Submission & Approval by PM 30 24-Nov-21 23-Dec-21 139 12-Apr-22 11-May-22 7d/w x10 Environmental Management Plan - Submission & Approval by PM WSD-MS-03 Environmental Management Plan - Submission & Approval by PM 30 01-Dec-21 30-Dec-21 132 12-Apr-22 11-May-22 7d/w x10 Subletting Package 452 10-Nov-21 04-Feb-23 684 10-Nov-21 19-Dec-24 7d/w x10 Independent Checking Engineer/ AP/ RSE WSD-P-00 Independent Checking Engineer/ AP/ RSE 30 15-Jan-22 118 14-Apr-22 13-May-22 7d/w x10 17-Dec-21 Design Consultant for Foundation and ELS 09-Dec-21 7d/w x10 WSD-P-01 Design Consultant for Foundation and ELS 30 10-Nov-21 09-Dec-21 0 10-Nov-21 Design Consultant for MiC WSD-P-02 Design Consultant for MiC 30 17-Dec-21 15-Jan-22 118 14-Apr-22 13-May-22 7d/w x10 Design Consultant for Administration Building WSD-P-03 Design Consultant for Administration Building 30 15-Jan-22 145 11-May-22 09-Jun-22 7d/w x10 17-Dec-21 Design Consultant for Other Permanent Structure incl. Elevated Walkways, Drainage WSD-P-04 Design Consultant for Other Permanent Structure incl. Elevated Walkways, Drainage 30 16-Jan-22 14-Feb-22 725 11-Jan-24 09-Feb-24 7d/w x10 Sub-Contract for Prefabrication and Installation of MiC WSD-P-05 Sub-Contract for Prefabrication and Installation of MiC 60 15-Jul-22 12-Sep-22 88 11-Oct-22 09-Dec-22 7d/w x10 Sub-Contract for Ground Investigation WSD-P-06 Sub-Contract for Ground Investigation 45 28-Feb-22 28 12-Feb-22 28-Mar-22 7d/w x10 15-Jan-22 Sub-Contract for Surveying & Setting-Out Works (by small work order) WSD-P-07 Sub-Contract for Surveying & Setting-Out Works (by small work order) 30 13-Feb-22 53 09-Mar-22 07-Apr-22 7d/w x10 15-Jan-22 Sub-Contract for Condition Survey Works (by small work prder WSD-P-08 Sub-Contract for Condition Survey Works (by small work order) 30 13-Feb-22 53 09-Mar-22 07-Apr-22 7d/w x10 15-Jan-22 Sub-Contract for Refurblishment Works of PM's Site Office (by small work order) Sub-Contract for Refurblishment Works of PM's Site Office (by small work order) WSD-P-09 30 15-Jan-22 13-Feb-22 1040 20-Nov-24 19-Dec-24 7d/w x10 Sub-Contract for Provision of Material Hoist WSD-P-12 60 14-Feb-22 412 02-Feb-23 02-Apr-23 Sub-Contract for Provision of Material Hoist 17-Dec-21 7d/w x10 WSD-P-13 Sub-Contract for Waterproofing Works of Administration Building 60 15-Apr-22 287 29-Nov-22 27-Jan-23 7d/w x10 Sub-Contract for Waterproofing Works of Administration Building 15-Feb-22 Sub-Contract for Provision of Furniture of Administration Building WSD-P-14 Sub-Contract for Provision of Furniture of Administration Building 60 7d/w x10 16-Apr-22 14-Jun-22 729 14-Apr-24 12-Jun-24 Sub-Contract for ELS Works WSD-P-15 Sub-Contract for ELS Works 60 14-Feb-22 129 25-Apr-22 23-Jun-22 7d/w x10 17-Dec-21 ----Sub-Contract for Foundation Works of Administration Building WSD-P-16 Sub-Contract for Foundation Works of Administration Building 60 14-Feb-22 77 04-Mar-22 02-May-22 7d/w x10 17-Dec-21 Sub-Contract for Superstructure Works of Administration Building WSD-P-17 Sub-Contract for Superstructure Works of Administration Building 60 14-Feb-22 222 27-Jul-22 24-Sen-22 7d/w x10 17-Dec-21 Sub-Contract for Mainland East Regional Lab for MIC Works WSD-P-18 Sub-Contract for Mainland East Regional Lab for MIC Works 60 26-Sep-22 478 19-Nov-23 7d/w x10 29-Jul-22 17-Jan-24 Sub-Contract for BS Installation Works of Administration Building WSD-P-19 Sub-Contract for BS Installation Works of Administration Building 60 15-Feb-22 15-Apr-22 361 11-Feb-23 11-Apr-23 7d/w x10 Date Milestone Non-Critical Task FIRST PROGRAMME REV. 1 03-Nov-21 Near Critical Task Finished Task 19-Jan-22 Critical Task Tasks Summary 俊和

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Revision 2 First Issue

	Norks) - Admin. Bldg.	act No. 6/WSD/2	I In-situ	u Repro	visioning	of Sha	Tin Wa	ater Treatment Works (South Works) Administration Building Page 2 of Date prepared : 11-Feb-22 at 1
P6. ID	Activity Name	Du	: Start	Finish	Total Late Star Float	t Late Finish	Working Calendars	2022 2023 2024 2025 2026 2027
	Out-Operation FO lock-line Wester of Administration Duilding		45 5-1-00	45 Are 00		2 44 4== 02		<u>INDJFMAMJJJASONDJFMAMJJASONDJFMAMJJASONDJFMAMJJASONDJFMAMJJASONDJFMAMJJASONDJFMAMJJASONDJFMAMJJASO</u>
WSD-P-20	Sub-Contract for FS Installation Works of Administration Building		15-Feb-22		361 11-Feb-2			
WSD-P-21	Sub-Contract for ABWF & Fit-out Works of Administration Building		15-Feb-22		112 07-Jun-22	-		
WSD-P-22	Sub-Contract for Cladding Installation Works of Administration Building	60	15-Feb-22		112 07-Jun-22			
WSD-P-23	Sub-Contract for Green Roof & Landscaping Works	60	16-Apr-22	14-Jun-22	112 06-Aug-2	2 04-Oct-22	7d/w x10	Sub-Contract for Green Roof & Landscaping Works
WSD-P-24	Sub-Contract for Irrigation System	60	16-Apr-22	14-Jun-22	748 03-May-2	4 01-Jul-24	7d/w x10	Sub-Contract for Irngation System
WSD-P-25	Sub-Contract for Lift Installation	60	15-Feb-22	15-Apr-22	557 26-Aug-2	3 24-Oct-23	7d/w x10	Sub-Contract for Lift Installation
WSD-P-26	Sub-Contract for Structure Works of Elevated Walkway	60	08-Apr-22	06-Jun-22	63 10-Jun-22	2 08-Aug-22	7d/w x10	Sub-Contract for Structure Works of Elevated Walkway
WSD-P-27	Sub-Contract for ABWF, Fitting Out, E&M Works of Elevated Walkway	60	05-Oct-22	03-Dec-22	63 07-Dec-2	2 04-Feb-23	7d/w x10	Sub-Contract for ABWF, Fitting Dut, E&M Works of Elevated Walkway
Material Proce	urement	35	6 14-Feb-22	04-Feb-23	557 11-Mar-22	2 14-Aug-24	7d/w x10	
Curtain Wall/		25	3 16-Apr-22	29-Dec-22	271 12-Jan-23	3 26-Sep-23	7d/w x10	
WSD-P-M-03	Submission & Approval for Curtain Wall Material Sample & Shop Drawing	90	16-Apr-22	14-Jul-22	271 12-Jan-23	3 11-Apr-23	7d/w x10	Submission & Approval for Curtain Wall Material Sample & Shop Drawing
WSD-P-M-04	Glass Fabrication & Delivery for Prototype Demo	90	15-Jul-22	12-Oct-22	271 12-Apr-23	3 10-Jul-23	7d/w x10	Glass Fabrication & Delivery for Prototype Demo
WSD-P-M-05	Visual Prototype Installation	50	13-Oct-22	01-Dec-22	271 11-Jul-23	29-Aug-23	7d/w x10	Visual Prototype Installation
WSD-P-M-06	Performance Test of Prototype	28	02-Dec-22	29-Dec-22	271 30-Aug-2	3 26-Sep-23	7d/w x10	🔲 Pefformance Teșt of Prototype
Lift E1, E2 &			5 16-Apr-22		557 25-Oct-23	•		
WSD-P-M-07	Drawing Submission & Approval for Lift (E1, E2 & E3)	90			557 25-Oct-23	0		Drawing Submission & Approval for Lift (E1, E2 & E3)
WSD-P-M-08	Material Submission & Approval for Lift (E1, E2 & E3)	45			557 23-Jan-24			
				-				
WSD-P-M-09	Material Procurement & Delivery (E1, E2 & E3)				557 08-Mar-24	, , , , , , , , , , , , , , , , , , ,		
Sheetpile	Material Outerianian 9. American	88	14-Feb-22		25 11-Mar-22			
WSD-P-M-10	Material Submission & Approval	28	14-Feb-22		25 11-Mar-22			
WSD-P-M-11	Material Procurement & Delivery	60	14-Mar-22	12-May-22	25 08-Apr-22	2 06-Jun-22	7d/w x10	Material Procurement & Delivery
ELS Steel Me		88	14-Feb-22		71 26-Apr-22			
WSD-P-M-12	Material Submission & Approval	28	14-Feb-22	13-Mar-22	71 26-Apr-22	2 23-May-22	7d/w x10	
WSD-P-M-13	Material Procurement & Delivery	60	14-Mar-22	12-May-22	71 24-May-2	2 22-Jul-22	7d/w x10	Material Procurement & Delivery
Concrete		88	14-Feb-22		209 11-Sep-2			
WSD-P-M-14	Material Submission & Approval	28	14-Feb-22	13-Mar-22	209 11-Sep-2	2 08-Oct-22	7d/w x10	🗖 Material Submission & Approval
WSD-P-M-15	Material Procurement & Delivery	60	14-Mar-22	12-May-22	209 09-Oct-22	2 07-Dec-22	7d/w x10	Material Procurement & Delivery
Rebar		88	14-Feb-22	12-May-22	209 11-Sep-2	2 07-Dec-22	7d/w x10	
WSD-P-M-16	Material Submission & Approval	28	14-Feb-22	13-Mar-22	209 11-Sep-2	2 08-Oct-22	7d/w x10	🛱 Material Submission & Approval
WSD-P-M-17	Material Procurement & Delivery	60	14-Mar-22	12-May-22	209 09-Oct-22	2 07-Dec-22	7d/w x10	Material Procurement & Delivery
Contractor's De	esign	66	08-Dec-21	29-Sep-23	944 07-Feb-22	2 30-Apr-26	7d/w x10	
WSD-S-01	Submission & Approval for Project Design Plan	60	08-Dec-21	05-Feb-22	97 15-Mar-22	2 13-May-22	7d/w x10	Submission & Approval for Project Design Plan
Design for MiC		21	) 15-Feb-22	12-Sep-22	88 14-May-2	2 09-Dec-22	7d/w x10	
WSD-D-M01	Submission & Approval for MiC Layouts Proposal (AIP)	60	15-Feb-22*		88 14-May-2			
WSD-D-M02	Submission & Approval for MiC Layouts Proposal (DDA)	90	16-Apr-22	14-Jul-22	88 13-Jul-22	10-Oct-22	7d/w x10	Submission & Approval for MiC Layouts Proposal (DDA)
WSD-D-M03	Submission & Approval for MiC Details (AIP)	90	16-Apr-22	14-Jul-22	88 13-Jul-22	10-Oct-22	7d/w x10	Submission & Approval for MiC Details (AIP)
WSD-D-M04	Submission & Approval for MiC Details (DDA)	60	· ·		88 11-Oct-22			
	ninistration Building		0 07-Feb-22		954 07-Feb-22			
WSD-D-AB00A	Submission & Approval for ELS Works Deisgn (AIP)		07-Feb-22		0 07-Feb-22			Submission & Approval for ELS Works Deisgn (AIP)
		60		· ·				
WSD-D-AB00B	Submission & Approval for ELS Works Deisgn (DDA)		08-Apr-22		0 08-Apr-22			
WSD-D-AB01A	Submission & Approval for Foundation Deisgn (AIP)		07-Feb-22		25 04-Mar-22	,		
WSD-D-AB01B	Submission & Approval for Foundation Deisgn (DDA)	60	08-Apr-22	06-Jun-22	25 03-May-2	2 01-Jul-22	7d/w x10	
WSD-D-AB02A	Submission & Approval for Permanent Work Structure Deisgn of Administration E	Building (AIP) 60	08-Apr-22	06-Jun-22	63 10-Jun-22	2 08-Aug-22	7d/w x10	
WSD-D-AB02B	Submission & Approval for Permanent Work Structure Deisgn of Administration E	Building (DDA) 90	07-Jun-22	04-Sep-22	110 25-Sep-2	2 23-Dec-22	7d/w x10	Submission & Approval for Permanent Work Structure Deisgn of Administration Building (DDA)
WSD-D-AB03A	Submission & Approval for BS/ FS/ Security' Design of Administration Building (A	AIP) 60	07-Jun-22	05-Aug-22	249 11-Feb-23	3 11-Apr-23	7d/w x10	Submission & Approval for BS/ FS/ Security Design of Administration Building (AIP)
WSD-D-AB03B	Submission & Approval for BS/ FS/ Security' Design of Administration Building (I	DDA) 90	06-Aug-22	03-Nov-22	249 12-Apr-23	3 10-Jul-23	7d/w x10	Submission & Approval for B\$/ FS/ Security Design of Administration Building (DDA)
WSD-D-AB04A	Submission & Approval for Dangerous Goods Stores (AIP)	60	05-Sep-22	03-Nov-22	583 10-Apr-24	08-Jun-24	7d/w x10	Submission & Approval for Dangerous Goods Stores (AIP)
WSD-D-AB04B	Submission & Approval for Dangerous Goods Stores (DDA)		04-Nov-22		583 09-Jun-24			
WSD-D-AB05A	Submission & Approval for Mainland East Regional Laboratory (AIP)				470 20-Sep-2	· ·		
			01-001-22	0071ug-22	110 20-06p-2	10-1107-23		
Milestone	Non-Critical Task			T 004				Date Revision Checked App
Near Crit	ical Task Finished Task		FIRS	I PRC	OGRAN	IIVIE R	EV.	
Critical Ta	ask Tasks Summary			<b>A</b> 11	ΑCTIV	TIEC		後和 19-Jan-22 Revision 1 First Issue PF AH
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The Description         State Name         State Nam         Sta		sioning of Sha Tin Vorks) - Admin. Bldg.	Contract No. 6/WSD	)/21	In-situ	Repro	visic	oning o	of Sha T	Tin Wa	ter Treatment Works	(South W	orks) Admi	nistration E	3uilding	
No. 2004         Secure L-Parent Control Marker Secure Lange of Secure Lange o		· · · · ·		Dur.	Start	Finish		Late Start	Late Finish		2022	2023		2024	2025	
No. 1044000       Automask Lagrandov Marshagher Frainwork (Marshagher Marshagher						00.11 00		40.11 00	40.5 + 04		NDJFMAMJJASONDJ	FMAMJJA		MJJASOND	D J F M A M J J A	ASOND
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W3D 9 4028         Summary 4 Agenetic transport Water for the Game and Dargenetic transport Water Schwart for Company for the Game and Comp				60	03-Apr-23											
1000 46/10         24-bitsed A-ground II Latence Wolds for the Gene Roal and Comparised Ingene Opene OpeneOpene	WSD-D-AB09B			90	02-Jun-23	, , , , , , , , , , , , , , , , , , ,			30-Apr-26	7d/w x10						
Proceed Worker Work         Proceed Worker	WSD-D-AB10A	Submission & Approval for Landsca	pe Works for the Green Roof and Courtyard incl. Irrigation System (All	60	07-Jun-22	05-Aug-22	685	22-Apr-24	20-Jun-24	7d/w x10						
WDD 05255         Submission Algoritation Pressure Wasse Subtice Design Observed Values Work 2004         00         04/0-22         04/0	WSD-D-AB10B	Submission & Approval for Landsca	pe Works for the Green Roof and Courtyard incl. Irrigation System (DE	90	06-Aug-22	03-Nov-22	685	21-Jun-24	18-Sep-24	7d/w x10	Subm	ission & Approval f	or Landscape Works	for the Green Roof a	and Courtyard Incl. In	rigation Sys
VSD 0-5202         Samias A Appoint Primate Work Subschap Bage (I Bender Walder Verffelder Verffelde		-			•								t Works Structure Di	cign of Elevated \\//		
VISD-5323         Sumsen Approximation Adders, Find, Edd Design of Beneral Mathing No.2 (UP)         00         00-06-22        00-06-22        00-06-22			<b>.</b>													2 (004)
WSD-0200000000000000000000000000000000000								•								
Other Name         Apple         Bit Machine         Apple         Bit Machine         Apple         Description         Apple         A			· · · · · · · · · · · · · · · · · · ·								ους 			, , , , , , , , , , , , , , , , , , ,		` : î : i
WED_D-07024         Subtractions & Approvale for Permanent Works Structure Design of Elevated Walkeny No. 1 (AP)         0         0.1/-0.22         0.0         0.0.1/-0.22         0.0.1/-0.2			Fitout, E&M Design of Elevated Walkway No.2 (DDA)									Supmission	& Approval for ABW	r, Fitout, E&M Desiç		way No.2 (D
WBD-D0128         Butmaton Is Agrown for Permanent Water, Structure Design of Elevated Watery No.1 (DOA)         10         2.9 Sape 2         8         0.4 Aug 2		<u> </u>	ant Weder Otersteine Design of Eleverted Wellever, No. 4 (AID)						-		·····	Submi		Permanent Works S	tructure Design of FI	lovatod Walk
WBD-2073A         Submission A Approval for Overall Drange System (AP)         21         15 Feb22         07 Mar 22         75         16 Feb23         07 Mar 23         75         07 Mar 24         09 w x10         ID Submission A Approval for Overall Drange System (CDA)         90         06 Mar 27         57 Mar 24         07 Mar 24																
WSD-0-0103         Jutimission & Approval for Overall Diarings System (DDA)         On WARK         Or WARK				_		· ·		•			D Cubminsion & Approval for					
Interface Maragement         GO2         17 Alons 20         02 Algo 20         677         07 Mar 20         07 Face 20         7 alons 10           UBGo with 14WS2019         Agee the Design Requirements for Man Control Room Security Control Room Secure Room Secure Room Security Control Room Secure Room Security Con													1   1   1   1	·		
Instance with XMSD19         State // Agree the Design Requirements for Handback Room Sever Roome         State // Agree the Design Requirements for Handback Room Sever Roome         State // Agree the Design Requirements for Handback Room Sever Roome         State // Agree the Design Requirements for Handback Room Sever Roome         State // Agree the Design Requirements for Handback Room Sever Roome         State // Agree the Design Requirements for Handback Room Sever Roome         State // Agree the Design Requirements for Handback Room Sever Roome         State // Agree the Design Requirements for Handback Room Sever Roome         State // Agree the Design Requirements for Handback Room Sever Roome         State // Agree the Design Requirements for Handback Room Sever Roome         State // Agree the Design Requirements for Handback Room Sever Roome         State // Agree the Design Requirements for Handback Room Sever Roome         State // Agree the Design Requirements for Handback Room Sever Roome         State // Agree the Design Requirements for Handback Room Sever Roome         State // Agree the Design Requirements for Handback Room Sever Roome         State // Agree the Design Requirements for Handback Roome Sever Roome         State // Agree the Design Requirements for Handback Roome Sever Roome         State // Agree the Design Requirements for Handback Roome Sever R			Drainage System (DDA)													
WSD-MA1         Ages the Design Requirements for Main Control Room Security Co												<b></b>				
WSD M4.02         Ages the Design Requirements for Elevated Walkway No.1         90         0.3.4.9.2         0.2.4.9.2.2         63         0.7.Mar 22         0.4.1.9.2.2         7.Mar 70         No.1         Ages the Design Requirements for Elevated Walkway No.2         100         0.4.9.9.2         0.7.4.9.2.2         0.7.4.9.2.2         7.Mar 72         7.Mar 72         No.1         Ages the Design Requirements for Elevated Walkway No.2         100         No.1			Main Control Room/ Security Control Room/ Server Rooms									Agree the Design R	equirements for Mair	n Control Room/ Ser	curity Control Room/	Server Roon
WSD-MA23         Agene the Design Requirements for Elevated Wakewy No.2         160         04-Qo-22         857         12.Aug-34         07.Feb-25         70 w.v10           Use Design Requirements for Elevated Wakewy No.2         100         17-Alow-21         16-Alow-22         545         16-Alow-22         72.W v10           WSD-MA4         Agene the Design Requirements of Integrated Security Management System with 3WSD/15 & 1WSD/17         100         17-Alow-21         16-Alow-22         545         16-Alow-22         72.W v10           Section of the Works         Section of the Works at Portion B         Section of the Works         Section of the Works         Section of the Works         Section of the Works at Portion B         Section of the Works         Section of			,						· ·			Agree the D	esign Requirements	for Elevated Walkw	ay No,1	
Laison with 3WSD15         100         17.Nov:21         16.Mar:22         545         16.Mar:22         74W x10           WSD.M0.4         Agree the Design Requirements of Integrated Security Management System with 3WSD/15 & 1/WSD/19         120         17.Nov:21         16.Mar:22         555         16.Mar:22         74W x10           Statisticant of the Works         120         17.Nov:21         16.Mar:22         555         16.Mar:23         12.Sep:23         7dW x10           WSD.W-PM01         Returbationent of PMS Site Office & Associated Works at Portion B         120         26Fab:22         25-Jun:22         1040         1-Jan:25         3dAr:25         7dW x10           WSD.W-PM01         Returbationent of PMS Site Office & Associated Works at Portion B         12         16Fab:22         28Fab:22         1040         1-Jan:25         3dAr:25         7dW x10           WSD.W-PM03         Temporary Damage Installation         12         07-Jan:22         2d-Jan:22         2d-Jan:22         7dW x10         14         Hebritshore of PMS Site Office & Associated Work at Portion H         18         Site Set ur           WSD.W-PV04         Reburg of Prediotrication Yad         10         0-Jan:22         2d-Jan:22         7dW x10         14         Hebritshore of PMS Site Office & Associated Work at Portion H         18         Site Set ur			,								Agree th					
WBD-MI-04         Agree the Design Requirements of Integrated Security Management System with 3/WBD/15 & 1/WBD/19         120         17 Avor-21         16 Adar-22         545         16 Map-23         12 Sep-23         7dlw x10         Agree the Design Requirements of Integrated Security Management System with 3/WD/15 & 1/WD/201         Security 300(2)           Bocclon 1 of the Works         17 Avor-21         10 Advr-23         305 11 Security 300(2)         306(2)												•				
Decision for model         Design of the bar			Integrated Security Management System with 3/WSD/15 & 1/WSD/19								Agree the Design Require	ments of Integrated	J Security Manageme	ent System with 3/W	\$D/15 & 1/W\$D/19	
WSD-W PM01         Returbishment of PMs Site Office & Associated Works at Porton B         120         26-Feb-22         25-Jun-22         1040         01-Jan-25         30-Apr-25         7diw x10         Image Institution         Returbishment of PMs Site Office & Associated Works at Porton B           WSD-W-PW02         Site Set up         1         15-Feb-22         26-Feb-22         26-Buly-22         24-May-22         24-May-23         24-May-23 <td>Section 1 of the</td> <td>Works</td> <td></td> <td>1261</td> <td>17-Nov-21</td> <td>30-Apr-25</td> <td>365</td> <td>15-Mar-22</td> <td>30-Apr-26</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Section 1 of the	Works		1261	17-Nov-21	30-Apr-25	365	15-Mar-22	30-Apr-26							
WSD.W-PW02         Site Set up         In         15-Feb-22         28-Feb-22         68         12-May-22         25-May-22         6dlw x01         III         Site Set up           WSD.W-PW03         Temporary Drainage Installation         24         01-Mar-22         28-Mar-22         68         26-May-22         23-Jur-22         6dlw x01         III         Temporary Drainage Installation           WSD.W-PW04         Relocation of WSD21 Site Office to High Block         12         07-Jur-22         20-Jur-22         07-Jur-22         07-Jur-22         07-Jur-22         07-Jur-25         6dlw x01         IIII         Relocation of WSD21 Site Office to High Block           Prefabrication Yard         30         13-Sep-22         12-Sep-23         54         10-Dec:20         07-Jur-25         6dlw x01         IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	Preliminary Wo	rks		575	15-Feb-22	12-Sep-23	961	12-May-22	30-Apr-26		V		7			
No. On the one of the one one of the one of the one of the one of the one of	WSD-W-PW01	Refurbishment of PM's Site Office 8	Associated Works at Portion B	120	26-Feb-22	25-Jun-22	1040	01-Jan-25	30-Apr-25	7d/w x10		PM's Site Office &	Associated Works a	t Portion B		
WSD.W-PW04         Relocation of 6WSD21 Site Office to High Block         12         07.Jun-22         0.Jun-22         0.Jun-23         0.Jun-23 <td>WSD-W-PW02</td> <td>Site Set up</td> <td></td> <td>12</td> <td>15-Feb-22</td> <td>28-Feb-22</td> <td>68</td> <td>12-May-22</td> <td>25-May-22</td> <td>6d/w x10</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	WSD-W-PW02	Site Set up		12	15-Feb-22	28-Feb-22	68	12-May-22	25-May-22	6d/w x10						
Predarication Yard         Site of Prelabrication Yard         Site of Prelabrication Yard           WSD-W-PY-01         Setup of Prelabrication Yard         36         13-Sep-22         12-Oct-22         88         10-Dec-22         7/4 wr.10           WSD-W-PY-02         Fabrication for Mock-up. Inspection & Approval by PM         60         13-Oct-22         12-Oct-22         88         09-Jan-23         09-Mar-23         7/dw x10         Fabrication of MiC Unit for Basement Level (40nos, PR = 24no/wk)           WSD-W-PY-03         Fabrication of MIC Unit to Stae - Batch 1 (for Basement Level (40nos, PR = 24no/wk)         35         12-Dec-22         15-Jan-23         133         23-Jun-23         30-Jun-23         6d/w x10         Implement of MiC Unit to Stae - Batch 1 (for Basement Level (40nos, PR = 24no/wk)           WSD-W-PY-05         Fabrication of MIC Unit to Stae - Batch 1 (for Basement Level (40nos, PR = 24no/wk)         35         16-Jan-23         133         23-Jun-23         6d/w x10         Implement of MIC Unit to Stae - Batch 1 (for Basement Level (40nos, PR = 24no/wk)         Fabrication of MIC Unit to Stae - Batch 1 (for Basement Level (40nos, PR = 24no/wk)         35         16-Jan-23         134         23-Jun-23         14d/w x10         Implement of MIC Unit to Stae - Batch 1 (for Basement Level (40nos, PR = 24no/wk)         Implement of MIC Unit to Stae - Batch 1 (for Basement Level (40nos, PR = 24no/wk)         Implement of MIC Unit to Stae - Batch 1 (for CUnit to Stae - Batch 1	WSD-W-PW03	Temporary Drainage Installation		24	01-Mar-22	28-Mar-22	68	26-May-22	23-Jun-22	6d/w x10						
WSD-W-PY-01         Setup of Prefabrication Yard         30         13-Sep-22         12-Oct-22         88         10-Dec-22         08-Jan-23         7d/w x10         Setup of Prefabrication Yard           WSD-W-PY-02         Fabrication for Mock-up, Inspection & Approval by PM         60         13-Oct-22         11-Dec-22         88         09-Jan-23         7d/w x10         Fabrication for Mock-up, Inspection & Approval by PM           WSD-W-PY-03         Fabrication of MIC Unit for Basement Level (40nos, PR= 24nolwk)         35         12-Dec-22         15-Jan-23         88         10-Mar-23         7d/w x10         Fabrication of MIC Unit for Basement Level (40nos, PR= 24nolwk)           WSD-W-PY-04         Delivery of MIC Unit to Site - Batch 1 (for Basement only)         7         09-Jan-23         16-Jan-23         132         32-Jun-23         6d/w x10         II         Delivery of MIC Unit for Ground Level (40nos, PR= 24nolwk)         10         Delivery of MIC Unit for Ground Level (40nos, PR= 24nolwk)         15         16-Jan-23         19-Feb-23         88         14-Apr-23         18-May-23         7d/w x10         III         Delivery of MIC Unit for Site - Batch 2 (for GF only)         8         11-Feb-23         20-Feb-23         16         05-Jul-23         13-Jul-23         6d/w x10         IIII         Fabrication of MIC Unit for First Floor Level (46nos, PR= 24nolwk)         15         20-Feb-2	WSD-W-PW04	Relocation of 6/WSD/21 Site Office	to High Block	12	07-Jun-22	20-Jun-22	1159	17-Apr-26	30-Apr-26	6d/w x10	Relocation of 6/W	/SD/21 Site Office t	o High Block			
Non-Wight Py-O2         Fabrication for Mock-up, Inspection & Approval by PM         60         13-Oct-22         11-Dec:22         88         09-Jan-23         09-Mar-23         7d/w x10         Fabrication for Mock-up, Inspection & Approval by PM           WSD-W-PY-02         Fabrication of MIC Unit for Basement Level (40nos, PR= 24no/wk)         35         12-Dec-22         15-Jan-23         88         10-Mar-23         7d/w x10         Fabrication of MIC Unit for Basement Level (40nos, PR= 24no/wk)         10         Delivery of MIC Unit to Site - Batch 1 (for Basement only)         7         09-Jan-23         16-Jan-23         133         23-Jun-23         6d/w x10         10         Delivery of MIC Unit to Site - Batch 1 (for Basement only)         7         09-Jan-23         16-Jan-23         133         23-Jun-23         6d/w x10         10         Delivery of MIC Unit to Site - Batch 1 (for Basement only)         7         09-Jan-23         16-Jan-23         134         13-Jun-23         6d/w x10         10         Delivery of MIC Unit to Site - Batch 1 (for Gasement only)         10         Delivery of MIC Unit to Site - Batch 2 (for GF only)         10         Delivery of MIC Unit to Site - Batch 2 (for GF only)         10         Delivery of MIC Unit to Site - Batch 2 (for GF only)         10         Delivery of MIC Unit to Site - Batch 2 (for GF only)         10         Delivery of MIC Unit to Site - Batch 2 (for GF only)         10         Delivery of MIC Unit to	Prefabrication			365	13-Sep-22											
MSD-W-PY-03         Fabrication of MiC Unit for Basement Level (40nos, PR=24no/wk)         35         12-Dec-22         15-Jan-23         88         10-Mar-23         13-Apr-23         7dw x10         Fabrication of MiC Unit for Basement Level (40nos, PR=24no/wk)           WSD-W-PY-02         Delivery of MiC Unit to Site - Batch 1 (for Basement only)         7         09-Jan-23         16-Jan-23         132         23-Jun-23         30-Jun-23         6dw x10         I         Delivery of MiC Unit for Basement Level (40nos, PR=24no/wk)           WSD-W-PY-05         Fabrication of MiC Unit to Site - Batch 1 (for Basement only)         35         16-Jan-23         19-Feb-23         88         14-Apr-23         18-May-23         7dw x10         I         Pabrication of MiC Unit for Ground Level (46nos, PR=24no/wk)           WSD-W-PY-06         Delivery of MiC Unit to Site - Batch 2 (for G/F only)         8         11-Feb-23         20-Feb-23         16         5-Ju-23         84         14-Apr-23         8dw x10         I         Delivery of MiC Unit for Site Batch 2 (for G/F only)         I         10         Delivery of MiC Unit for Site Batch 3 (for IF only)         I         10-Mar-23         84         14-Apr-23         22-Jun-23         7dw x10         I         Delivery of MiC Unit for Site Batch 3 (for G/F only)         II         Delivery of MiC Unit for Site Batch 3 (for G/F only)         II         Delivery of MiC Unit				30	· ·											
WSD-W-PY-04         Delivery of MiC Unit to Site - Batch 1 (for Basement only)         7         09-Jan-23         16-Jan-23         133         23-Jun-23         6d/w x10         Image: Delivery of MiC Unit to Site - Batch 1 (for Basement only)           WSD-W-PY-05         Fabrication of MiC Unit for Ground Level (46nos, PR= 24no/wk)         35         16-Jan-23         19-Feb-23         88         14-Apr-23         18-May-23         7d/w x10         Image: Problement only         Imaless onlintonlic to its only         Image: Problement	WSD-W-PY-02	Fabrication for Mock-up, Inspection	& Approval by PM	60	13-Oct-22											
WSD-W-PY-05       Fabrication of MiC Unit for Ground Level (46nos, PR= 24no/wk)       35       16-Jan-23       19-Feb-23       88       14-Apr-23       18-May-23       7/dw x10       Image: Fabrication of MiC Unit for Ground Level (46nos, PR= 24no/wk)         WSD-W-PY-06       Delivery of MiC Unit to Site - Batch 2 (for G/F only)       8       11-Feb-23       20-Feb-23       16       05-Ju-23       13-Ju-23       6d/w x10       Image: Fabrication of MiC Unit for Ground Level (46nos, PR= 24no/wk)       Image: Fabrication of MiC Unit for Site - Batch 2 (for G/F only)       Image: Fabrication of MiC Unit for Site - Batch 2 (for G/F only)       Image: Fabrication of MiC Unit for Site - Batch 2 (for G/F only)       Image: Fabrication of MiC Unit for Site - Batch 2 (for G/F only)       Image: Fabrication of MiC Unit for Site - Batch 2 (for G/F only)       Image: Fabrication of MiC Unit for Site - Batch 3 (for 1/F only)       Image: Fabrication of MiC Unit for Site - Batch 3 (for 1/F only)       Image: Fabrication of MiC Unit for Site - Batch 3 (for 1/F only)       Image: Fabrication of MiC Unit for Site - Batch 3 (for 1/F only)       Image: Fabrication of MiC Unit for Site - Batch 3 (for 1/F only)       Image: Fabrication of MiC Unit for Site - Batch 3 (for 2/F only)       Image: Fabrication of MiC Unit for Site - Batch 3 (for 1/F only)       Image: Fabrication of MiC Unit for Site - Batch 3 (for 2/F only)       Image: Fabrication of MiC Unit for Site - Batch 3 (for 2/F only)       Image: Fabrication of MiC Unit for Site - Batch 4 (for 2/F only)       Image: Fabrication of MiC Unit for Site - Batch 4 (for 2/F only)       Image: Fabrication of MiC Unit	WSD-W-PY-03	Fabrication of MiC Unit for Basemen	nt Level (40nos, PR= 24no/wk)	35	12-Dec-22	15-Jan-23	88	10-Mar-23	13-Apr-23	7d/w x10					no/wk)	
WSD-W-PY-06       Delivery of MiC Unit to Site - Batch 2 (for G/F only)       8       11-Feb-23       20-Feb-23       116       05-Jul-23       13-Jul-23       6d/w x10       III       Delivery of MiC Unit to Site - Batch 2 (for G/F only)         WSD-W-PY-07       Fabrication of MiC Unit for First Floor Level (46nos, PR=24no/wk)       35       20-Feb-23       26-Mar-23       88       19-May-23       22-Jul-23       6d/w x10       III       Delivery of MiC Unit for Site - Batch 2 (for G/F only)       III       Delivery of MiC Unit for Site - Batch 3 (for 1/F only)       8       18-Mar-23       27-Mar-23       94       14-Jul-23       22-Jul-23       6d/w x10       III       Delivery of MiC Unit for Site - Batch 3 (for 1/F only)       III       Delivery of MiC Unit for Site - Batch 3 (for 1/F only)       III       Delivery of MiC Unit for Site - Batch 3 (for 1/F only)       III       Delivery of MiC Unit for Site - Batch 3 (for 1/F only)       IIII       Delivery of MiC Unit for Second Floor Level & Car Park (41nos, PR= 24no/wk)       IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	WSD-W-PY-04	Delivery of MiC Unit to Site - Batch	1 (for Basement only)	7	09-Jan-23	16-Jan-23	133	23-Jun-23	30-Jun-23	6d/w x10						
WSD-W-PY-07         Fabrication of MiC Unit for First Floor Level (46nos, PR=24no/wk)         35         20-Feb-23         26-Mar-23         88         19-May-23         22-Jun-23         7/d/w x10         Image: Fabrication of MiC Unit for First Floor Level (46nos, PR=24no/wk)         PR=24no/wk)           WSD-W-PY-08         Delivery of MiC Unit to Site - Batch 3 (for 1/F only)         88         18-Mar-23         27-Mar-23         94         14-Jul-23         22-Jul-23         6d/w x10         Image: Fabrication of MiC Unit to Site - Batch 3 (for 1/F only)         Image: Fabrication of MiC Unit to Site - Batch 3 (for 1/F only)         Image: Fabrication of MiC Unit to Site - Batch 3 (for 1/F only)         Image: Fabrication of MiC Unit to Site - Batch 3 (for 1/F only)         Image: Fabrication of MiC Unit to Site - Batch 3 (for 1/F only)         Image: Fabrication of MiC Unit to Site - Batch 3 (for 1/F only)         Image: Fabrication of MiC Unit to Site - Batch 3 (for 1/F only)         Image: Fabrication of MiC Unit to Site - Batch 3 (for 1/F only)         Image: Fabrication of MiC Unit to Site - Batch 4 (for 2/F only)         Image: Fabrication of MiC Unit to Site - Batch 4 (for 2/F only)         Image: Fabrication of MiC Unit to Site - Batch 4 (for 2/F only)         Image: Fabrication of MiC Unit to Site - Batch 5 (for Car Park only)         Image: Fabrication of MiC Unit to Site - Batch 5 (for Car Park only)         Image: Fabrication of MiC Unit to Site - Batch 5 (for Car Park only)         Image: Fabrication of MiC Unit to Site - Batch 5 (for Car Park only)         Image: Fabrication of MiC Unit to Site - Batch 5 (for Car Park only)         Ima	WSD-W-PY-05	Fabrication of MiC Unit for Ground I	Level (46nos, PR= 24no/wk)	35	16-Jan-23	19-Feb-23	88	14-Apr-23	18-May-23	7d/w x10					lno/wk)	
WSD-W-PY-08         Delivery of MiC Unit to Site - Batch 3 (for 1/F only)         8         18-Mar-23         27-Mar-23         94         14-Jul-23         22-Jul-23         6d/w x10         III         Delivery of MiC Unit to Site - Batch 3 (for 1/F only)           WSD-W-PY-09         Fabrication of MiC Unit for Second Floor Level & Car Park (41nos, PR= 24no/wk)         35         27-Mar-23         30-Apr-23         88         23-Jun-23         27-Jul-23         7d/w x10         III         Delivery of MiC Unit to Site - Batch 4 (for 2/F only)         Fabrication of MiC Unit to Site - Batch 4 (for 2/F only)         7         22-Apr-23         02-Mar-23         28-Jul-23         6d/w x10         IIII         Delivery of MiC Unit to Site - Batch 4 (for 2/F only)         To Site - Batch 4 (for 2/F only)         To Site - Batch 4 (for 2/F only)         IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	WSD-W-PY-06	Delivery of MiC Unit to Site - Batch	2 (for G/F only)	8	11-Feb-23	20-Feb-23	116	05-Jul-23	13-Jul-23	6d/w x10						
WSD-W-PY-09       Fabrication of Mic Unit for Second Floor Level & Car Park (41nos, PR= 24no/wk)       35       27-Mar-23       30-Apr-23       88       23-Jun-23       7d/w x10       Image: Car Park (41nos, PR= 24no/wk)         WSD-W-PY-10       Delivery of Mic Unit to Site - Batch 4 (for 2/F only)       7       22-Apr-23       02-May-23       73       21-Jul-23       28-Jul-23       6d/w x10       Image: Car Park (41nos, PR= 24no/wk)         WSD-W-PY-10       Delivery of Mic Unit to Site - Batch 4 (for 2/F only)       7       22-Apr-23       02-May-23       73       21-Jul-23       28-Jul-23       6d/w x10       Image: Car Park (41nos, PR= 24no/wk)         WSD-W-PY-11       Delivery of Mic Unit to Site - Batch 5 (for Car Park only)       1       26-Apr-23       27       77       29-Jul-23       29-Jul-23       6d/w x10       Image: Car Park only)       Image: Car Park only)	WSD-W-PY-07	Fabrication of MiC Unit for First Floo	or Level (46nos, PR= 24no/wk)	35	20-Feb-23	26-Mar-23	88	19-May-23	22-Jun-23	7d/w x10		Fabrication (	of MiC Unit for First F	loor Level (46nos, P	'R=24no/wk)	
WSD-W-PY-10         Delivery of MiC Unit to Site - Batch 4 (for 2/F only)         7         22-Apr-23         02-May-23         73         21-Jul-23         28-Jul-23         6d/w x10         III         Delivery of MiC Unit to Site - Batch 4 (for 2/F only)           WSD-W-PY-11         Delivery of MiC Unit to Site - Batch 5 (for Car Park only)         1         26-Apr-23         77         29-Jul-23         6d/w x10         IIII         Delivery of MiC Unit to Site - Batch 5 (for Car Park only)	WSD-W-PY-08	Delivery of MiC Unit to Site - Batch	3 (for 1/F only)	8	18-Mar-23	27-Mar-23	94	14-Jul-23	22-Jul-23	6d/w x10		Delivery of N	liC Unit to Site - Bate	sh 3 (for 1/F only)		
WSD-W-PY-11         Delivery of MiC Unit to Site - Batch 5 (for Car Park only)         1         26-Apr-23         27         29-Jul-23         6d/w x10	WSD-W-PY-09	Fabrication of MiC Unit for Second I	Floor Level & Car Park (41nos, PR= 24no/wk)	35	27-Mar-23	30-Apr-23	88	23-Jun-23	27-Jul-23	7d/w x10		🔲 Fabricatio	n of MiC Unit for Sec	cond Floor Level & C	2ar Park (41nos, PR=	= 24no/wk)
	WSD-W-PY-10	Delivery of MiC Unit to Site - Batch	4 (for 2/F only)	7	22-Apr-23	02-May-23	73	21-Jul-23	28-Jul-23	6d/w x10		Delivery o	of MiC Unit to Site - F	Batch 4 (for 2/F only)	/	
WSD-W-PY-13 Fabrication of MIC for Elevated Walkway No.2 Incl. ABWF, fit-out, drainage system & conceal ducts 75 01-Mav-23 14-Jul-23 542 24-Oct-24 06-Jan-25 7d/w x10	WSD-W-PY-11	Delivery of MiC Unit to Site - Batch	5 (for Car Park only)	1	26-Apr-23	26-Apr-23	77	29-Jul-23	29-Jul-23	6d/w x10		l Delivery o	f MiC Unit to Site - P	atch 5 (for Car Park	only)	
	WSD-W-PY-13	Fabrication of MIC for Elevated Wal	kway No.2 Incl. ABWF, fit-out, drainage system & conceal ducts	75	01-May-23	14-Jul-23	542	24-Oct-24	06-Jan-25	7d/w x10		Fal	prication of MIC for E	levated Walkway No	o 2 Incl. ABWF, fit-ou	ut, drainage
WSD-W-PY-14 Delivery of MiC Unit to Site - Batch 6 (MiC Bridge) 60 15-Jul-23 12-Sep-23 542 07-Jan-25 7d/w x10	WSD-W-PY-14	Delivery of MiC Unit to Site - Batch	6 (MiC Bridge)	60	15-Jul-23	12-Sep-23	542	07-Jan-25	07-Mar-25	7d/w x10			Delivery of MiC Ur	it to Site - Batch 6 (	MiC Bridge)	
Construction of Administration Building 1072 17-Nov-21 23-Oct-24 554 15-Mar-22 30-Apr-26	Construction of	Administration Building		1072	17-Nov-21	23-Oct-24	554	15-Mar-22	30-Apr-26							
♦ ♦ Milestone Non-Critical Task	Milestone	Non-Critical	Task											Date		Re
Near Critical Task       Finished Task       O3-Nov-21       Revision 0 First Is					FIRS	T PRC	)Gl	RAM	ME R	EV. 3						
Critical Task Tasks Summary ALL ACTIVITIES 19-Jan-22 Revision 1 First Is 19-Jan-22 Revision 2 F	Critical Tas	sk Tasks Summ	ary				٨٢	<b>`TI\/I</b>	TIEC				俊和			
Time RiskAl.     P6 Hammock       08-Feb-22     Revision 2 First Is	Time Risk	A. P6 Hammool	k l			ALL			IILJ					U8-Feb-22	Kevision 2 Firs	SI ISSUE

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tent Training Venue (DDA) NRoom, Server Rooms (A(P)			· · · · · · · · · · · · · · · · · · ·
y Control Room, Server Rooms (DI	ÞA)		
Vehicle Charging Facilities (AIP)			
Electric Vehicle Charging Facilities	(DDA)		
ard incl. Irrigation System (AIP)			
1 Courtyard incl. Irrigation System (	DŲA)	1         1         1         1         1         1         1           1         1         1         1         1         1         1         1           1         1         1         1         1         1         1         1           1         1         1         1         1         1         1         1           1         1         1         1         1         1         1         1	
vay Np.2 (AIP)			
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d Walkway No.2 (AIP) of Elevated Walkway No.2 (DDA)		· · · · · · · · · · · · · · · · · · ·	
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cture Design of Elevated Walkway			
Vorks Structure Design of Elevated	) Walkway No.1 (DDA)		
ty Control Room/ Server Rooms			
No,1			
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Park (41nos, PR= 24no/wk)			
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ind. ABWF, fit-out, drainage syste	m & conceal ducts		
3 Bridge)			
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In-situ Reprovisioning of Sha Tin WTW (South Works) - Admin, Bldg

## Contract No. 6/WSD/21 In-situ Reprovisioning of Sha Tin Water Treatment Works (South Works) Administration Building

(South Works) - Admin. Bldg.					Date prepared : 11-Feb-22 a
Activity Name	Dur. Start	Finish	Total Late Start	Late Finish Working Calendars	2022 2023 2024 2025 2026 2027
undation	556 17 Nov 2	1 26 May 23	1070 15-Mar-22	30 Apr 26	<u>NDJFMAMJJJASONDJFMAMJJASONDJFMAMJJJASONDJFMAMJJASONDJFMAMJJJASONDJFMAMJJJASONDJFMAMJJJAS</u>
eparation Works		,	48 15-Mar-22	· ·	
/SD-W-F01 Fdn Surveying, Trial Pit, UU Detection, Installation of Monitoring Strumentation, Site Haul Road	80 21-Jan-2			23-Jun-22 6d/w x10	Fdn Surveying, Tinal Pit, UU Detection, Installation of Monitoring Strumentation, Site Haul Road
/SD-W-F02 Fdn G.I. & Instrumentation			24 31-Mar-22	14-Apr-22 6d/w x10	10 (Fdn.) - G.I; & Instrumentation
/SD-W-F03 Fdh Conduct Laboratory Test & Issue Preliminary Report				16-May-22 7d/w x10	🛱 Fdh Conduct Laboratory Test & Issue Preliminary Report
					📮 Fdn Design Review
SD-W-F04 Fdn Design Review	· ·			06-Jun-22 7d/w x10	
ase 1 (Grid J-Q/1-7)			84 07-Jun-22		◆ Temporary Retaining Structure (Grid J-Q/1-7), 120m long, to be constructed by Contract 1/WSD/19
3D-W-F-101 Temporary Retaining Structure (Grid J-Q/1-7), 120m long, to be constructed by Contract 1/WSD/19	0 17-Nov-2		202 07-Jun-22		Install Strutland Excavation at Portion 1 from 23.3mPD to 21.5mPD (2400m <sup>3</sup> , PR=100m <sup>3</sup> /d)
iD-W-F-102 Install Strut and Excavation at Portion 1 from 23.3mPD to 21.5mPD (2400m <sup>3</sup> , PR=100m <sup>3</sup> /d)				22-Jul-22 6d/w x10	
D-W-F-103 Carry Out Plate Load Test at Portion 1	14 23-Jul-22	2 05-Aug-22	86 17-Oct-22	30-Oct-22 7d/w x10	Carry Out Plate Load Test at Portion 1
D-W-F-104 Footing - 1m thk Footing @ +21.5mPD incl. blinding layer (7 batches @ 6d/batch)	42 06-Aug-2	2 24-Sep-22	70 31-Oct-22	17-Dec-22 6d/w x10	Footing - 1m thk;Footing:@ +21.5mPD incl; blinding layer (7 batches @ 6d/batch)
D-W-F-105 Time Risk Allowance for Phase 1 Foundation	6 25-Sep-2	2 30-Sep-22	84 18-Dec-22	23-Dec-22 7d/w x10	I Time Risk Allowance for Phase 1 Foundation
se 2 (Grid A'-J/1-9)	556 17-Nov-2	1 26-May-23	1070 07-Jun-22		
D-W-F-201 Temporary Retaining Structure (Grid A'-C/1), 48m long, to be constructed by Contract 1/WSD/19	0 17-Nov-2	1	1626 30-Apr-26	7d/w x10	Temporary Retaining Structure (Grid A'-C/1), 48m long, to be constructed by Contract 1/WSD/19
D-W-F-201.5 Temporary Retaining Structure (Grid F-J/7-9), 30m long, to be constructed by Contract 1/WSD/19	0 17-Nov-2	1	1626 30-Apr-26	7d/w x10	Temporary Retaining Structure (Grid F-J/7-9), 30m long, to be constructed by Contract 1/WSD/19
D-W-F-202 B.Footing - Sheet Piling (GL C-J/ 1), 50m on plan/ 12m deep, PR = 12sheet/d	12 07-Jun-2	2 20-Jun-22	0 07-Jun-22	20-Jun-22 6d/w x10	■ B.Footing - Sheet Piling (GL C-J/1), 50m on plan/ 12m deep, PR =12sheet/d
D-W-F-202.5 B.Footing - Sheet Piling (GL A1-F/9), 60m on plan/ 16m deep, PR =10sheet/d				23-Jun-22 6d/w x10	■ B.Footing - Sheet Piling (GL A1-F/9), 60m on plan/ 16m deep; PR ≠10sheet/d
D-W-F-203 Forming of Slope and Carry Out Excavation to + 20 mPD (11500m <sup>3</sup> , PR=100m <sup>3</sup> /d)				07-Dec-22 6d/w x10	Forming of Slope and Carty Dut Excavation to + 20 mPD (11500m³; PR=100m³/d)
					Construct Partial Raft (10 batches @ 6d/batch)
D-W-F-204 Construct Partial Raft (10 batches @ 6d/batch)				22-Feb-23 6d/w x10	
D-W-F-205 Install Raking Struts for Further Excavation	5 23-Feb-2	3 28-Feb-23	0 23-Feb-23	28-Feb-23 6d/w x10	Install Raking Struts for Further Excavation
D-W-F-206 Excavate Slope in front of Sheetpile to +20 mPD (500m <sup>3</sup> , PR=100m <sup>3</sup> /d)	5 01-Mar-2	3 06-Mar-23	0 01-Mar-23	06-Mar-23 6d/w x10	Excavate Slope in front of Sheetpile to +20 mPD (500m <sup>3</sup> , PR=100m <sup>3</sup> /d)
D-W-F-207 Construct Remaining Raft (10 batches @ 6d/batch)	60 07-Mar-2	3 19-May-23	0 07-Mar-23	19-May-23 6d/w x10	Construct Remaining Raft (10 batches;@ 6d/batch)
D-W-F-208 Time Risk Allowance for Phase 2 Foundation	7 20-May-2	23 26-May-23	0 20-May-23	26-May-23 7d/w x10	II: Time Risk Allowance for Phase 2 Foundation
cture	478 03-Oct-22	2 23-Jan-24	828 24-Dec-22	30-Apr-26	
se 1 (Grid J-Q/1-7)	241 03-Oct-22	2 31-May-23	104 24-Dec-22	12-Sep-23	
derground	12 03-Oct-22			10-Jan-23 6d/w x10	U/G R.C Beam/ Column Cohstruction
SD-W-UG1( U/G R.C Beam / Column Construction	12 03-Oct-22	2 17-Oct-22	70 24-Dec-22	10-Jan-23 6d/w x10	■ U/GIR.C Beam/ Column Construction
sement Level	61 03-Oct-22		89 11-Jan-23		B/F R.C Suspended Slab
D-W-SB101 B/F R.C Suspended Slab	12 18-Oct-2	2 31-Oct-22	70 11-Jan-23	27-Jan-23 6d/w x10	
D-W-SB102 B/F R.C Formwork and Rebar to RC Column	12 01-Nov-2	2 14-Nov-22	70 28-Jan-23	10-Feb-23 6d/w x10	□ B/F R.C. + Formwork and Rebar to RC Column
3D-W-SB103 B/F R.C Formwork and Rebar RC Wall	12 01-Nov-2	2 14-Nov-22	70 28-Jan-23	10-Feb-23 6d/w x10	□ B/F R.C. + Formwork and Rebar RC:Wall
D-W-SB104 B/F R.C Formwork and Rebar RC Concrete Beam/Slab (Ground Slab) incl. Erect Scaffold	12 12-Nov-2	2 25-Nov-22	70 09-Feb-23	22-Feb-23 6d/w x10	B/F;R;C:- Formwork and Rebar RC Concrete;Beam/Slab (Ground Slab) incl. Erect Scaffold
D-W-SB105 B/F R.C Concreting	1 26-Nov-2	2 26-Nov-22	70 23-Feb-23	23-Feb-23 6d/w x10	I: B/F;RC:- Concreting
D-W-SB106 B/F R.C Haul Road Preparation for Mobilization Mobile Crane	10 03-Oct-22	2 14-Oct-22	107 13-Feb-23	23-Feb-23 6d/w x10	D B/F R.C Haul Road Preparation for Mobilization Mobile Crane
D-W-SB107 B/F MiC - Installation of MiC Module (16 units) by Mobile Crane @ Basement level < <pr=6no d="">&gt;</pr=6no>	3 28-Nov-2	2 30-Nov-22	70 24-Feb-23	27-Feb-23 6d/w x10	B/F, MiC; - Installation of ;MiC Module (16 units) by Mobile Crane @ Basement level < <pr=6np d="">&gt;</pr=6np>
D-W-SB108 Time Risk Allowance for Structural Works @ Basement Level Phase 1	2 01-Dec-2			01-Mar-23 7d/w x10	I Time Risk Allowance for Structural Works @ Basement Level Phase 1
und Floor Level 5D-W-SG101 G/F R.C Formwork and Rebar to RC Column	36 03-Dec-2 12 03-Dec-2		85 02-Mar-23 70 02-Mar-23	02-Apr-23 15-Mar-23 6d/w x10	G/F IR.C. – Formwork and Rebar to RC Column
D-W-SG102 G/F R.C Formwork and Rebar to RC Wall	12 03-Dec-2			15-Mar-23 6d/w x10	G/F R.C Formwork and Rebar to RC Wall
					G/F R.C Formwork and Retar: to:RC Concrete Stab (First Floor Stab) Incl. Erect Scattfold
SD-W-SG103 G/F R.C Formwork and Rebar to RC Concrete Slab (First Floor Slab) incl. Erect Scaffold	12 15-Dec-2			27-Mar-23 6d/w x10	
SD-W-SG104 G/F R.C Concreting	1 31-Dec-2	2 31-Dec-22	70 28-Mar-23	28-Mar-23 6d/w x10	G/F R.CConcreting
SD-W-SG105 G/F MiC - Installation of MiC Module (18 units) by Mobile Crane @ Ground Floor level < <pr=6no d="">&gt;</pr=6no>	3 03-Jan-2	3 05-Jan-23	70 29-Mar-23	31-Mar-23 6d/w x10	G/F MiC - Installation of MiC Module (18 units) by Mobile Crane @ Ground Floor level < <pr=6no d=""></pr=6no>
SD-W-SG106 Time Risk Allowance for Structural Works @ Ground Level Phase 1	2 06-Jan-2	3 07-Jan-23	85 01-Apr-23	02-Apr-23 7d/w x10	Time Risk Allowarice for Structural Works @ Ground Level Phase 1
st Floor Level			86 03-Apr-23		
SD-W-S1101 1/F R.C Formwork and Rebar to RC Column	12 09-Jan-2	3 21-Jan-23	69 03-Apr-23	19-Apr-23 6d/w x10	I/F R.C Formwork and Rebar to RC Column
SD-W-S1102 1/F R.C Formwork and Rebar to RC Wall	12 09-Jan-2	3 21-Jan-23	69 03-Apr-23	19-Apr-23 6d/w x10	11/F R.C Formwork and Rebar to RC Wall
D-W-S1103 1/F R.C Formwork and Rebar to RC Concrete Slab (Secound Floor Slab) incl. Erect Scaffold	12 20-Jan-2	3 06-Feb-23	69 18-Apr-23	02-May-23 6d/w x10	1/F R.C Formwork and Rebar to RC Concrete Slab (Secound Floor Slab) incl. Erect Scaffold
SD-W-S1104 1/F R.C Concreting	1 07-Feb-2	3 07-Feb-23	69 03-May-23	03-May-23 6d/w x10	I 11/F R.C Concreting
SD-W-S1105 1/F MiC - Installation of MiC Module (24 units) by Mobile Crane @ First Floor level < <pr=6no d=""></pr=6no>	4 08-Feb-2	3 11-Feb-23	69 04-May-23	08-May-23 6d/w x10	I 1/F MiC - Installation of MiC Module (24 units) by Mobile Crane @ First Floor level < <pr=6no d=""></pr=6no>

Milestone
 Near Critical Task
 Critical Task
 Time Risk Al.

Finished Task Tasks Summary P6 Hammock

## FIRST PROGRAMME REV. 1 ALL ACTIVITIES



Revision 0 First Issue

Revision 1 First Issue

Revision 2 First Issue

03-Nov-21

19-Jan-22

08-Feb-22

#### Page 4 of 10 Date prepared : 11-Feb-22 at 13:13

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Milestone

Near Critical Task

Critical Task

Time Risk Al.

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WSD-W-SB306 B/F MiC - Installation of MiC Module (8 units) by Mobile Crane @ Basement Floor level <<PR=6no/d>>

WSD-W-SB307 Time Risk Allowance for Structural Works @ Basement Level Phase 3

Non-Critical Task

Finished Task

P6 Hammock

Tasks Summary

P6. ID

### Contract No. 6/WSD/21 In-situ Reprovisioning of Sha Tin Water Treatment Works (South Works) Administration Be

WTW (South Works) - Admin. Bldg.

IW (South Works) - Admin. Bldg.	Dur.	Start	Finish	Total	Late Start	Late Finish	Working		
				Float			Calendars	2022 2023 FMAMJJASONDJFMAMJJASONDJF	
WSD-W-S1106 Time Risk Allowance for Structural Works @ First Floor Level Phase 1	2	12-Feb-23	13-Feb-23	86	09-May-23	10-May-23	7d/w x10	I Time Risk Allowance for Struc	tural Works @ First Floor Level
Second Floor Level	31	14-Feb-23	16-Mar-23	88	11-May-23	12-Jun-23			
WSD-W-S2101 2/F R.C Formwork and Rebar to RC Column	12	14-Feb-23	27-Feb-23	70	11-May-23	24-May-23	6d/w x10	2/F.R.C Formwork and Ret	
WSD-W-S2102 2/F R.C Formwork and Rebar to RC Wall	12	14-Feb-23	27-Feb-23	70	11-May-23	24-May-23	6d/w x10	D 2/FR.C Formwork and Ret	par to RC Wall
WSD-W-S2103 2/F R.C Formwork and Rebar to RC Concrete Slab (Third Floor Slab) incl. Erect Scaffold	12	25-Feb-23	10-Mar-23	70	23-May-23	06-Jun-23	6d/w x10	2/F R.C Formwork and Re	bar to RC Concrete Slab (Third
WSD-W-S2104 2/F R.C Concreting	1	11-Mar-23	11-Mar-23	70	07-Jun-23	07-Jun-23	6d/w x10	I 2/F R.C Concreting	
WSD-W-S2105 2/F MiC - Installation of MiC Module (16 units) by Mobile Crane @ Second Floor level < <pr=6no d="">&gt;&gt;</pr=6no>	3	13-Mar-23	15-Mar-23	70	08-Jun-23	10-Jun-23	6d/w x10	I 2/F MiC - Installation of MiC	C Module (16 units) by Mobile Cr
WSD-W-S2106 Time Risk Allowance for Structural Works @ Second Floor Level Phase 1	1	16-Mar-23	16-Mar-23	88	12-Jun-23	12-Jun-23	7d/w x10	 I Tîme Risk Allowance for Str	ructural Works @ Second Floor I
Third Floor Level	76	17-Mar-23	31-May-23	104	13-Jun-23	12-Sep-23			
WSD-W-S3101 3/F R.C Formwork and Rebar to RC Column	12	17-Mar-23	30-Mar-23	70	13-Jun-23	27-Jun-23	6d/w x10	D 3/FR:C Formwork and F	Rebar to RC Column
WSD-W-S3102 3/F R.C Formwork and Rebar to RC Wall	12	17-Mar-23	30-Mar-23	70	13-Jun-23	27-Jun-23	6d/w x10	 II 3/F R.C Formwork and F	Rebar to RC Wall
WSD-W-S3103 3/F R.C Formwork and Rebar to RC Concrete Slab (Third Floor Slab) incl. Erect Scaffold	12	29-Mar-23	14-Apr-23	70	26-Jun-23	10-Jul-23	6d/w x10	 □ 3/F R.C Formwork and	Rebar to RC Concrete Slab (Th
WSD-W-S3104 3/F R.C Concreting	1	15-Apr-23	15-Apr-23	70	11-Jul-23	11-Jul-23	6d/w x10	I 3/F R.C Concreting	
WSD-W-S3105 3/F R.C Roof Construction	24	17-Apr-23	15-May-23	70	12-Jul-23	08-Aug-23	6d/w x10	 📮 3/F R.C Root Constr	ruction
WSD-W-S3106 Time Risk Allowance for Structural Works @ Third Floor Level Phase 1	4	16-May-23	19-May-23	85	09-Aug-23	12-Aug-23	7d/w x10	 D Time Risk Allowance f	for Structural Works @ Third Flo
WSD-W-S3107 Erect Material Hoist	12	20-May-23	31-May-23		01-Sep-23	12-Sep-23		 Erect Material Hpist	
Phase 2 (Grid C-J/1-4)	125		28-Sep-23			•			
Underground	24	27-May-23		_	27-May-23		6d/w x10		
WSD-W-UG2C U/G R.C Beam / Column Construction	24	27-May-23	24-Jun-23	0	27-May-23	24-Jun-23	6d/w x10	U/G R:C - Beam /	Column Construction
Basement Level	15	26-Jun-23	10-Jul-23	1025	26-Jun-23	30-Apr-26		<b>.</b>	
WSD-W-SB201 B/F R.C Suspended Slab	12	26-Jun-23	10-Jul-23	846	17-Apr-26	30-Apr-26	6d/w x10	B/F R.C Swsper	
WSD-W-SB203 B/F MiC - Installation of MiC Module (34 units) by Mobile Crane @ Basement level < <pr=6no d=""></pr=6no>	6	26-Jun-23	03-Jul-23	0	26-Jun-23	03-Jul-23	6d/w x10	B/F MiC - Installati	tion of MiC Module (34 units) by
WSD-W-SB204 Time Risk Allowance for MiC Installation @Basement Level	2	04-Jul-23	05-Jul-23	0	04-Jul-23	05-Jul-23	7d/w x10	I Time Risk Allowar	nce for MiC Installation @Basem
Ground Floor Level	9	06-Jul-23	14-Jul-23	_	06-Jul-23	14-Jul-23			
WSD-W-SG05 G/F MiC - Installation of MiC Module (40 units) by Mobile Crane @ Ground level < <pr=6no d="">&gt;</pr=6no>	7	06-Jul-23	13-Jul-23		06-Jul-23	13-Jul-23		 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ation of MiC Module (40 units) by
WSD-W-SG06 Time Risk Allowance for MiC Installation @ Ground Level	1	14-Jul-23	14-Jul-23	0	14-Jul-23	14-Jul-23	7d/w x10	I i lime Risk Allowa	ance for MiC Installation @ Grou
	11	15-Jul-23	25-Jul-23		15-Jul-23	25-Jul-23	0.11		ation of MiC Module (46 units) b
WSD-W-S1201 1/F MiC - Installation of MiC Module (46 units) by Mobile Crane @ First Floor level < <pr=6no d=""></pr=6no>	8	15-Jul-23	24-Jul-23	0	15-Jul-23	24-Jul-23			
WSD-W-S1202 Time Risk Allowance for MiC Installation @ First Floor Level	1	25-Jul-23	25-Jul-23		25-Jul-23	25-Jul-23	7d/w x10		ance for MiC Installation @ First
Second Floor Level WSD-W-S2201 2/F MiC - Installation of MiC Module (18 units) by Mobile Crane @ Second Floor level < <pr=6no d="">&gt;</pr=6no>	4	26-Jul-23 26-Jul-23	29-Jul-23 28-Jul-23	0	26-Jul-23 26-Jul-23	29-Jul-23 28-Jul-23	6d/w x10	 2/F MtC - Install	lation of MiC Module (18 units) b
WSD-W-S2201 Zin with instantation of MiC Installation @ Second Floor Level	1	29-Jul-23	29-Jul-23		29-Jul-23	29-Jul-23			vance for MiC Installation @ Sec
	· ·	29-Jui-23			29-30-23				bilization of Mobile Crane
WSD-W-S2203 2/F MiC - Demobilization of Mobile Crane	0	04 1 1 00	29-Jul-23	0	04 1 1 00	29-Jul-23	60/W X10		
Third Floor Level WSD-W-S3201 3/F R.C Formwork and Rebar to RC Column	60 12	31-Jul-23 31-Jul-23	28-Sep-23 12-Aug-23		31-Jul-23 31-Jul-23	18-Jun-24 12-Aug-23	6d/w x10	 	nwork and Rebar to RC Column
WSD-W-S3202 3/F R.C Formwork and Rebar to RC Wall	12		12-Aug-23		31-Jul-23	12-Aug-23		 ■ 3/F R.C Fom	nwork and Rebar to RC Wall
WSD-W-S3203 3/F R.C Formwork and Rebar to RC Concrete Slab (Third Floor Slab) incl. Erect Scaffold	12	11-Aug-23			11-Aug-23	24-Aug-23			rmwork and Rebar to RC Concre
WSD-W-S3204 3/F R.C Concreting	1	-	25-Aug-23		25-Aug-23	25-Aug-23		 I 3/FR.C C	
									tallation of MiC Module (14 units
WSD-W-S3205 3/F MiC - Installation of MiC Module (14 units) by Mobile Crane @ Second Floor level << PR=6no/d>	3	26-Aug-23	-		26-Aug-23	29-Aug-23			lowance for Structural Works @
WSD-W-S3206 Time Risk Allowance for Structural Works @ Third Floor Level Phase 2	2		31-Aug-23		30-Aug-23	-			Roof Construction
WSD-W-S3207 3/F R.C Roof Construction	24	01-Sep-23	-		21-May-24	18-Jun-24	6d/w x10	→ 3/F;K.u	
Phase 3 (Grid A'-C/1-4)	167	06-Jul-23	19-Dec-23		07-Jul-23	17-Sep-24			
Basement Floor Level WSD-W-SB301 B/F R.C Suspended Slab	45 12	06-Jul-23 06-Jul-23	19-Aug-23 19-Jul-23	1	07-Jul-23 07-Jul-23	20-Aug-23 20-Jul-23	6d/w x10	 ₩ B/F R.C Suspe	anded Slab
WSD-W-SB302 B/F R.C Formwork and Rebar to RC Column	12	20-Jul-23	02-Aug-23	1	21-Jul-23	03-Aug-23			nwork and Rebar to RC Column
WSD-W-SB303 B/F R.C Formwork and Rebar RC Wall	12	20-Jul-23	02-Aug-23		21-Jul-23	03-Aug-23		 · · · · · · · · · · · · · · · · · · ·	work and Rebar RC Wall
WSD-W-SB304 B/F R.C Formwork and Rebar RC Concrete Beam/Slab (Ground Slab) incl. Erect Scaffold	12	01-Aug-23	-		02-Aug-23	15-Aug-23		 · · · · · · · · · · · · · · · · · · ·	mwork and Rebar RC Concrete
WSD-W-SB304 B/F R.C Formwork and Rebail RC Condete Beam/Stab (Ground Stab) incl. Erect Scanold WSD-W-SB305 B/F R.C Concreting	12		-			16-Aug-23			
		15-Aug-23	15-Aug-23		16-Aug-23	10-Aug-23	JU/W XIU	 I B∤F R.C Cor	iciemil)





Revision 2 First Issue

**FIRST PROGRAMME REV. 1 ALL ACTIVITIES** 

2 16-Aug-23 17-Aug-23 1 17-Aug-23 18-Aug-23 6d/w x10

2 18-Aug-23 19-Aug-23 1 19-Aug-23 20-Aug-23 7d/w x10

/	orks) Administra	ation B	uilding	Date	e prepareo	d : 1		-	e 5 o at 1			_
	2024		2025	2026			2027				202	8
	SONDJFMAMJJA vance for Structural Works @ F			MAMJJ	ASOND	JFM	AMJJ	AS		ND	JI	-
ŕ	nwork and Rebar to RC Colum	in l										
ŕ	nwork and Rebar to RC Wall											
Ì	miwork and Rebait to RC Conc	rete Slab (Tr	nird Floor Slab) incl. Erect Scaffold									
i	ncreting											- 4
i		its) by Mobile	e Crane @ Second Floor level < <pr:< td=""><td>=6no/d&gt;&gt;</td><td></td><td></td><td>L</td><td></td><td></td><td></td><td></td><td></td></pr:<>	=6no/d>>			L					
i	lowance for Structural Works @			-0110/077								
-										-		
	ormwork and Rebar to RC Col	umn										-
	ormwork and Rebar to RC Wa	¢ i i										• •
	Formwork and Rebar to RC C	oncrete Slab	(Third Floor Stab) incl. Erect Scaffol	d								
	Concreting											
5	- Roof Construction											
Ś	isk Allowance for Structural W	orks @ Third	Floor Level Phase 1					h	+-+-			
1	Material Hoist											
	<b>T</b>									-		-
	R.C Beam / Column Constru	liction										
	F.C Suspended Slab											
i		I.o. (3/t unite)	by Mobile Crane @ Basement level	<>DD-6mo/								
i	ne Risk Allowance for MiC Inst											
									+ +			
ļ	F MiC - Installation of MiC Mod	ule (40 units	;) by Mobile Crane @ Ground level <	<pr=6no d=""></pr=6no>	>							
r	ne Risk Allowance for MiC Ins	tallation @ G	round Level									
-			1         1							-		_
ļ	/F MiC - Installation of MiC Mo	dule (46 unit	s) by Mobile Crane @ First Floor leve	el < <pr=6n< td=""><td>o/d&gt;&gt;</td><td></td><td></td><td></td><td></td><td></td><td></td><td>• •</td></pr=6n<>	o/d>>							• •
	ime Risk Allowance for MiC In	stallation @ I	First Floor Level									• •
												_
1			s) by Mobile Crane @ Second Floor	level < <pr< td=""><td>=6no/d&gt;&gt;</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></pr<>	=6no/d>>							
1	ime Risk Allowance for MiC In		Second Floor Level									
2	/F MiC - Demobilization of Mo	bile Crane										
	3/F R.C Formwork and Reba	r to BC Colu	mn									
i	3/F R.C Formwork and Reba											
-			nçrete Slab (Third Floor Slab) incl. Ei	roct Scoffold								
	3/F R.C Concreting								+-+			
1		Modulo (14	inits) by Mobile Crane @ Second Flo	or loval tr								
i	Time Risk Allowance for Str.											
i									÷-+			
	3/F R.C Roof Constructi		1     1     1     1     1     1     1     1     1     1     1     1     1       2 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>									
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l	FR.C Suspended Slab											
Ē	B/F R.C Formwork and Reba	r to RC Colu	mn									
Ē	B/F R.C Formwork and Reba	r RC Wall					• • • • • • • • • • • •					
ļ			ete Beam/Slab (Ground Slab) incl. Ei	rect Scaffold								
1	B/F R.C Concreting											
Ļ		/lodule (8 umi	ts) by Mobile Crane @ Basement Flo	oorlevel <<	PR=6no/d>>							
	Time Risk Allowance for Struc	4-4-4-4-4		· · · · · · · · · · · · · · · · · · ·								
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		Date lov-21	Revisio Revision 0 First Issue	n		(  A⊢	Checked	_	App NJ	orov	ed	_
		an-22	Revision 1 First Issue			PF		_	AH			-
	1747 711					_				_	_	

In-situ Reprovisioning	of Sha <sup>-</sup>	Гin
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### Contract No. 6/WSD/21 In-situ Reprovisioning of Sha Tin Water Treatment Works (South Works) Administration Bu

Late Finish

Total Late Start

Float

Finish

Dur.

Working Calendars

WTW (South Works) - Admin. Bldg P6. ID Activity Name

_			ļ	L	L	L		ļ	INL	1 1 FIMAIM 1 1 A PIOND	1 1 FIMIAIMI 2I 2I AI 2I OI MIDI 2	I FIMIAIMI JI JI AI SI OI NI DI JI F
	Ground Floor Level WSD-W-SG301 G/F R.C Formwork and Rebar to RC Column		21-Aug-23 21-Aug-23	17-Sep-23 02-Sep-23	0	21-Aug-23 21-Aug-23	17-Sep-23 02-Sep-23	6d/w x10	<b>.</b>		G/FR.C	Formwork and Rebar to RC Colu
┞	WSD-W-SG302 G/F R.C Formwork and Rebar to RC Wall	12	21-Aug-23	02-Sep-23		21-Aug-23	02-Sep-23					Formwork and Rebar to RC Wall
												- Formwork and Rebar to RC Con
	WSD-W-SG303 G/F R.C Formwork and Rebar to RC Concrete Slab (First Floor Slab) incl. Erect Scaffold	12	01-Sep-23	14-Sep-23		01-Sep-23	14-Sep-23					- Concreting
	WSD-W-SG304 G/F R.C Concreting		15-Sep-23	15-Sep-23	0	15-Sep-23	15-Sep-23		<b>.</b>			Installation of MiC Module (3 uni
	WSD-W-SG305 G/F MiC - Installation of MiC Module (3 units) by Mobile Crane @ Ground Floor level < <pr=6no d=""></pr=6no>	1	16-Sep-23	16-Sep-23	0	16-Sep-23	16-Sep-23					
	WSD-W-SG306 Time Risk Allowance for Structural Works @ Ground Level Phase 3	1	17-Sep-23	17-Sep-23	0	17-Sep-23	17-Sep-23	7d/w x10				k Allowance for Structural Works (
	First Floor Level WSD-W-S1301 1/F R.C Formwork and Rebar to RC Column	93 12	18-Sep-23 18-Sep-23	19-Dec-23 03-Oct-23	273 0	18-Sep-23 18-Sep-23	17-Sep-24 03-Oct-23	6d/w x10			<b>∀</b> 1/F R.C	- Formwork and Rebar to RC Co
┢	WSD-W-S1302 1/F R.C Formwork and Rebar to RC Wall	12	18-Sep-23	03-Oct-23	0	18-Sep-23	03-Oct-23					- Formwork and Rebar to RC W
				14-Oct-23			14-Oct-23					Formwork and Rebar to RC C
	WSD-W-S1303 1/F R.C Formwork and Rebar to RC Concrete Slab (Secound Floor Slab) incl. Erect Scaffold	12	29-Sep-23		0	29-Sep-23						C Concreting
	WSD-W-S1304 1/F R.C Concreting	1	16-Oct-23	16-Oct-23		16-Oct-23	16-Oct-23					C - Installation of MiC Module(3 u
	WSD-W-S1305 1/F MiC - Installation of MiC Module (3 units) by Mobile Crane @ First Floor level < <pr=6no d="">&gt;</pr=6no>	1	17-Oct-23	17-Oct-23	0	17-Oct-23	17-Oct-23		<b>.</b>			
	WSD-W-S1306 Time Risk Allowance for Structural Works @ First Floor Level Phase 3	1	18-Oct-23	18-Oct-23	0	18-Oct-23	18-Oct-23					Risk Allowance for Structural Work
	WSD-W-S1307 1/F R.C RC Roof Construction (Lower Roof, GL A'-E/1-4)	2	19-Oct-23	20-Oct-23	37	02-Dec-23	04-Dec-23					C. + RC Roof Construction (Lower
	WSD-W-S1308 1/F R.C Architectural Facade/ Concrete Plinth/ Drainage System/ Balustrade on Roof Terrace @ Secon	50	21-Oct-23	19-Dec-23	220	22-Jul-24	17-Sep-24	6d/w x10				/FR.C. Architectural Facade/ Co
_	Phase 4 (Car Park and Ramp)	138	31-Jul-23	15-Dec-23		31-Jul-23	03-Jun-24	0.11 40	<b>.</b>			p - Installation of MiC Module (5 u
	WSD-W-CP01 Carpark/Ramp - Installation of MiC Module (5 units) by Mobile Crane @ Car Park < <pr=6no d=""></pr=6no>	1	31-Jul-23	31-Jul-23		31-Jul-23	31-Jul-23					
	WSD-W-CP02 Carpark/Ramp - RC Column 5.7m x 19nos @ Basement Level (GL A'-J/ 5-7)< <pr= 7="" 7d="" column,="" mould="">&gt;</pr=>	21	01-Aug-23	24-Aug-23		01-Aug-23	24-Aug-23					mp - RC Column 5 7m x 19nøs @
	WSD-W-CP03 Carpark/Ramp - RC Concrete Slab (Ground Slab) incl. Erect Scaffold	20	25-Aug-23	16-Sep-23	0	25-Aug-23	16-Sep-23	6d/w x10				Ramp - RC Concrete Slab (Ground
	WSD-W-CP04 Carpark/Ramp - RC Column fr 4.7m to 9.4m x 9nos @ Ground Level (GL A'-J/ 5-7)< <pr= 14d="" 5<="" column,="" td=""><td>28</td><td>18-Sep-23</td><td>21-Oct-23</td><td>0</td><td>18-Sep-23</td><td>21-Oct-23</td><td>6d/w x10</td><td></td><td></td><td></td><td>rk/Ramp - RC Column fr 4.7m to 9</td></pr=>	28	18-Sep-23	21-Oct-23	0	18-Sep-23	21-Oct-23	6d/w x10				rk/Ramp - RC Column fr 4.7m to 9
	WSD-W-CP05 Carpark/Ramp - Concrete Structure for Ramp between G/F & 1/F including landing	18	24-Oct-23	13-Nov-23	0	24-Oct-23	13-Nov-23	6d/w x10				ark/Ramp - Concrete Structure fo
	WSD-W-CP06 Carpark/Ramp - Concrete Structure for Ramp between 1/F & 2/F including	22	14-Nov-23	08-Dec-23	0	14-Nov-23	08-Dec-23	6d/w x10				arpark/Ramp - Concrete Structure
	WSD-W-CP07 Carpark/Ramp - Construction of Roadworks for Emergency Vehicle Access heading to Administration Buile	45	18-Sep-23	11-Nov-23	163	10-Apr-24	03-Jun-24	6d/w x10			Carp	ark/Ramp - Construction of Road
	WSD-W-CP08 Carpark/Ramp - Completion of Structure for Car Park	0		11-Nov-23	163		03-Jun-24	6d/w x10			◆ Carp	ark/Ramp - Completion of Structu
	WSD-W-CP09 Time Risk Allowance for Activities WSD-D-CP01 to WSD-D-CP-06	7	09-Dec-23	15-Dec-23	0	09-Dec-23	15-Dec-23	7d/w x10			D T	ime Risk Allowance for Activities V
	Glazing/ Curtain Wall	118	01-Sep-23	23-Jan-24	0	27-Sep-23	23-Jan-24	6d/w x10			V	
	WSD-W-GL01 Glazing/Curtain Wall - Bracket Installation for Building < <pr=4d storey="">&gt;</pr=4d>	24	01-Sep-23	28-Sep-23	22	27-Sep-23	27-Oct-23	6d/w x10			Glazing/	Curtain Wall - Bracket Installation
	WSD-W-GL02 Glazing/Curtain Wall - Curtain Wall Panel Installation for Building < <pr=5d storey="">&gt;</pr=5d>	48	29-Sep-23	27-Nov-23	22	28-Oct-23	22-Dec-23	6d/w x10			Gla	izing/Curtain Wall - Curtain Wall P
	WSD-W-GL03 Glazing/Curtain Wall - Bracket Installation for Ramp < <pr=4d storey="">&gt;</pr=4d>	6	16-Dec-23	22-Dec-23	0	16-Dec-23	22-Dec-23	6d/w x10			0 0	alazing/Curtain Wall - Bracket Inst
F	WSD-W-GL04 Glazing/Curtain Wall - Curtain Wall Panel Installation for Ramp << PR=5d/storey>>	24	23-Dec-23	23-Jan-24	0	23-Dec-23	23-Jan-24	6d/w x10				Glazing/Curtain Wall - Curtain N
F	WSD-W-GL05 Glazing/Curtain Wall - Steel Frame Installation @ Ground Floor Entrance Lobby	6	24-Nov-23	30-Nov-23	37	10-Jan-24	16-Jan-24	6d/w x10			I Gla	azing/Curtain Wall - Steel Frame Ir
F	WSD-W-GL06 Glazing/Curtain Wall - Glazing Panel Installation	6	01-Dec-23	07-Dec-23	37	17-Jan-24	23-Jan-24	6d/w x10			D GI	azing/Curtain Wall - Glazing Pane
F	WSD-W-GL07 Glazing/Curtain Wall - Completion of Building Envelope	0		23-Jan-24	0		23-Jan-24	6d/w x10	<b>-</b>			Glazing/Curtain Wall - Completion
	ABWF/ MEP/ FS/ Fitout Works	421	31-Jul-23	23-Sep-24	110	14-Aug-23	11-Jan-25					
	Basement - Transformer Room/ LV Switch Room/ Utility Riser Room/ ServiceTunnel & Yard	246	01-Aug-23			14-Aug-23	04-Jul-24	6d/w x10			v	· · · · ·
	WSD-B-TR01 Tx & LVSB Rooms - MiC Connection Works/ Falsework Removal/ Preparation for ABWF & MEP Works	24	01-Aug-23	28-Aug-23	11	14-Aug-23	09-Sep-23	6d/w x10			📒 Tx & LV\$B	Rooms - MIC Connection Works/
	WSD-B-TR02 Tx & LVSB Rooms - ABWF Deg1 - Deg3	48	29-Aug-23	26-Oct-23	11	11-Sep-23	08-Nov-23	6d/w x10			Tx & I	V\$B Rooms - ABWF Deg1 - Deg
	WSD-B-TR03 Tx & LVSB Rooms - BS 1st Fix - 3rd Fix	72	27-Oct-23	22-Jan-24	11	09-Nov-23	03-Feb-24	6d/w x10				Tx & LVSB Rooms - BS 1st Fix
	WSD-B-TR05 Tx & LVSB Rooms - CLP Inspection & Defect Rectification	12	23-Jan-24	05-Feb-24	28	28-Feb-24	12-Mar-24	6d/w x10				Tx & LVSB Rooms - CLP Inspe
F	WSD-B-TR06 Tx & LVSB Rooms - Installation of Tx & Testing by CLP	90	06-Feb-24	30-May-24	28	13-Mar-24	04-Jul-24	6d/w x10	t t			Tx & LVSB Rooms -
F	WSD-B-TR06.5 Construction of Riser/Shaft/Tunnel for Cable Containment	46	23-Jan-24	19-Mar-24	79	03-May-24	27-Jun-24	6d/w x10	1		1	Construction of Riser/Shaft
F	WSD-B-TR07 Tx & LVSB Rooms - Completion of CLP Cable Laying Leading to Administration Building (to be constructe	0	25-May-24	25-May-24	28	27-Jun-24	27-Jun-24	6d/w x10				I Tx & LVSB Rooms - (
F	WSD-B-TR08 Tx & LVSB Rooms - CLP Power-on Date	0	-	30-May-24	28		04-Jul-24	6d/w x10				◆ Tx & LVSB Rooms -
L	Basement - Emergency Generator Room	132	23-Jan-24	-		05-Feb-24	24-Aug-24					
		10	22 Jan 24	00 5 1 04		055104	40 5 1 04	0.1/ 40	<b></b>			

10

23-Jan-24

11 03-Feb-24

EGM - MiC Connection Wor EGM - Concrete Plinth, Wa EGM - Floor Screeding,

Date

03-Nov-21

19-Jan-22

08-Feb-22

٠ Milestone Near Critical Task Critical Task Time Risk Al.

WSD-B-EG01

Non-Critical Task Finished Task Tasks Summary 🔻 P6 Hammock

WSD-B-EG03 EGM - Floor Screeding, Wall Plastering & Doors & Wall Lining

WSD-B-EG02 EGM - Concrete Plinth, Waterproofing & Test

EGM - MiC Connection Works/ Falsework Removal/ Preparation for ABWF & MEP Works

## **FIRST PROGRAMME REV. 1 ALL ACTIVITIES**

28 20-Feb-24 22-Mar-24 11 04-Mar-24 09-Apr-24 6d/w x10

02-Feb-24 11 05-Feb-24 19-Feb-24 6d/w x10

19-Feb-24 11 20-Feb-24 02-Mar-24 6d/w x10



2022 2023 2024 NDJJFMAMJJJASONDJFMAMJJJASONDJFMAMJJASOND

uilding	Data propa	Page 6 of 10
		ared : 11-Feb-22 at 13:13
2025 J F M A M J J A S O N D J F	2026 MAMJJASON	2027 2028 D J F M A M J J A S O N D J F
blumin		
all	<b>F</b>	
concrete Slab (First Floor Slab) incl.	Erect Scattold	
units) by Mobile Crane @ Ground F	loor level < <pr=6n0 d=""></pr=6n0>	
s @ Ground Level Phase 3		
Column		
Wall		
Concrete Slab (Secound Flopr Sla	b) incl. Erect Scaffold	
3 units) by Mobile Crane @ First Fi	oorlevel < <pr=6no d=""></pr=6no>	>
orks @ First Floor Level Phase 3		
ver Roof, GL A'-E/1-4)		
Concrete Plinth/ Drainage System/	Balustrade on Roof Ten	rrace @ Second Level
5:units) by Mobile Crane @ Car Par	k < <pr=6no d="">&gt;</pr=6no>	
@ Basement Level (GL A'+J/ 5-7)<	<pr∓ 7="" 7d="" column,="" mo<="" th=""><th>puld&gt;&gt;</th></pr∓>	puld>>
und Slab) incl. Erect Scaffold		
a 9,4m x 9nos @ Graund Level (G	L A'-J/ 5-7)< <pr= 14d="" <="" th=""><th>column, 5 mould&gt;&gt;</th></pr=>	column, 5 mould>>
for Ramp between G/F & 1/F inclu		
⊮e for:Ramp between 1/F & 2/F inc		
adworks for Emergency Vehicle Ac		stration Building
ctune for Car Park		
s WSD-D-CP01 to WSD-D-CP-06		1         1
		Image: state
on for Building < <pr=4d storey="">&gt;</pr=4d>		Image: state of the s
Il Panel Installation for Building < <p< th=""><th>'R≖5d/storey&gt;&gt;</th><th></th></p<>	'R≖5d/storey>>	
nstallation for Ramp < <pr=4d store<="" th=""><td>y&gt;&gt;</td><td></td></pr=4d>	y>>	
nWallPanel Installation for Ramp <	<pr=5d storey="">&gt;</pr=5d>	Image: state of the s
e Installation @ Ground Floor Entra	nce Lobby	
inel Installation		Image: state         Image: state<
etion of Building Envelope		
		Image: 1
ks/ Falsework Removal/ Preparation	n for ABWF & MEP Wor	ks
leg3		
ik - 3rd Fix		· · · · · · · · · · · · · · · · · · ·
spection & Defect Rectification		
s - Installation of Tx & Testing by C		
aft/Tunnel for Cable Containment		
	Leading to Administration	on Building (to be constructed by Other
s - CLP Power-on Date		
ks/ Falsework Removal/ Preparation	INT ADVVF & MEH WOR	<b>n</b> o
terproofing & Test		· · · · · · · · · · · · · · · · · · ·
Wall Plastering & Doors & Wall Lin	ng	

Revision	Checked	Approved
Revision 0 First Issue	AH	WJ
Revision 1 First Issue	PF	AH
Revision 2 First Issue		

	orks) - Admin. Bldg.	Contract	No. 6/WSD/21	I In-situ	l Repro	visi	oning o	of Sha	Tin Wa	ter -	Trea	tme	nt W	orks (	(So	uth W	orks	s) A	dmir	iistra	tion	Buil
P6. ID	Activity Name	•	Dur	: Start	Finish	Total Float	Late Start	Late Finish	Working Calendars			202	2			2023				2024		
WSD-B-EG04	EGM - MEP Works		28	23-Mar-24	29-Apr-24	42	18-May-24	20-Jun-24	6d/w x10	NDJ	FM	AMJ	JASO	NDJF	MA	MJJA	SON	DJF		1 J J A EGM - M		
	EGM - Move-In Generator Equipment	nts	6	30-Apr-24	· ·		21-Jun-24	27-Jun-24											0	EGM - N	love-In	Genera
	EGM - Final Coat to Wall & Sealer t		18	· ·	29-May-24		28-Jun-24		6d/w x10											EGM		
	EGM - Install Generator Equipments		28	,			20-Jul-24	21-Aug-24												1 1 1 1	M - Insta	
	EGM - Install Doors & Ironmoderv	s a resung	3	04-Jul-24	05-Jul-24		20-Jul-24 22-Aug-24	21-Aug-24			÷								÷		M - Inst	
	inkler/FS Water Tank		114				10-Apr-24	24-Aug-24 24-Aug-24														
	Sprinkler Tank/ FS Tank Room - Wa	aterproofing & Testing	12		-	-	10-Apr-24	23-Apr-24											S	prinkler T	ank/ FS	Tank F
	Sprinkler Tank/ FS Tank Room - Pla		12				24-Apr-24	08-May-24												Sprinkler		
	Sprinkler Tank/ FS Tank Room - Wa	<b>.</b>	24	· ·	· ·		•	06-Jun-24												Sprinkl		
	Sprinkler Tank/ FS Tank Room - Ins		60	· ·			07-Jun-24	17-Aug-24												<u></u>	Sprinkler	
	Sprinkler Tank/ FS Tank Room - Ins		6	06-Aug-24	-		19-Aug-24	24-Aug-24													Sprinkle	
Basement - Offi			92				11-Jan-24	06-May-24													Opiniae	
		nce/ Preparation for ABWF & MEP Works	6	27-Oct-23			11-Jan-24		6d/w x10									B/F Inte	erior Dec	oration -	Site Cle	arance
WSD-B-BA-02	B/F Interior Decoration - ABWF Wor	ks incl. block wall, plastering & paint, ceiling pan	el, raised floor, door 48	03-Nov-23	30-Dec-23	62	18-Jan-24	16-Mar-24	6d/w x10									<b>B</b> /	F Interio	r Decorat	ion - AB	WFW
		s incl. 1st fix. 2nd fix & final fix installation	48	20-Nov-23	17-Jan-24	62	03-Feb-24	06-Apr-24	6d/w x10										3/F Inter	ior Decor	ation - N	<b>NEP W</b>
WSD-B-BA-04	B/F Interior Decoration - Inspection/	Testing/ Defect Rectification	24	18-Jan-24			08-Apr-24	06-May-24										💼	B/F In	terior De	coration	- Inspe
	ngerous Goods Store Fitting O	<b>.</b>	121				07-Sep-24	05-Jan-25														
	0 0	Clearance/ Preparation for ABWF & MEP Works	6	27-Oct-23		-		13-Sep-24	6d/w x10		÷						•	Basem	ent Inter	ior Decor	ation - S	Site Cle
WSD-B-DG02	Basement Interior Decoration - ABW	/F Works incl. block wall, plastering & paint, ceilin	ng panel, raised floor, 48	03-Nov-23	30-Dec-23	257	14-Sep-24	12-Nov-24	6d/w x10									🗖 Ba	isement	Interior C	ecoratio	on - AB
WSD-B-DG03	Basement Interior Decoration - MEF	Works incl. 1st fix, 2nd fix & final fix installation	48	20-Nov-23	17-Jan-24	257	03-Oct-24	28-Nov-24	6d/w x10										Basemei	nt Interior	Decora	tion - N
WSD-B-DG04	Basement Interior Decoration - Insp	ection/ Testing/ Defect Rectification	24	18-Jan-24	17-Feb-24	257	29-Nov-24	28-Dec-24	6d/w x10									- 🛑	Baser	nent Inter	ior Deco	oration
	Time Risk Allowance for Activities fr	om WSD-B-L1-01 to WSD-B-L1-04	7	18-Feb-24	24-Feb-24	316	30-Dec-24	05-Jan-25	7d/w x10			- + + -							I Time	Risk Allo	wance f	or Activ
Ground Floor La	aboratory/Vistory Reception F	acility/ Water Treatment Training Venue	92	24-Oct-23			05-Jun-24	23-Sep-24														
		ance/ Preparation for ABWF & MEP Works	6	24-Oct-23		-	05-Jun-24		6d/w x10								Ŭ (	G/F Inte	erior De	coration -	Site Cle	arance
WSD-B-LG-02	G/F Interior Decoration - ABWF Wo	rks incl. block wall, plastering & paint, ceiling pan	el, raised floor, door 48	31-Oct-23	27-Dec-23	181	13-Jun-24	08-Aug-24	6d/w x10									<b>G</b> /	F Interio	r Decorat	ion - AB	WFW
WSD-B-LG-03	G/F Interior Decoration - MEP Work	s incl. 1st fix, 2nd fix & final fix installation	48	16-Nov-23	13-Jan-24	181	29-Jun-24	24-Aug-24	6d/w x10										/F Inter	or Decor	ation - N	/EP Wo
WSD-B-LG-04	G/F Interior Decoration - Inspection/	/ Testing/ Defect Rectification	24	15-Jan-24	14-Feb-24	181	26-Aug-24	23-Sep-24	6d/w x10									💼	G/F In	terior Dec	coration	- Inspe
First Floor Labo	ratory Fitting-Out		121	24-Nov-23															_			
WSD-B-L1-01	1/F Interior Decoration - Site Cleara	nce/ Preparation for ABWF & MEP Works	6	24-Nov-23	30-Nov-23	0	24-Nov-23	30-Nov-23	6d/w x10			- + + -						1/F I	nterior D	ecoration	i - Site C	learan
WSD-B-L1-02	1/F Interior Decoration - ABWF Wor	ks incl. block wall, plastering & paint, ceiling pane	el, raised floor, door 48	01-Dec-23	29-Jan-24	61	17-Feb-24	17-Apr-24	6d/w x10			- + + - + -							1/F Inte	rior Deco	ration -	ABWF
WSD-B-L1-03	1/F Interior Decoration - MEP Works	s incl. 1st fix, 2nd fix & final fix installation	48	18-Dec-23	17-Feb-24	61	05-Mar-24	04-May-24	6d/w x10									-	1/F In	terior Dec	oration	- MEP
WSD-B-L1-04	1/F Interior Decoration - Inspection/	Testing/ Defect Rectification	24	19-Feb-24	16-Mar-24	61	06-May-24	03-Jun-24	6d/w x10										🗖 1/F	Interior C	ecoratic	on - Ins
WSD1	Time Risk Allowance for Activities fr	om WSD-B-L1-01 to WSD-B-L1-04	7	17-Mar-24	23-Mar-24	79	04-Jun-24	10-Jun-24	7d/w x10										0 Tin	ne Risk A	llowano	e for Ad
Second Floor Of	ffice Fitting-Out		92	01-Dec-23	23-Mar-24	148	01-Dec-23	23-Sep-24	6d/w x10													
	•	nce/ Preparation for ABWF & MEP Works	6		07-Dec-23	0	01-Dec-23	07-Dec-23										2/F I	nterior I	Decoratio	n - Site I	Clearar
WSD-B-L2-02 2	2/F Interior Decoration - ABWF Wor	ks incl. block wall, plastering & paint, ceiling pane	el, raised floor, door 48	08-Dec-23	05-Feb-24	0	08-Dec-23	05-Feb-24	6d/w x10		·							-	2/F Inte	erior Deco	oration -	ABWF
WSD-B-L2-03 2	2/F Interior Decoration - MEP Works	s incl. 1st fix, 2nd fix & final fix installation	48	27-Dec-23	24-Feb-24	56	06-Mar-24	06-May-24	6d/w x10			- + + - + -							1 2/Flr	terior De	coration	- MEP
WSD-B-L2-04 2	2/F Interior Decoration - Inspection/	Testing/ Defect Rectification	24	26-Feb-24	23-Mar-24	148	26-Aug-24	23-Sep-24	6d/w x10										🗖 2/F	Interior	Decorati	on - Ins
Third Floor Offic	ce Fitting-Out		186	08-Dec-23	10-Jun-24	0	30-Jan-24	10-Jun-24												-		
WSD-B-L3-01 3	3/F Interior Decoration - Site Cleara	nce/ Preparation for ABWF & MEP Works	6	08-Dec-23	14-Dec-23	42	30-Jan-24	05-Feb-24	6d/w x10									0 3/F		Decoratic		
WSD-B-L3-02 3	3/F Interior Decoration - ABWF Wor	ks incl. block wall, plastering & paint, ceiling pane	el, raised floor, door 48	06-Feb-24	09-Apr-24	0	06-Feb-24	09-Apr-24	6d/w x10										3	/F Interior	Decora	tion - A
WSD-B-L3-03	3/F Interior Decoration - MEP Works	s incl. 1st fix, 2nd fix & final fix installation	48	26-Feb-24	25-Apr-24	0	26-Feb-24	25-Apr-24	6d/w x10										-	3/FInterio	or Decor	ation -
WSD-B-L3-04 3	3/F Interior Decoration - Inspection/	Testing/ Defect Rectification	33	26-Apr-24	05-Jun-24	0	26-Apr-24	05-Jun-24	6d/w x10										-	📕 3/Fln	terior De	ecoratio
WSD-B-L3-05	Time Risk Allowance for Third Floor	Office Fitting Out	5	06-Jun-24	10-Jun-24	0	06-Jun-24	10-Jun-24	7d/w x10											I Time	Risk All	owance
MEP Lift Installa	tion (E1)		173	24-Jan-24	14-Jul-24	181	25-Jul-24	11-Jan-25										-				
WSD-B-LT1-01	Lift E1 - Erect Falsework & Builders	Works inside Lift Shaft	48	24-Jan-24	22-Mar-24	146	25-Jul-24	19-Sep-24	6d/w x10										1 1 1	E1 - Ere		
WSD-B-LT1-02	Lift E1 - Install Lift including Fitting-0	Dut	60	23-Mar-24	21-May-24	181	20-Sep-24	18-Nov-24	7d/w x10											Lift E1		
WSD-B-LT1-03	Lift E1 - Testing after Power Energiz	zation	12	22-May-24	02-Jun-24	181	19-Nov-24	30-Nov-24	7d/w x10											LiftE	- Testir	ng after
WSD-B-LT1-04	Lift E1 - Submit Form LE5 & Wait fo	r EMSD Inspection	14	03-Jun-24	16-Jun-24	181	01-Dec-24	14-Dec-24	7d/w x10											🗖 Lift E	1 - Sub	mit For
♦ ♦ Milestone	Non-Critical	Task	I							<u>u · l</u>		1									Date	
Near Critical	Task Finished Task	<		FIRS	T PRO	JG	KAIVI	IVIE R	EV. 1	_										03-No		Re
Critical Task					ΔΠ	Δ	τινι	TIFS										发:		19-Ja 08-Fe		Re Re
Time Risk Al.	P6 Hammock	ζ															C	HUN	Wo		J-22	

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	Date prepared	: 11-Feb-22	2 at 13:13
2025   F M A M J J A S O N D J F	2026 MAMJJASONDJ	2027 F M A M  J  J  A	2028 SONDJF
erator Equipments			
to Wall & Sealer to Floor			
enerator Equipments & Testing			
ioors & Ironmogery	I         I		
k Room - Waterproofing & Testing			
ank Room - Plastering Works Insid			
Tank Room - Wall & Floor Tiling V			
nk/ FS Tank Room - Install Equipm			
nk/ F\$ Tank Room - Install Cat La			
I         I	I         I		
nce/ Preparation for ABWF & MEP	Works		
Works incl. block wall, plastering &	& paint, ceiling panel, raised flo	or, door	
Works incl, 1st fix, 2nd fix & final f	ix installation		
spection/Testing/DefectRectficat	ion		
Clearance/ Preparation for ABWF &			
ABWF Works incl. block wall, plast		sea noor, aqor	
on - Inspection/ Testing/ Defect Re			
ctivities from WSD-B-L1-01 to WSI	· · · · · · · · · · · · · ·		
nce/ Preparation for ABWF & MEP	Works		
Works incl; block wall, plastering 8	& paint, ceiling panel, raised flo	or, door	
Works incl. 1st fix, 2nd fix & final f	ix installation		
pection/ Testing/ Defect Rectificat	ion		
I         I	I         I		
ance/ Preparation for ABWF & ME			
VF Works incl. block wall, plasterin		floor, door	
P Works incl, 1st fix, 2nd fix & fina			
Inspection/ Testing/ Defect Rectific			
Activities from WSD-B-L1-01 to W	/SU-B-L1-04		
rance/ Preparation for ABWF & MI	EP Works		
WF Works incl. block wall, plasterin		floor. door	
EP Works incl. 1st fix, 2nd fix & fin			
Inspection/ Testing/ Defect Rectifi	cation		
arance/ Preparation for ABWF & M	EP Works		
- ABWF Works incl. block wall, pla	stering & paint, ceiling panel, i	aised floor, door	
n - MEP Works incl. 1st fix, 2nd fix	& final fix installation		
ation - Inspection/ Testing/ Defect	Rectification		
nce for Third Floor Office Fitting O	Út		
			· · · · · · · · · · · · · · · · · · ·
& Builders Works inside Lift Shaft			
including Fitting-Out	· · · · · · · · · · · · · · · · · · ·		
fter Power Energization	tion		
Revisi Revision 0 First Issue	on	Checked AH	Approved WJ
Revision 1 First Issue		PF	AH
Revision 2 First Issue			

In-situ Reprovisioning	of Sha	Tin
$\Lambda(T) \Lambda(I) \cap (O_{1}, A_{1}) \cap (A_{2}, A_{2})$	A	

Near Critical Task

Critical Task

Time Risk Al.

Finished Task

P6 Hammock

Tasks Summary

### Contract No. 6/WSD/21 In-situ Reprovisioning of Sha Tin Water Treatment Works (South Works) Administration Bu

WTW (South Works) - Admin. Bldg. P6. ID Activity Name

W I 96. ID		/orks) - Admin. Bldg.		Dur.	Start	Finish	Total	Late Start	Late Finish	Workina				-					
0.12							Float	Luio oluit	2010 1 11011	Calendars	JIFIN	2022 .11.11AIS			2023 ALML.IL.I			2024	SONDJ
	WSD-B-LT1-05	Lift E1 - Inspection for Lift Fitout & Issue Lift Certification LE6	2	28 1	17-Jun-24	14-Jul-24	181	15-Dec-24	11-Jan-25									📮 Lit	t E1 - Inspec
	MEP Lift Install	lation (E2 & E3)	2'	218 2	24-Jan-24	28-Aug-24	136	19-Jun-24	11-Jan-25										,
	WSD-B-LT2-01	Lift E2 & E3 (FS) - Erect Falsework & Builders Works inside Lift Shaft	4	48 2	24-Jan-24	22-Mar-24	116	19-Jun-24	14-Aug-24	6d/w x10									(FS) - Erect
	WSD-B-LT2-02	Lift E2 & E3 (FS) - Install Lift including Fitting-Out	6	60 2	23-Mar-24	21-May-24	145	15-Aug-24	13-Oct-24	7d/w x10								🗖 Lift E2	& E3 (FS) - I
	WSD-B-LT2-03	Lift E2 & E3 (FS) - Testing after Power Energization	1	12 3	31-May-24	11-Jun-24	136	14-Oct-24	25-Oct-24	7d/w x10								₽ Lift E	2 & E3 (F\$) -
	WSD-B-LT2-04	Lift E2 & E3 (FS) - Submit Form LE5 & Wait for EMSD Inspection	1	14 1	12-Jun-24	25-Jun-24	136	26-Oct-24	08-Nov-24	7d/w x10								∎ Lift	E2 & E3 (FS)
	WSD-B-LT2-05	Lift E2 & E3 (FS) - Inspection for Lift Fitout & Issue Lift Certification LE6	2	28 2	26-Jun-24	23-Jul-24	136	09-Nov-24	06-Dec-24	7d/w x10								<b>–</b> L	ift E2 & E3 (F
	WSD-B-LT2-06	Dismantle Material Hoist	1	12 2	24-Jul-24	04-Aug-24	136	07-Dec-24	18-Dec-24	7d/w x10	 	 ·-+						<b>P</b>	Dismantle Ma
	WSD-B-LT2-07	Remaining Works at Hosit Area	2	24 0	)5-Aug-24	28-Aug-24	136	19-Dec-24	11-Jan-25	7d/w x10	 	 							Remaining
	Other Facilities	S	8	88 1	11-Jun-24	23-Sep-24	0	11-Jun-24	23-Sep-24	6d/w x10								V	
	WSD-B-OF-01	Fit-out & Plumber Works - Water Closet Rooms	8	88 1	11-Jun-24	23-Sep-24	0	11-Jun-24	23-Sep-24	6d/w x10									Fit-out &
	WSD-B-OF-02	FS Sprinkler Pump Room - E&M Installation of pumping system & BS Works	6	64 1	11-Jun-24	24-Aug-24	0	11-Jun-24	24-Aug-24	6d/w x10								-	FS Sprinkle
	WSD-B-OF-03	Hot Water Plant/ Lab Waste Tank/ Water Sump Tank & Pump/ Foul Water Sump	o Pump 8	88 1	11-Jun-24	23-Sep-24	0	11-Jun-24	23-Sep-24	6d/w x10		 							Hot Wate
	Car Park - MEF	PWorks	16	66 1	13-Nov-23	06-Jun-24	90	04-Jun-24	23-Sep-24	6d/w x10								-	
	WSD-B-CP-01	Car Park - Erect Falseworks for Builders & MEP Works	1	12 1	13-Nov-23	25-Nov-23	163	04-Jun-24	18-Jun-24	6d/w x10									works for Bui
	WSD-B-CP-02	Car Park - ABWF/ MEP/ FS Works	4	45 2	27-Nov-23	20-Jan-24	163	19-Jun-24	10-Aug-24	6d/w x10						ļ	Car P	ark - ABWF	/ MEP/ FS W
	WSD-B-CP-03	Car Park - Electric Vehicle Charging Facilities	3	30 2	22-Jan-24	28-Feb-24	163	12-Aug-24	14-Sep-24	6d/w x10							🗖 Ca	r Park - Ele	ctric Vehicle
	WSD-B-CP-04	Car Park - Testing & Commissioning for Electric Vehicle Charging Facilities	(	6 3	31-May-24	06-Jun-24	90	16-Sep-24	23-Sep-24	6d/w x10								I Car P	ark - Testing
	Works for KD-	1	7	70 3	31-Jul-23	21-Oct-23	0	13-Sep-23	21-Oct-23	6d/w x10						<b></b>			
	WSD-KD1-01	ABWF & FS Works for Server Rooms/ Security Control Room	3	32 3	31-Jul-23	05-Sep-23	38	13-Sep-23	21-Oct-23	6d/w x10									r Rooms/ Sec
	WSD-KD1-02	Complete the Civil, Structure Works, ABWF & FS for Server Rooms/ Security Co	ontrol Room (	0		05-Sep-23	38		21-Oct-23	6d/w x10									Works, ABW
	WSD-KD1-03	ABWF & FS Works for Main Control Room	3	32 1	13-Sep-23	21-Oct-23	0	13-Sep-23	21-Oct-23	6d/w x10		 				💻 A	BWF&FSV	Vorks for M	ain Control R
	WSD-KD1-04	Complete the Civil, Structure Works, ABWF & FS for Main Control Room	(	0		21-Oct-23	0		21-Oct-23	6d/w x10		 				♦ C	omplete the	Civil, Struc	ture Works, A
	Works for KD-	2	14	45 1	19-Feb-24	12-Jul-24	0	26-Apr-24	12-Jul-24								1 1		
	WSD-KD2-01	Electrical Power System incl. testing for Basement	4	48 1	19-Feb-24	18-Apr-24	62	07-May-24	04-Jul-24	6d/w x10								Electrical	Power Syste
	WSD-KD2-02	Electrical Power System incl. testing for Second Floor	4	48 2	26-Feb-24	25-Apr-24	56	07-May-24	04-Jul-24	6d/w x10								Electrical	Power Syste
	WSD-KD2-03	Electrical Power System incl. testing for Third Floor	5	56 2	26-Apr-24	04-Jul-24	0	26-Apr-24	04-Jul-24	6d/w x10								Ele	ctrical Power
	WSD-KD2-04	Termination of Cable to Tx after Cable Laying by 1/WSD/19	(	0		30-May-24	28		04-Jul-24	6d/w x10		 						♦ Termi	nation of Cab
	WSD-KD2-05	Time Risk Allowance for Activities WSD-KD2-01 to WSD-KD2-04	8	8 (	05-Jul-24	12-Jul-24	0	05-Jul-24	12-Jul-24	7d/w x10								I Ti	me Risk Allov
	WSD-KD2-06	Completion of CLP Power Supply to Main Control Room, Main Security Room a	nd Server Rooms incl. tes	0		12-Jul-24	0		12-Jul-24	6d/w x10	 	 						♦ Co	mpletion of (
	External Works		22	21 2	24-Jan-24	31-Aug-24	133	31-May-24	11-Jan-25								V		,
	WSD-W-X-01	Ext. Works - Underground Utilities Works, Drainage Works & Testing	7	72 2	24-Jan-24	24-Apr-24	101	31-May-24	24-Aug-24	6d/w x10								Ext, Worl	ks - Undergro
	WSD-W-X-02	Ext. Works - Backfilling to Ground Level	2	24 2	25-Apr-24	24-May-24	108	03-Sep-24	02-Oct-24	6d/w x10								🗖 Ext. W	orks - Backfil
	WSD-W-X-03	Ext. Works - Construction of Remaining Concrete Pavement	4	48 2	25-May-24	22-Jul-24	108	03-Oct-24	28-Nov-24	6d/w x10								E	xt. Works - C
	WSD-W-X-04	Ext. Works - Construction of Staircase, ABWF	4	48 2	28-Jun-24	23-Aug-24	108	06-Nov-24	03-Jan-25	6d/w x10									Ext. Works
	WSD-W-X-05	Time Risk Allowance for External Works	8	8 2	24-Aug-24	31-Aug-24	133	04-Jan-25	11-Jan-25	7d/w x10								9	Time Risk
-	esting & Comr	nissioning	4	48 2	26-Aug-24	23-Oct-24	0	26-Aug-24	23-Oct-24	6d/w x10									<b></b>
	WSD-B-TC-01	Testing & Commissioning & fixing defects (FS - Related)	2	24 2	26-Aug-24	23-Sep-24	0	26-Aug-24	23-Sep-24	6d/w x10									Testing 8
	WSD-B-TC-02	Testing & Commissioning & fixing defects (Non- FS - Related)	2	24 2	24-Sep-24	23-Oct-24	0	24-Sep-24	23-Oct-24	6d/w x10									📕 Testin
E	levated Walkw	ay No.2	3	B17 C	05-Oct-22	27-Oct-23	439	08-Feb-25	23-Apr-25	6d/w x10	 	 				<b></b> V			
\	VSD-W-W2-01	EW No.2 - Completion of Structural Support at South Works Pumping Station (to	be constructed by Other	0 0	05-Oct-22		696	08-Feb-25		6d/w x10		1 1 1			1 1 1				ks Pumping S
\	VSD-W-W2-02	EW No.2 - Preparation Works on Structural Support at SWPS for Mic Bridge Ere	ction 1	12 0	05-Oct-22	18-Oct-22	696	08-Feb-25	21-Feb-25	6d/w x10			EW	No.2 - Pr					NPS for Mic
	VSD-W-W2-03	EW No.2 - Completion of Structural Support at Administration Building (integrate	d in MiC unit)	0 3	31-Jul-23		465	22-Feb-25		6d/w x10									iral Support a
١	VSD-W-W2-04	EW No.2 - Preparation Works on Structural Support at Administration Building for	r Mic Bridge Erection 1	12 3	31-Jul-23	12-Aug-23	465	22-Feb-25	07-Mar-25	6d/w x10						EW No	2 - Preparat	on Works o	n Structural S
١	VSD-W-W2-11	EW No.2 - MiC Bridge Installation & Associated Connection Works		6 1	13-Sep-23	19-Sep-23	439	08-Mar-25	14-Mar-25	6d/w x10						0 EW	No.2 - MiC E	aridge Insta	llation & Asso
١	VSD-W-W2-12	EW No.2 - Remaining ABWF, Fitout, BS Works along Mic Bridge	3	30 2	20-Sep-23	27-Oct-23	439	15-Mar-25	23-Apr-25	6d/w x10		 					W No.2 - Re	maining Al	3WF, Fitout, I
E	levated Walkw	ay No.1 (Structural Support only)	(			21-Oct-23		24-Apr-25	24-Apr-25	6d/w x10		 				▼			
\ \	VSD-W-W1-01	Completion of Structural Support at Administration Building (integrated in Structure)	ral Element, RC Slab on :	0 2	21-Oct-23		444	24-Apr-25		6d/w x10						◆ C	ompletion of	Structural	Support at Ac
lr	spection & App	oroval by Government Authorities	59	592 1	17-Sep-23	30-Apr-25	0	23-Apr-24	30-Apr-25	7d/w x10						V			
•	Milestone	Non-Critical Task															AAA	[	Date
-	• ······					г DDС			ллг р	<b>Г\/ 1</b>						- I - V			

**FIRST PROGRAMME REV. 1 ALL ACTIVITIES** 





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Building		44 5	Pag			
	Date prepared	: 11-F	eb-22	at	13:	13
2025 J F M A M J J A S O N D J F	2026 MAMJJASONDJ	FMAM	2027 JIJIA		ND	2028 J F
ection for Lift Fitout & Issue Lift Certi	fication LE6		<u> </u>	50		51
ct Falsework & Builders Works inside	Lift Şhaft					
- Install Lift including Fitting-Out						
<ul> <li>Festing after Power Energization</li> </ul>						
S) - Submit Form LE5 & Wait for EM	SD Inspection					
(FS) - Inspection for Lift Fitout & Iss	ue Lift Certification LE6					
Material Hoist						
ig Works at Hosit Area						
& Plumber Works - Water Closet Ro	oms					
kler Pump Room - E&M Installation o	f pumping system & BS Work	s				
ater Plant/ Lab Waste Tank/ Water S			lumn			
Builders & MEP Works						
Works						
le Charging Facilities						
ng & Commissioning for Electric Veh	icle Charging Facilities					
ecurity Control Room						
WF & FS for Server Rooms/ Security	y Control Room					
Room						
ABWF & FS for Main Control Room						
tem incl. testing for Basement						
stem incl. testing for Second Floor						
ver System incl. testing for Third Floo						
able to Tx after Cable Laying by 1/W	SD/19					
owance for Activities WSD-KD2-01 t	o WSD-KD2-04					
f CLP Power Supply to Main Control	Room, Main Security Room a	and Serve	Rooms	incl.	testir	g
round Utilities Works, Drainage Wor	ks & Testing					
tfilling to Ground Level						
Construction of Remaining Concrete	Pavement					
s - Construction of Staircase, ABWF						
k Allowance for External Works						
g & Commissioning & fixing defects (	FS - Related)					
ting & Commissioning & fixing defect						
Station (to be constructed by Other	under 1/WSD/19)					
c Bridge Erection						
t at Administration Building (integrate	d in MiC unit)					
al Support at Administration Building						
sociated Connection Works						
t, BS Works along Mic Bridge						
Administration Building (integrated in	i Structural Element, RC Slab	on Secon	d Level)			
Revisio	on	Chec	ked	Ap	prov	ed
Revision 0 First Issue		AH		WJ	<u> </u>	
Revision 1 First Issue		PF		AH		
Revision 2 First Issue						

	Activity Name	Dur.	Start	Finish	Total Float	Late Start	Late Finish	Working Calendars	2022 2023	2024
FSD - DG Lice		004	47.0 00	00 hrs 04		02 4 04	44 1 05	7d/w x10	NDJFMAMJJJASONDJFMAMJJASONDJFMA	
WSD-IA-F01	FSD - DG Drawings First Submission	264 60	17-Sep-23 17-Sep-23	06-Jun-24 15-Nov-23	_		21-Jun-24		F\$D- DG Dr	rawings First Submission
WSD-IA-F02	FSD - DG Drawings Second Amendment	60	16-Nov-23	14-Jan-24			20-Aug-24			OG Drawings Second Am
WSD-IA-F03	FSD - DG Drawings Third Amendment	60	15-Jan-24	14-Mar-24				7d/w x10		SD - DG Drawings Third A
WSD-IA-F04	FSD - DG Inspection & Rectification	30	15-Mar-24	13-Apr-24				7d/w x10		F\$D - DG Inspection & F
WSD-IA-F05	FSD - VD Review & Inspection/ Rectification Works	42	14-Apr-24	25-May-24			30-Dec-24			FSD - VD Review & I
WSD-IA-F06	FSD - VD issue letter of compliance	6	26-May-24					7d/w x10		FSD - VD issue lette
WSD-IA-F07	FSD - Issue of DG License	6	01-Jun-24	-				7d/w x10		FSD - Issue of DG L
		-								
WSD-IA-E01	ncy Generator EPD - EPD Drawing Submission & Approval	96 60	08-May-24 08-May-24		_	08-Oct-24 08-Oct-24	06-Dec-24	7d/w x10 7d/w x10		EPD - EPD Draw
WSD-IA-E02	EPD - Site Inspection & Rectification Works	30	07-Jul-24	05-Aug-24		07-Dec-24		7d/w x10		EPD - Site Insp
WSD-IA-E03	EPD - Approval Issue	6	06-Aug-24			06-Jan-25		7d/w x10		I EPD - Approva
WSD-IA-205				-		24-Oct-24		7d/w x10		
WSD-IA-W01	WSD - Submit WWO 46 Part IV (PD) & Arrange Inspection by WSD	21	24-Sep-24 24-Oct-24	11-Jan-25 13-Nov-24	-	24-Oct-24 24-Oct-24		7d/w x10 7d/w x10		WSD
WSD-IA-W02	WSD - Site Inspection & Rectification Works by WSD (PD)	45	14-Nov-24			14-Nov-24	28-Dec-24			·····
WSD-IA-W03	WSD - Issue WWO 46 Part V (PD)	14	29-Dec-24	11-Jan-25		29-Dec-24		7d/w x10		
						23-Dec-24 24-Oct-24				📮 WSD - S
WSD-IA-W04	WSD - Submit WWO 46 Part IV (FS) & Arrange Inspection by WSD	21	· ·	14-Oct-24				7d/w x10		
WSD-IA-W05	WSD - Site Inspection & Rectification Works by WSD (FS)	45	15-Oct-24	28-Nov-24		14-Nov-24	28-Dec-24			
WSD-IA-W06	WSD - Issue WWO 46 Part V (FS)	14	29-Nov-24			29-Dec-24		7d/w x10		
FSD / OP Inspe WSD-IA-OP01	SD - Submit Form FS251/314/501	109	11-Jan-25	30-Apr-25 11-Jan-25		11-Jan-25	30-Apr-25	7d/w x10 7d/w x10		
		-	10 Jan 25			10 Jan 05	25-Jan-25			
	FSD - FSD processes Form 215/314/501 & arranging for Inspection	14	12-Jan-25			12-Jan-25				
	FSD - FS Inspection, Rectification and Reinspection	28	26-Jan-25			26-Jan-25	22-Feb-25			
	FSD - FSD processes FS Certificate Form 172	14	23-Feb-25	08-Mar-25		23-Feb-25	08-Mar-25			
	FSD - Issued Form 172 Issued by FSD (Fire Certificate)	0		08-Mar-25			08-Mar-25	7d/w x10		
WSD-IA-OP02	BD - Submit Form BA13	0	27-Feb-25			27-Feb-25		7d/w x10		
WSD-IA-OP03	BD - BD processes Form BA13 & Arranging for Inspection	14				27-Feb-25	12-Mar-25			
WSD-IA-OP04	BD - Inspection & Rectification Works	28	13-Mar-25	09-Apr-25	0	13-Mar-25	09-Apr-25	7d/w x10		
WSD-IA-OP05	BD - Issue OP Certificate	14	10-Apr-25	23-Apr-25	0	10-Apr-25	23-Apr-25	7d/w x10		
WSD-IA-OP06	Final Inspection & Handover to Client	7	24-Apr-25	30-Apr-25	0	24-Apr-25	30-Apr-25	7d/w x10		
te Works for S			24-Jan-24	· ·		24-Jan-24	30-Apr-25			
	Roof Terrace (Second Level)						23-Apr-25		n cPa	of 2/F Level - Constructio
NSD-W2-RT01	G.Roof 2/F Level - Construction of Planter Separation	12		06-Feb-24		19-Sep-24	03-Oct-24			Roof 2/F Level - Installat
NSD-W2-RT02	G.Roof 2/F Level - Installation of Irrigation Pipeworks & Irrigation Point	30		15-Mar-24			02-Dec-24			
NSD-W2-RT03	G.Roof 2/F Level - Laying of Waterproof Membrane with Protection Screeding & Root Barrier	20	16-Mar-24	12-Apr-24				6d/w x10		G Roof 2/F Level - Layin
NSD-W2-RT04	G.Roof 2/F Level - Laying of Drainage, Filter, Moisture Retention Membrane, Erosion Protection Mat	20	13-Apr-24	07-May-24			28-Jan-25	6d/w x10		GRoof 2/FLevel - Lay
NSD-W2-RT05	G.Roof 2/F Level - Filling of Soil Layer	18	08-May-24	29-May-24	219	01-Feb-25	21-Feb-25	6d/w x10		G.Roof 2/F Leve - F
NSD-W2-RT06	G.Roof 2/F Level - Vegetation/ Planting	24	30-May-24	27-Jun-24	219	22-Feb-25	21-Mar-25	6d/w x10		G.Roof 2/F Level
NSD-W2-RT07	G.Roof 2/F Level - Installation of Paving Stones on Walkway	60	24-Feb-24	09-May-24	193	19-Oct-24	30-Dec-24	6d/w x10		GRoof 2/F Level Ins
NSD-W2-RT08	G.Roof 2/F Level - Installation Lighting	30	10-May-24	08-Jun-24	319	25-Mar-25	23-Apr-25	7d/w x10		G.Roof 2/F Level - I
ireen Roof at l	Roof Level	162	07-Feb-24	26-Aug-24	193	04-Oct-24	23-Apr-25	6d/w x10		<b></b>
WSD-W2-RL01	G.Roof R/F Level - Construction of Planter Separation	12	07-Feb-24	23-Feb-24	193	04-Oct-24	18-Oct-24	6d/w x10		oof R/F Leve) - Construct
NSD-W2-RL02	G.Roof R/F Level - Installation of Irrigation Pipeworks & Irrigation Point	30	16-Mar-24	24-Apr-24	213	03-Dec-24	09-Jan-25	6d/w x10		G.Roof R/F Level - Insta
WSD-W2-RL03	G.Roof R/F Level - Laying of Waterproof Membrane with Protection Screeding & Root Barrier	20	25-Apr-24	20-May-24	213	10-Jan-25	05-Feb-25	6d/w x10		G.Roof R/F Level - La
WSD-W2-RL04	G.Roof R/F Level - Laying of Drainage, Filter, Moisture Retention Membrane, Erosion Protection Mat	20	21-May-24	13-Jun-24	213	06-Feb-25	28-Feb-25	6d/w x10		GRoof R/F Level -
NSD-W2-RL05	G.Roof R/F Level - Filling of Soil Layer	18	14-Jun-24	05-Jul-24	213	01-Mar-25	21-Mar-25	6d/w x10		G.Roof R/F Level
NSD-W2-RL06	G.Roof R/F Level - Turf Laying on Roof	24	06-Jul-24	02-Aug-24	213	22-Mar-25	23-Apr-25	6d/w x10		G.Roof R/F Lev
NSD-W2-RL07	G.Roof R/F Level - Installation of Paving Stones on Walkway	60	10-May-24			31-Dec-24		6d/w x10		G.Roof R/F Leve

•	•	Milestone
		Near Critical Task
		Critical Task
		Time Risk Al.

Finished Task Tasks Summary P6 Hammock

Non-Critical Task

## **FIRST PROGRAMME REV. 1 ALL ACTIVITIES**



Date

03-Nov-21

19-Jan-22

08-Feb-22

uilding Date prepared : 11-Feb-22 at 13:13 2025 2026 2027 20 JFMAMJJJASONDJFMAMJJASONDJFMAMJJJASONDJ mendment Amendment Rectification & Inspection/ Rectification Works ter of compliance License awing Submission & Approva nspection & Rectification Work oval Issue D - Submit WWO 46 Part IV (PD) & Arrange Inspection by W\$D WSD - Site Inspection & Rectification Works by WSD (PD) WSD - Issue WWO 46 Part V (PD) Submit WWO 46 Part IV (FS) & Arrange Inspection by WSD SD - Site Inspection & Rectification Works by WSD (FS) VSD - Issue WWO 46 Part V (FS) FSD - Submit Form FS251/314/501 FSD - FSD processes Form 215/314/501 & arranging for Inspection FSD - FS Inspection, Rectification and Reinspection FSD- FSD processes FS Certificate Form 172 FSD - Issued Form 172 Issued by FSD (Fire Certificate BD - Submit Form BA13 BD - BD processes Form BA13 & Arranging for Inspection BD - Inspection & Rectification Works BD - Issue OP Certificate Final Inspection & Handover to Client **---**tion of Planter Separation lation of Irrigation Pipeworks & Irrigation Point ring of Waterproof Membrane with Protection Screeding & Root Barrier aying of Drainage, Filter, Moisture Retention Membrane, Erosion Protection Mat Filling of Soil Layer el - Vegetation/ Planting stallation of Paving Stones on Walkway Installation Lighting

Page 9 of 10

uction of Planter Separation stallation of Imgation Pipeworks & Irrigation Point Laying of Waterproof Membrane with Protection Screeding & Root Barrier - Laying of Drainage, Filter, Moisture Retention Membrane, Erosion Protection Mat vel + Filling of Soil Layer

Level - Turf Laying on Roof evel - Installation of Paving Stones on Walkway

Revision	Checked	Approved
Revision 0 First Issue	AH	WJ
Revision 1 First Issue	PF	AH
Revision 2 First Issue		

In-situ Reprovisioning of Sha Tin
WTW (South Works) - Admin Bldg

### Contract No. 6/WSD/21 In-situ Reprovisioning of Sha Tin Water Treatment Works (South Works) Administration Bu

	ioning of ond thi	
WTW (South W		
P6. ID	Activity Name	

	Activity Name	Dur.	Start	Finish		Late Start	Late Finish		-	-					 	 		 				
					Float			Calendars					2022			2023				2024		
WSD-W2-RL08	G.Roof R/F Level - Installation Lighting	30	23-Jul-24	26-Aug-24	193	15-Mar-25	23-Apr-25	6d/w x10	IN	DJ	FIM	AM	JJJ	490	FIM	JJF	190	JIFIN	A M		G.Roof	
Courtyard at G	Ground Level	463	24-Jan-24	30-Apr-25	0	24-Jan-24	30-Apr-25			+												
WSD-W2-CY01		48	24-Jan-24	22-Mar-24	0	24-Jan-24	22-Mar-24	6d/w x10						- + +	 	 		 -	G.Rc	of G/F	Level - F	ormaite
WSD-W2-CY02	G.Roof G/F Level - Hydroseeding on Slope	30	23-Mar-24	02-May-24	0	23-Mar-24	02-May-24	6d/w x10								 		 t t	<b>—</b> C	Roof	G/F Leve	I - Hydr
WSD-W2-CY03	G.Roof G/F Level - Concrete Structure incl. Planter/ Bearing Wall/ Bench	48	03-May-24	29-Jun-24	0	03-May-24	29-Jun-24	6d/w x10							 	 		 	-	📕 G.I	Roof G/F	Level -
WSD-W2-CY04	G.Roof G/F Level - Installation of Drainage System at Courtyard	48	02-Jul-24	26-Aug-24	0	02-Jul-24	26-Aug-24	6d/w x10							 	 		 		-	G.Roof	i G/F Le
WSD-W2-CY05	G.Roof G/F Level - Installation of Irrigation Pipeworks & Irrigation Point	48	02-Jul-24	26-Aug-24	0	02-Jul-24	26-Aug-24	6d/w x10							 	 				-	G.Roof	i G/F L
WSD-W2-CY06	G.Roof G/F Level - Laying of Waterproof Membrane with Protection Screeding	36	27-Aug-24	09-Oct-24	0	27-Aug-24	09-Oct-24	6d/w x10							 	 		 			🛑 G.F	₹oof G/
WSD-W2-CY07	G.Roof G/F Level - Soil Placement in Planter (2m depth)	36	10-Oct-24	21-Nov-24	0	10-Oct-24	21-Nov-24	6d/w x10								 		 			-	G.Roo
WSD-W2-CY08	G.Roof G/F Level - Tree Transplant (39nos)	40	22-Nov-24	10-Jan-25	0	22-Nov-24	10-Jan-25	6d/w x10							 	 		 				<b>—</b> G.
WSD-W2-CY09	G.Roof G/F Level - G.Roof G/F Level - Shrub Planting	48	11-Jan-25	11-Mar-25	0	11-Jan-25	11-Mar-25	6d/w x10							 	 		 				
WSD-W2-CY10	G.Roof G/F Level - Hydroseeding on Lawn	28	12-Mar-25	17-Apr-25	0	12-Mar-25	17-Apr-25	6d/w x10								 		 				
WSD-W2-CY10.	5 Time Risk Allowance for Activities from WSD-W2-CY01 to WSD-WC-CY-10	6	18-Apr-25	23-Apr-25	0	18-Apr-25	23-Apr-25	7d/w x10						-++	 	 		 				
WSD-W2-CY11	G.Roof G/F Level - Architechural Works/ Balustrade Installation	65	02-Jul-24	14-Sep-24	56	05-Sep-24	22-Nov-24	6d/w x10								 		 		-	🗖 G Ro	of G/F
WSD-W2-CY12	G.Roof G/F Level - Installation of Lighting	30	16-Sep-24	23-Oct-24	56	23-Nov-24	30-Dec-24	6d/w x10			+				 	 		 			🗖 G	Roof G
WSD-W2-CY13	G.Roof G/F Level - Installation of Paving Stones on Walkway	90	24-Oct-24	12-Feb-25	56	31-Dec-24	23-Apr-25	6d/w x10						- + + - +	 	 		 				-
WSD-W2-CY14	G.Roof G/F Level - Waterproof, External Plaster applied to Retaining Wall	12	02-Jul-24	15-Jul-24	205	08-Mar-25	21-Mar-25	6d/w x10							 	 		 		🛛 G	Roof G/F	- Level
WSD-W2-CY15	G.Roof G/F Level - Installation of Green Climber System on Retaining Wall	12	16-Jul-24	29-Jul-24	205	22-Mar-25	05-Apr-25	6d/w x10						- + +	 	 		 			G.Roof G	/F Leve
WSD-W2-CY16	G.Roof G/F Level - Soil Placement around Retaining Wall	6	30-Jul-24	05-Aug-24	205	07-Apr-25	16-Apr-25	6d/w x10						- + +	 	 		 		P	G.Roof C	3/F Lev
WSD-W2-CY17	G.Roof G/F Level - Vertical Planting on Climber System	6	06-Aug-24	12-Aug-24	205	17-Apr-25	23-Apr-25	6d/w x10							 	 		 		0	G.Roof	G/F Le
WSD-W2-CY18	G.Roof G/F Level - Final Inspection & Handover to Client	7	24-Apr-25	30-Apr-25	0	24-Apr-25	30-Apr-25	7d/w x10						- + + - +	 	 		 				
WSD-W2-CY19	Planned Project Completion	0		30-Apr-25	0		30-Apr-25	7d/w x10							 	 		 				
Site Works for S	Section 2A	365	01-May-25	30-Apr- <u>26</u>	0	01-May-25	30-Apr-26	7d/w x10		+								1 1 1 1 1 1				
WSD-W2A-01	Establishment Works		01-May-25	· ·		01-May-25									 	 		 				
WSD-W2A-02	Final Inspection & Handover to Client	6	25-Apr-26	30-Apr-26	0	25-Apr-26	30-Apr-26	7d/w x10					-+	-++	 	 		 				

Milestone ٠ Near Critical Task Critical Task Time Risk Al.

Non-Critical Task Finished Task Tasks Summary P6 Hammock

**FIRST PROGRAMME REV. 1 ALL ACTIVITIES** 



Date

03-Nov-21

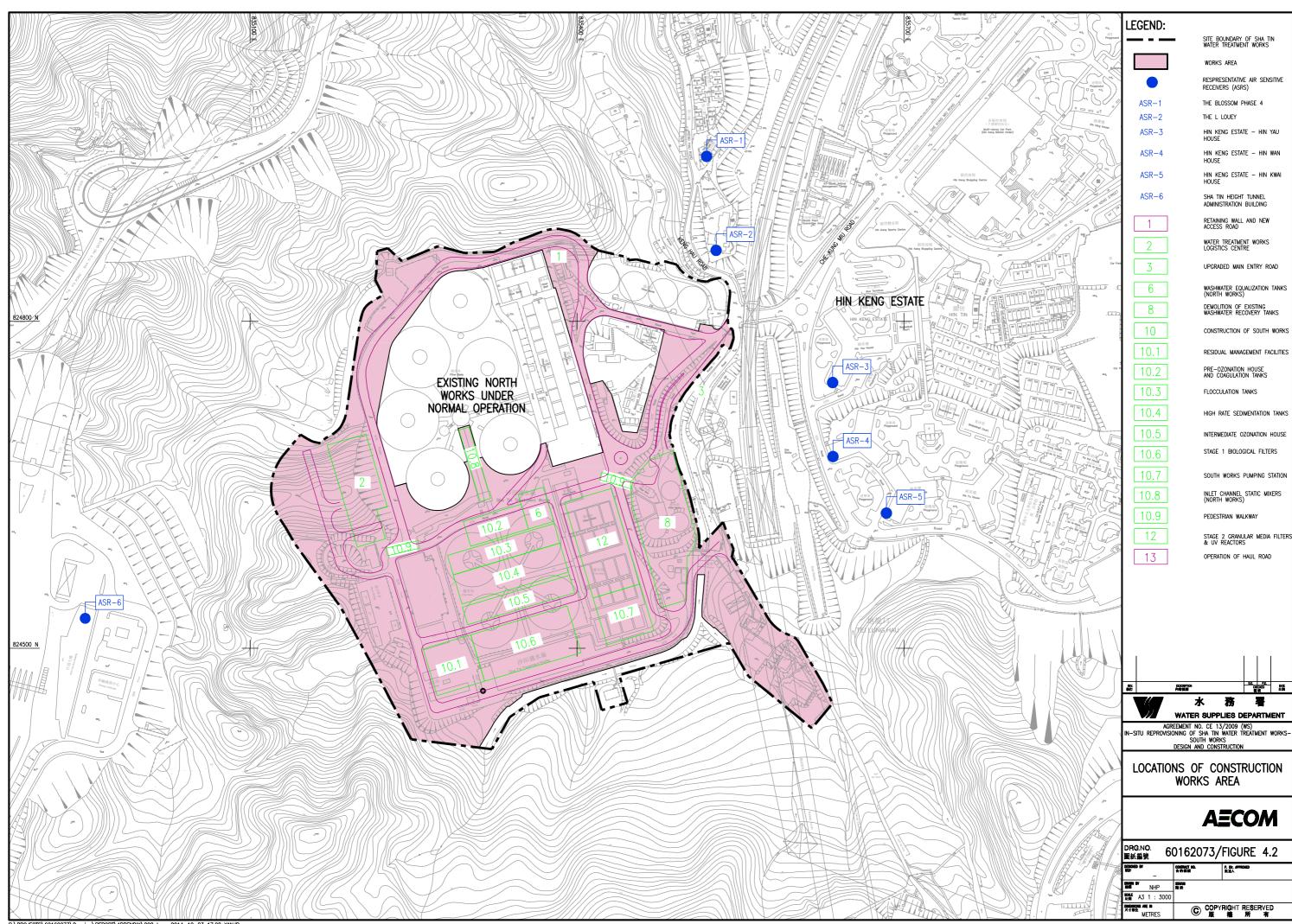
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uilding	, °	e 10 of 10
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2025	2026 2027	2028
J F M A M J J A S O N D J F F Level - Installation Lighting	FMAMJJASONDJFMAMJJA	SONDJF
	1         5	
naiton of Slope profile (Grid H-M/ 5	9)	
lydroseeding on Sløpe		
/el - Concrete Structure incl. Plante	et/Bearing Wall/Bench	
F Level - Installation of Drainage S	System at Courtyard	
F Level - Installation of Irrigation Pi	ipeworks & Irrigation Point	
f G/F Level - Laying of Waterproof	Membrane with Protection Screeding	
Roof G/F Level - Soil Placement in	Planter (2m depth)	
G Roof G/F Level - Tree Transpla	ant (39nos)	
G.Roof G/F Level - G.Roof (	G/F Level - Shrub Planting	
📕 G Roof G/F Level - Hydro	oseeding on Lawn	
Time Risk Allowance for	r Activities from WSD-W2-CY01 to WSD-WC-CY	-10
6/F Level - Architechural Works/ Ba	alustrade Installation	
of G/F Level - Installation of Lightin	ng	
GRoof G/F Level - Installation	n of Paving Stones on Walkway	
evel - Waterproof, External Plaster	applied to Retaining Wall	
evel - Installation of Green Climbe		
Level - Soil Placement around Ret		
Level - Vertical Planting on Climbe		
	al Inspection & Handover to Client	
Planned Project Comple	etion	
	Establishment Works	
	Final Inspection & Handover to Client	

Revision	Checked	Approved
Revision 0 First Issue	AH	WJ
Revision 1 First Issue	PF	AH
Revision 2 First Issue		

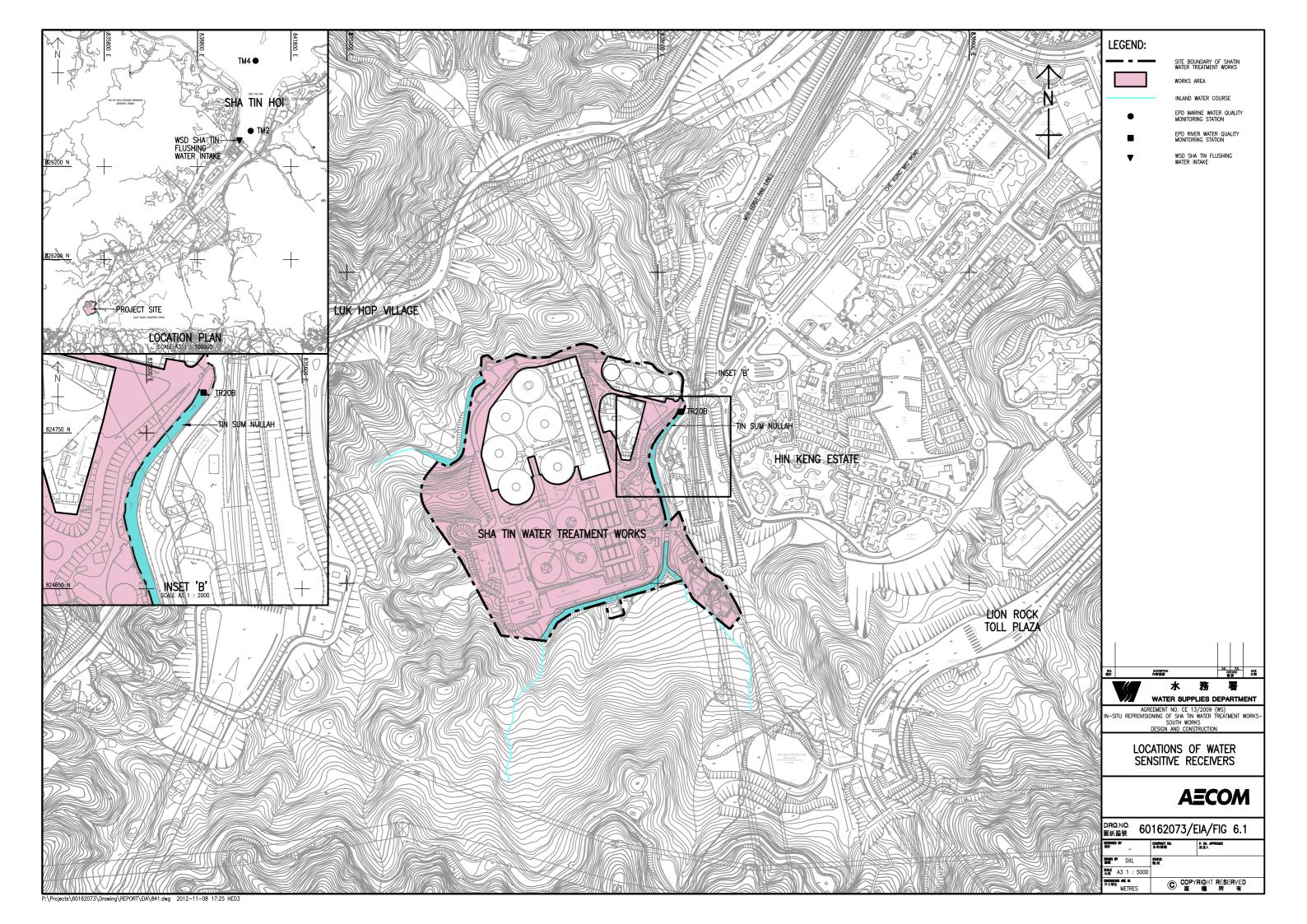
# Appendix D Location of Construction Activities

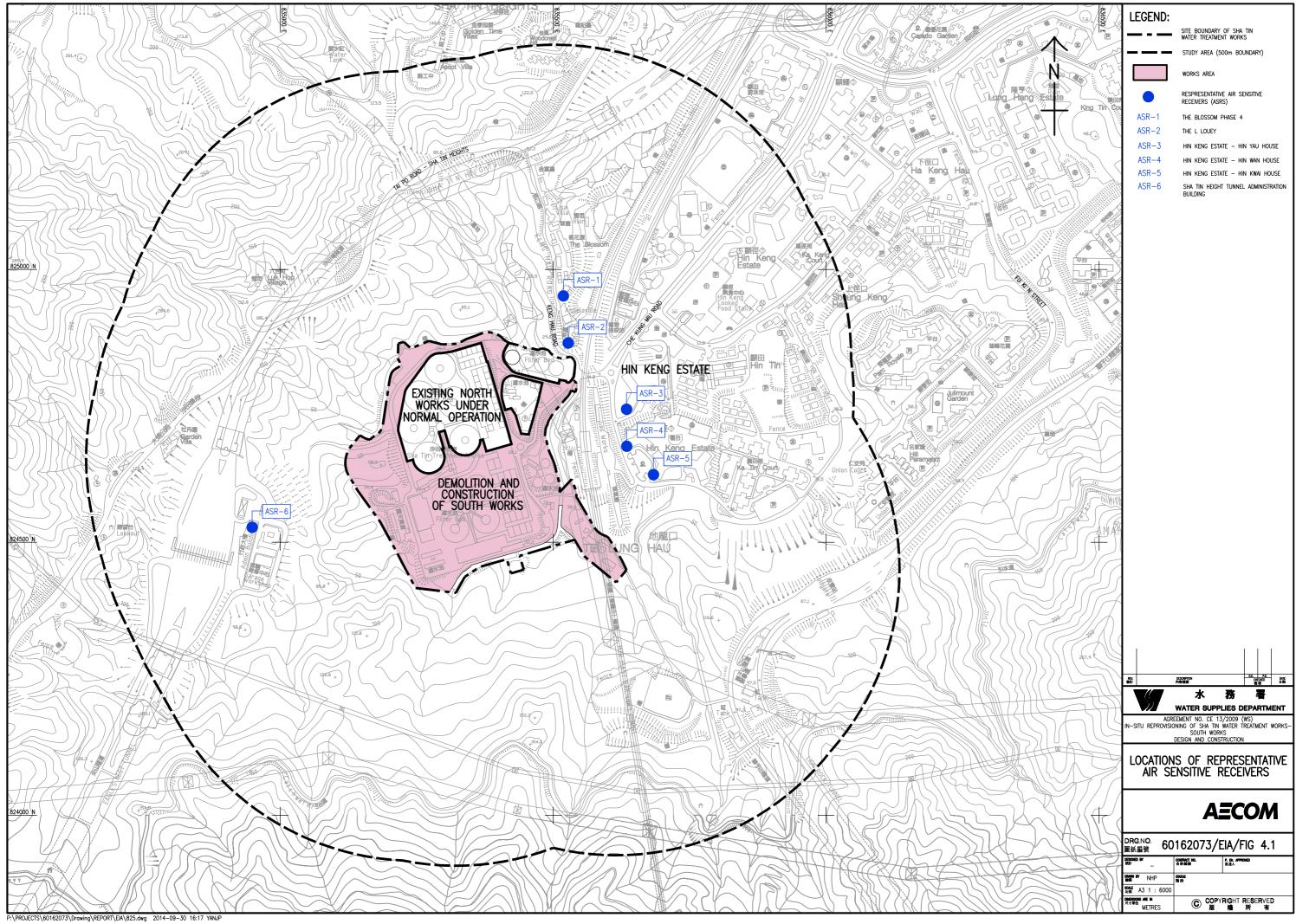


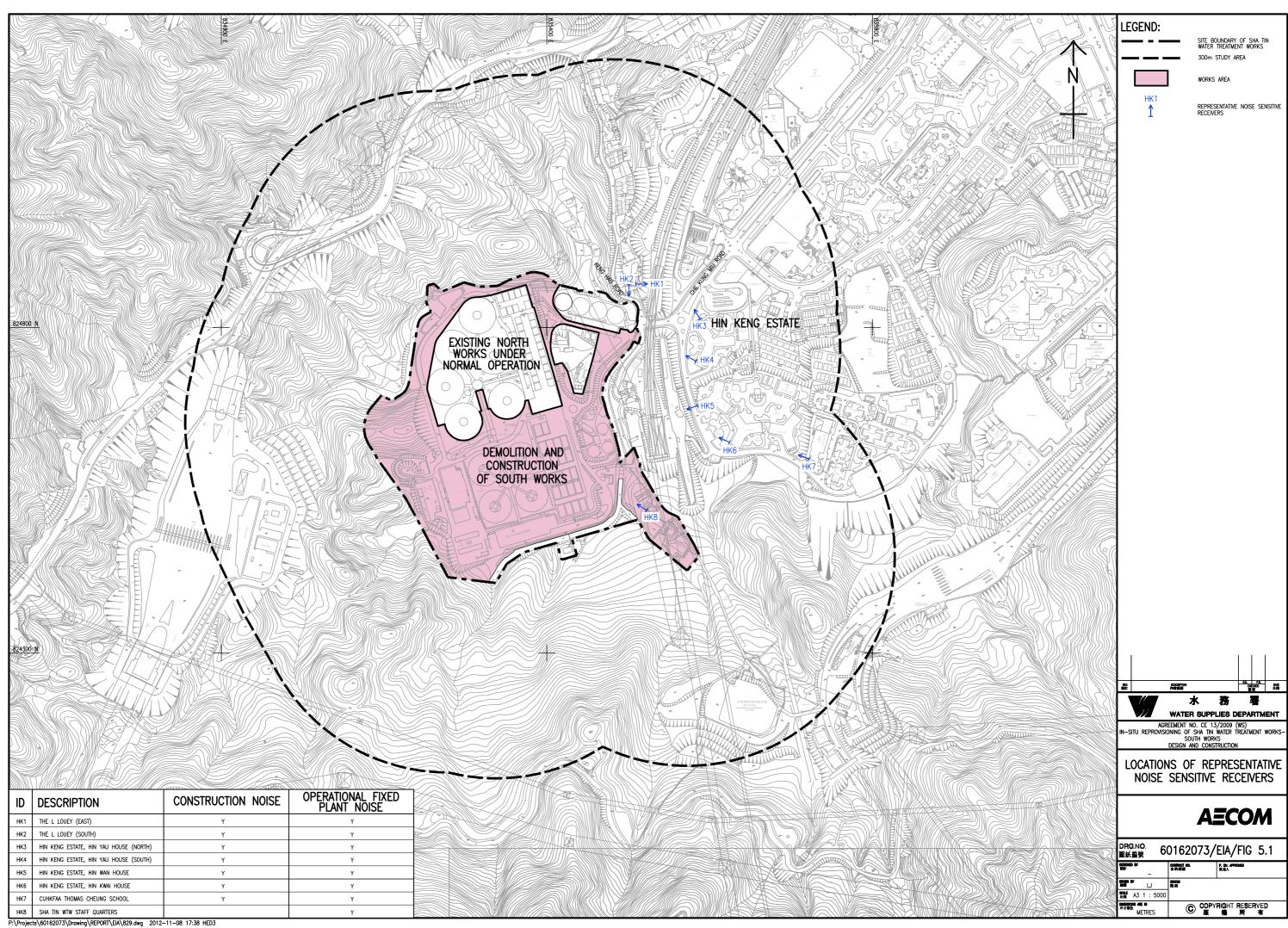
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DRG.NO. 60 圖紙編號 60	0162073/	FIGURE 4.2
DESIGNED BY 1831- —	confinct HD. 合約網號	P. Dr. APPROVED 批准人
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# Appendix E Environmental Sensitive Receivers in the Vicinity of the Projects







# Appendix F Summary of Action and Limit Levels

Monitoring Locations	Action Level 1-hour TSP, (µg/m³)	Limit Level 1-hour TSP, (µg/m <sup>3</sup> )
AM1	357	500
AM2	334	500

### Determination of Action and Limit Levels for Air Quality

#### Determination of Action and Limit Levels for Noise

Monitoring	Action Level	Limit Level in dB(A)				
Location	0700-1900 h	0700-1900 hours on normal weekdays				
NM1		For domestic premises: 75 dB(A) for				
NM2	When one documented	NM1 & NM2				
NM3	complaint is received	For schools: 70dB(A) during normal teaching periods and 65 dB(A) during examination periods for NM3				

#### Determination of Action and Limit Levels for Water Quality

Water		d Oxygen g/L)	Suspendee (mg/		Turbidity	r (NTU)	pl	H
monitoring stations	Action	Limit	Action	Limit	Action	Limit	Action	Limit
stations	Level	Level	Level	Level	Level	Level	Level	Level
C1	7.51	7.44	4.19	6.73	3.99	4.00	Beyond the range 6.6 to 7.9	Beyond the range 6.5 to 8.0
C2	8.10	7.98	4.33	8.16	3.13	3.28	Beyond the range 6.6 to 8.8	Beyond the range 6.5 to 8.9
C3*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
M1	8.90	8.89	3.30	3.56	4.36	4.48	Beyond the range 6.6 to 8.2	Beyond the range 6.6 to 8.3
M2	8.92	8.91	18.84	26.80	12.64	13.72	Beyond the range 6.6 to 11.0	Beyond the range 6.6 to 11.0
M3	9.16	9.15	1.00	1.00	1.10	1.18	Beyond the range 6.6 to 8.6	Beyond the range 6.6 to 8.7

Remark: For DO, action should be taken when monitoring result of either one of the surface, middle or bottom DO is lower than the proposed Action/Limit Levels.

# Appendix G Event/Action Plan

# Air Quality

		ACT	ΓΙΟΝ	
EVENT	ET	IEC	ER	CONTRACTOR
ACTION LEVEL				
1. Exceedance for one	1. Inform the Contractor, IEC	1. Check monitoring data	1. Confirm receipt of	1. Identify source(s),
sample	and ER;	submitted by the ET;	notification of exceedance	investigate the causes of
	2. Discuss with the	2. Check Contractor's	in writing.	exceedance and propose
	Contractor on the remedial	working method; and		remedial measures;
	measures required;	3. Review and advise the ET		2. Implement remedial
	3. Repeat measurement to	and ER on the effectiveness		measures; and
	confirm findings; and	of the proposed remedial		3. Amend working methods
	4. Increase monitoring	measures.		agreed with the ER as
	frequency.			appropriate.
2. Exceedance for two or	1. Inform the Contractor, IEC	1. Check monitoring data	1. Confirm receipt of	1. Identify source and
more consecutive samples	and ER;	submitted by the ET;	notification of exceedance	investigate the causes
	2. Discuss with the ER and	2. Check Contractor's	in writing;	of exceedance;
	Contractor on the remedial	working method; and	2. Review and agree on the	2. Submit proposals for
	measures required;	3. Review and advise the ET	remedial measures proposed	remedial measures to
	3. Repeat measurements to	and ER on the effectiveness	by the Contractor; and	the ER with a copy to
	confirm findings;	of the proposed remedial	3. Supervise implementation	ET and IEC within three
	4. Increase monitoring	measures.	of remedial measures.	working days of notification;
	frequency to daily;			3. Implement the agreed
	5. If exceedance continues,			proposals; and

	arrange meeting with the			4. Amend proposal as
	IEC, ER and Contractor; and			appropriate.
	6. If exceedance stops,			
	cease additional monitoring.			
LIMIT LEVEL				
Event	ET	IEC	ER	CONTRACTOR
1. Exceedance for one	1. Inform the Contractor,	1. Check monitoring data	1. Confirm receipt of	1. Identify source(s) and
sample	IEC, EPD and ER;	submitted by the ET;	notification of exceedance	investigate the causes
	2. Repeat measurement to	2. Check the Contractor's	in writing;	of exceedance;
	confirm findings;	working method;	2. Review and agree on the	2. Take immediate action to
	3. Increase monitoring	3. Discuss with the ET, ER	remedial measures proposed	avoid further exceedance;
	frequency to daily; and	and Contractor on possible	by the Contractor; and	3. Submit proposals for
	4. Discuss with the ER, IEC	remedial measures; and	3. Supervise implementation	remedial measures to ER
	and contractor on the	4. Review and advise the ER	of remedial measures.	with a copy to ET and IEC
	remedial measures and	and ET on the effectiveness		within three working days of
	assess the effectiveness.	of Contractor's remedial		notification;
		measures.		4. Implement the agreed
				proposals; and
				5. Amend proposal if
				appropriate.

	ET	IEC	ER	CONTRACTOR
2. Exceedance for two or	1. Notify Contractor, IEC, EPD	1. Check monitoring data	1. Confirm receipt of	1. Identify source(s) and
more consecutive samples	and ER;	submitted by the ET;	notification of exceedance	investigate the causes of
	2. Repeat measurement to	2. Check the Contractor's	in writing;	exceedance;
	confirm findings;	working method;	2. In consultation with the ET	2. Take immediate action
	3. Increase monitoring	3. Discuss with ET, ER, and	and IEC, agree with the	to avoid further exceedance;
	frequency to daily;	Contractor on the potential	Contractor on the remedial	3. Submit proposals for
	4. Carry out analysis of the	remedial measures; and	measures to be	remedial measures to the ER
	Contractor's working procedures	4. Review and advise the ER	implemented;	with a copy to the IEC and
	with the ER to determine	and ET on the effectiveness	3. Supervise the	ET within three working days
	possible mitigation to be	of Contractor's remedial	implementation of remedial	of notification;
	implemented;	measures.	measures; and	4. Implement the agreed
	5. Arrange meeting with the IEC		4. If exceedance continues,	proposals;
	and ER to discuss the remedial		consider what portion of the	5. Revise and resubmit
	measures to be taken;		work is responsible and	proposals if problem still not
	6. Review the effectiveness of		instruct the Contractor to	under control; and
	the Contractor's remedial		stop that portion of work	6. Stop the relevant portion
	measures and keep IEC, EPD		until the exceedance is	of works as determined by
	and ER informed of the results;		abated.	the ER until the exceedance
	and			is abated.
	7. If exceedance stops, cease			
	additional monitoring.			

# Noise

		ACTION									
EVENT	ET	IEC	ER	CONTRACTOR							
ACTION LEVEL	1. Notify the Contractor, IEC	1. Review the investigation	1. Confirm receipt of	1. Investigate the complaint							
	and ER;	results submitted by the	notification of complaint in	and propose remedial							
	2. Discuss with the ER and	Contractor; and	writing;	measures;							
	Contractor on the remedial	2. Review and advise the ET	2. Review and agree on the	2. Report the results of							
	measures required; and	and ER on the effectiveness	remedial measures proposed	investigation to the IEC, ET							
	3. Increase monitoring	of the remedial measures	by the Contractor; and	and ER;							
	frequency to check mitigation	proposed by the Contractor.	3. Supervise implementation	3. Submit noise mitigation							
	effectiveness.		of remedial measures.	proposals to the ER with							
				copy to the IEC and ET							
				within three working days of							
				notification; and							
				4. Implement noise mitigation							
				proposals.							
LIMIT LEVEL	1. Notify the Contractor, IEC,	1. Check monitoring data	1. Confirm receipt of	1. Identify source and							
	EPD and ER;	submitted by the ET;	notification of failure in	investigate the causes of							
	2. Repeat measurement to	2. Check the Contractor's	writing;	exceedance;							
	confirm findings;	working method;	2. In consultation with the ET	2. Take immediate action to							
	3. Increase monitoring	3. Discuss with the ER, ET	and IEC, agree with the	avoid further exceedance;							
	frequency;	and Contractor on the	Contractor on the remedial	3. Submit proposals for							
	4. Carry out analysis of	potential remedial measures;	measures to be	remedial measures to the ER							

Contractor's working	and	implemented;	with copy to the IEC and ET
procedures to determine	4. Review and advise the ET	3. Supervise the	within three working days of
possible mitigation to be	and ER on the effectiveness	implementation of remedial	notification;
implemented;	of the remedial measures	measures; and	4. Implement the agreed
5. Arrange meeting with the	proposed by the Contractor.	4. If exceedance continues,	proposals;
IEC and ER to discuss the		consider what portion of the	5. Revise and resubmit
remedial measures to be		work is responsible and	proposals if problem still not
taken;		instruct the Contractor to	under control; and
6. Review the effectiveness		stop that portion of work until	6. Stop the relevant portion
of Contractor's remedial		the exceedance is abated.	of works as determined by
measures and keep IEC,			the ER until the exceedance
EPD and ER informed of the			is abated.
results; and			
7. If exceedance stops,			
cease			

# Water Quality

		ACTION								
EVENT	ET Leader		IEC		ER		CONTRACTOR			
Action level being exceeded	•	Repeat in situ	•	Discuss with ET and	•	Discuss with IEC on the	•	Inform the ER and		
by one sampling day		measurement to		Contractor on the		proposed mitigation		confirm notification of		
		confirm findings;		mitigation measures;		measures;		the non-compliance in		
	•	Identify reasons for	•	Review proposals on	•	Make agreement on the		writing;		
		non-compliance and		mitigation measures		mitigation measures to	•	Rectify unacceptable		
		source(s) of impact;		submitted by		be implemented.		practice;		
	•	Inform IEC and		Contractor and advise	•	Assess the	•	Check all plant and		
		Contractor;		the ER accordingly;		effectiveness of the		equipment;		
	•	Check monitoring data,	•	Assess the		implemented mitigation	•	Consider changes of		
		all plant, equipment		effectiveness of the		measures.		working methods;		
		and Contractor's		Implemented mitigation			•	Discuss with ET and		
		working methods;		measures.				IEC and propose		
	•	Discuss mitigation						mitigation measures to		
		measures with IEC and						IEC and ER;		
		Contractor;					•	Implement the agreed		
	•	Repeat measurement						mitigation measures.		
		on next day of								
		exceedance.								

		ET Leader		IEC		ER		CONTRACTOR
Action level being exceeded	•	Repeat in situ	•	Discuss with ET and	•	Discuss with IEC on the	•	Inform the ER and
by more than one		measurement to		Contractor on the		proposed mitigation		confirm notification of
consecutive sampling day		confirm findings;		mitigation measures;		measures;		the non-compliance in
	•	Identify reasons for	•	Review proposals on	•	Make agreement on the		writing;
		non-compliance and		mitigation measures		mitigation measures to	•	Rectify unacceptable
		source(s) of impact;		submitted by		be implemented;		practice;
	•	Inform IEC and		Contractor and advise	•	Assess the	•	Check all plant and
		Contractor;		the ER accordingly;		effectiveness of the		equipment;
	•	Check monitoring data,	•	Assess the		implemented mitigation	•	Consider changes of
		all plant, equipment		effectiveness of the		measures.		working methods;
		and Contractor's		implemented mitigation			•	Discuss with ET and
		working methods;		measures.				IEC and propose
	•	Discuss mitigation						mitigation measures to
		measures with IEC and						IEC and ER within
		Contractor;						three working days;
	•	Ensure mitigation					•	Implement the agreed
		measures are						mitigation measures.
		implemented;						
	•	Prepare to increase the						
		monitoring frequency to						
		daily;						

	•	Repeat measurement on next day of exceedance.						
		ET Leader		IEC		ER		CONTRACTOR
Limit level being	•	Repeat in situ	•	Discuss with ET and	•	Discuss with IEC, ET	•	Inform the ER and
exceeded by one		measurement to		Contractor on the		and Contractor on the		confirm notification of
sampling day		confirm findings;		mitigation measures;		proposed mitigation		the non-compliance in
	•	Identify reasons for	•	Review proposals on		measures;		writing;
		non-compliance and		mitigation measures	•	Request Contractor to	•	Rectify unacceptable
		source(s) of impact;		submitted by		critically review the		practice;
	•	Inform IEC Contractor		Contractor and advise		working methods;	•	Check all plant and
		and EPD;		the ER accordingly;	•	Make agreement on the		equipment;
	•	Check monitoring data,	•	Assess the		mitigation measures to	•	Consider changes of
		all plant, equipment		effectiveness of the		be implemented;		working methods;
		and Contractor's		implemented mitigation	•	Assess the	•	Discuss with ET, IEC
		working methods;		measures.		effectiveness of the		and ER and propose
	•	Discuss mitigation				implemented mitigation		mitigation measures to
		measures with IEC, ER				measures.		IEC and ER within
		and Contractor;						three working days;
	•	Ensure mitigation					•	Implement the agreed
		measures are						mitigation measures.
		implemented;						

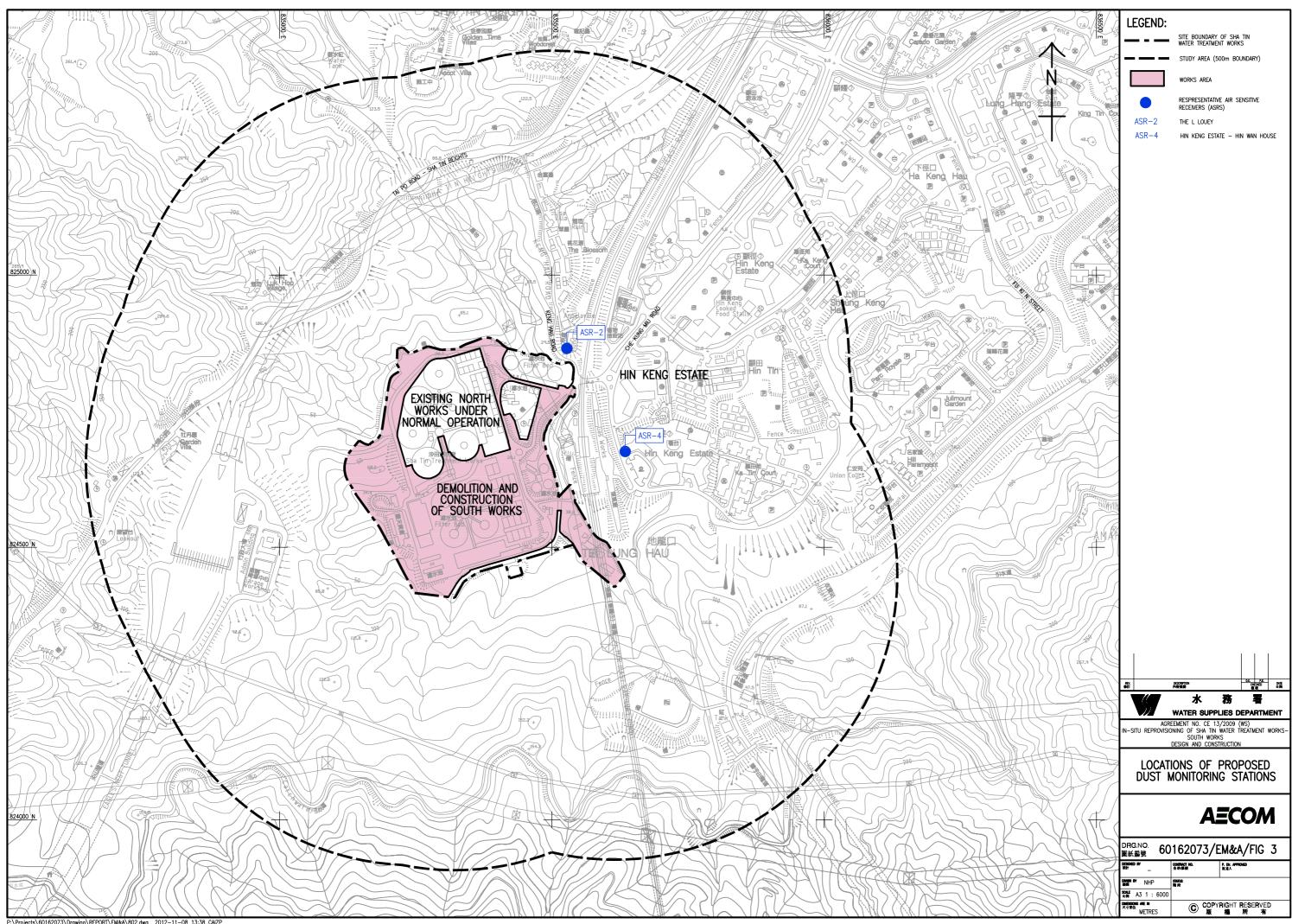
	•	Increase the monitoring frequency to daily until no exceedance of Limit						
		ET Leader		IEC		ER		CONTRACTOR
Limit level being	•	Repeat in situ	•	Discuss with ET and	•	Discuss with IEC, ET	•	Inform the ER and
exceeded by more		measurement to		Contractor on the		and Contractor on the		confirm notification of
than one		confirm findings;		mitigation measures;		proposed mitigation		the non-compliance in
consecutive	•	Identify reasons for	•	Review proposals on		measures;		writing;
sampling day		non-compliance and		mitigation measures	•	Request Contractor to	•	Rectify unacceptable
		source(s) of impact;		submitted by		critically review the		practice;
	•	Inform IEC Contractor		Contractor and advise		working methods;	•	Check all plant and
		and EPD;		the ER accordingly;	•	Make agreement on the		equipment;
	•	Check monitoring data,	•	Assess the		mitigation measures to	•	Consider changes of
		all plant, equipment		effectiveness of the		be implemented;		working methods;
		and Contractor's		implemented mitigation	•	Assess the	•	Discuss with ET, IEC
		working methods;		measures.		effectiveness of the		and ER and propose
	•	Discuss mitigation				implemented mitigation		mitigation measures to
		measures with IEC, ER				measures;		IEC and ER within
		and Contractor;			•	Consider and instruct, if		three working days;
	•	Ensure mitigation				necessary, the	•	Implement the agreed
		measures are				Contractor to slow		mitigation measures;

implemented; Increase	down or to stop all or	• As directed by the ER,
the monitoring	part of the construction	to slow down or to stop
frequency to daily until	activities until no	all or part of the
no exceedance of Limit	exceedance of Limit	construction activities.
level for two	level.	
consecutive days.		

### Appendix H Impact Monitoring Schedules

			Impact Monitoring Schedule for	STWTW		
<u>Sum</u>	IMor		Jul-23	ITh		Cat
Sun	Mon	Tue	Wed	Thu	Fri	Sat
			-			
2	3	4	5	6	7	8
	Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3		Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3	Impact Air monitoring for AM1 & AM2 Noise monitoring for NM1, NM2 & NM3	Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3	
9	10	11	12	13	14	15
	Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3		Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3 Air monitoring for AM1 & AM2 Noise monitoring for NM1, NM2 & NM3		Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3	
16	17	18	19	20	21	22
	Typhoon Signal No.8	Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3 Air monitoring for AM1 & AM2 Noise monitoring for NM1, NM2 & NM3		Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3		Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3
23	24	25	26	27	28	29
	Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3 Air monitoring for AM1 & AM2 Noise monitoring for NM1, NM2 & NM3		Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3		Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3	Impact Air monitoring for AM1 & AM2 Noise monitoring for NM1, NM2 & NM3
30	31					
	Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3					

### Appendix I Location Plan of Air Quality Monitoring Station



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# Appendix J Calibration Certificates (Air Monitoring)





This instrument was produced under rigorous factory production control and documented standard procedures. It was individually visually inspected, leak tested and function tested for display, backlight, button and software performance. The accuracy of each of its primary measurements was individually calibrated and/or tested against standards traceable to the National Institute of Standards and Technology ("NIST") or calibrated intermediary standards. This instrument is certified to have performed at the time of manufacture in compliance with the following specifications as they apply to this meter's specific model, measurements and features.

### Methods Used in Calibration and Testing

#### Wind Speed:

The Kestrel Pocket Weather Meter impeller installed in this unit was individually tested in a subsonic wind tunnel operating at approximately 300 fpm (1.5 m/s) and 1200 fpm (6.1 m/s) monitored by a Gill Instruments Model 1350 ultrasonic time-of-flight anemometer. The Standard's maximum combined uncertainty is +/-1.04%within the airspeed range 706.6 to 3923.9 fpm (3.59 to 19.93 m/s), and +/-1.66% within the airspeed range 166.6 to 706.6 fpm (0.85 to 3.59 m/s).

#### **Temperature:**

Temperature response is verified in comparison with a Eutechnics 4600 Precision Thermometer or a standard Kestrel 4000 Weather and Environmental Meter calibrated weekly against the Eutechnics 4600. The Eutechnics 4600 is calibrated annually and is traceable to NIST with a system accuracy of +/-0.05 °C.

#### **Direction / Heading**

The sensitivity of the magnetic directional sensor is verfied at the component level by applying a magnetic field to the sensor and measuring the signal output at 4 points, as well as after assembly by orienting the unit to the cardinal directions and measuring the magnetic field output. In both cases the compass output must be accurate to within  $\pm -5$  degrees.

#### **Relative Humidity:**

Relative humidity receives a two-point calibration in humidity and temperature controlled chambers at 75.3% RH and 32.8% RH at 25° C. The calibration tanks are monitored with an Edgetech Model 2002 DewPrime II Standard Chilled Mirror Hygrometer. Following calibration, performance is further verified at an RH of approximately 43.2% against the Edgetech Hygrometer. The Edgetech Hygrometer is calibrated annually and is traceable to NIST with a maximum relative expanded uncertainty of +/- 0.2% RH.

#### **Barometric Pressure:**

Pressure response is verified against a Mensor Series 6000 Digital Barometer or a standard Kestrel 4000 Weather and Environmental Meter calibrated weekly against the Mensor Barometer. The Mensor Barometer is calibrated annually and is traceable to NIST with a maximum relative expanded uncertainty of +/- 0.02% F.S.

Approved By:

Michael Naughton, Engineering Manager

The enclosed Kestrel Weather and Environmental Meter was manufactured by Nielsen-Kellerman Co. at its facilities located at 21 Creek Circle, Boothwyn, PA 19061 USA.

															SENSO	RS		
SENSOR	1000	2000	2500	3000	3500	3500	4000	4200	4250	4300	4400	4500	4500	ACCURACY (+/-)*	RESOLUTION	SPECIFICATION RANGE	OPERATIONAL RANGE	NOTES
Wind Speed   Air Flow	•	•	•	•	•	•	•	•	•	•	•	•	•	Larger of 3% of reading, least significant digit or 20 ft/min	0.1 m/s 1 ft/min 0.1 km/h 0.1 kmots 1 B	0.6 to 40.0 m/s 118 to 7,874 ft/min 2.2 to 144.0 km/h 1.3 to 89.5 mph 1.2 to 77.8 knots 0 to 12 B	0.6 to 60.0 m/s 118 to 11,811 ft/min 2.2 to 216.0 km/h 1.3 to 134.2 mph 1.2 to 116.6 kmots 0 to 12 B	1 inch/25 mm diameter impeler with precision axie and low-friction Zytel8 bearings. Startup s statud as sover imit, readings may be taken down to 04 mm (7 Britmin 11 Shrmh 1 Bryth). Effort impeler statud as 04 mm (2 Britmin 11 Shrmh 1 Bryth). Effort and an axis and the method instantion (2 Brain as accuracy in the 30 mm (2 Brain 2 Brain
Ambient Temperature	V	•	•	•	•	•	•	•	•	•		•	•	0.9 *F 0.5 *C	0.1 *F 0.1 *C	-20.0 to 158.0 *F -29.0 to 70.0 *C	14.0.0 to 131.0 "F -10.0 to 55.0 "C	Hermelically-seaked, precision thermitor mounted externally and thermally licelated (US Paik 5.936.645) for rapidr response. Altificior 0.2 mpc/1 mm or greater provide fattest response exaction of molecular offset. C alternal on thregidging. Thermater may also be used to may be used to make the second seco
Globe Temperature - Tg								-			•			*F 1.4 *C	0.1 *F 0.1 *C	-20.0 to 140.0 °F -29.0 to 60.0 °C	14.0 to 131.0 *F -10.0 to 55.0 *C	Temperature inside 1in 25 mm black powder coated copper globe converted to Tg equivalent standard 6 in 150 mm globe. Closest equivalence obtained with airflow greater than 2.2 mph m/s.
Relative Humidity				•	•	•	•	•	•	•	•	•	•	3.0 %RH	0.1 %RH	5 to 95% non-condensing	0 to 100%	Polymer capacitive humidity sensor mounted in thin-walled chamber external to case for rapic accurate response (US Plante 6.257 2074). To achieve stated accuracy, unit mat be permit equilibrate to activate la Imprature wall encoursed to large, rapid temperature dranges and b out of direct sunight. California of the -2% over 24 months. Humidity sensor may be recall at factory or in fault using Kastel Humiding California for (MR PH-0602).
Pressure	1	-01	•	14	•	•	•		•	•		•	•	0.03 inHg 1.0 hPaImbar 0.01 PSI	0.01 inHg 0.1 hPajmbar 0.01 PSI	8.86 to 32.49 inHg 300.0 to 1100.0 hPajmbar 4.35 to 15.95 PSI and 32.0 to 185.0 *F 0.0 to 85.0 *C	0.30 to 48.87 in Hg 10.0 to 1654.7 h Palmbar 0.14 to 24.00 PSI and 14.0 to 131.0 °F -10.0 to 55.0 °C	Monothics sillion piecewsitely pressure sensor with second order temperature controllon- Pressure sensor may be nearbitrated at tochyo in field. Adjustable reference attubus also display of tation pressure on anometric pressure connected to MSL. Kestini 4.200 display attation pressure on addicated screen. Restriet 2000 and 3000 display continuously update three-hour barometric pressure trend indicator: main graphy, ning, steady, falling, falling na kestitel 4000 estes displays on sexite tend frough graphing function. PSI display on Kestite
Compass		153						1919 1-1-1-1				•	•	5*	1* 1/16th Cardinal Scale	0 to 360*	0 to 360°	400 series only. 2-axis sole-state magnetoresistive sensor mounted perpendicular to unit plane. Accuracy of sensor dependent upon unit's vertical populion. Self-aultication routine eliminates imagnetic en from bittines or unit anomato te un after every full power-down (bittiney removal or change increation). Declarationariation advatable for Time North read-unit.
						18								CALCUL		SUREMENTS		
MEASUREMENT	1000	2000	2500	3000	3500	3500 DT	4000	4200	4250	4300	4400	4500	4500 HOR	ACCURACY (+/-)*	RESOLUTION	SPECIFICATION RANGE	SENSORS EMPLOYED	NOTES
Air Density	1	-	1		123	Y	1	•	•		13	31	3.23	0.0002 lb/tt <sup>3</sup> 0.0033 kg/m <sup>3</sup>	0.001 lbs/ft <sup>3</sup> 0.001 kg/m <sup>3</sup>	Refer to Ranges for Sensors Employed	Temperature Relative Humidity Pressure	Mass of air per unit volume
Air Flow								•	-					6.71%	1 cfm 1 m <sup>3</sup> /hr 1 m <sup>3</sup> /m 0.1m <sup>3</sup> /s 1 L/s	Refer to Ranges for Sensors Employed	Air Flow User Input (Duct Shape & Size)	Volume of air flowing through an opening. Automatically calculated from Air Velocity measure and user-specified duct shape (circle or rectangle) and dimensions (units, in ft, cm or m). Maximum duct dimension input: 258.0 in   21.5 ft   655.3 cm   6.35 m.
Altitude			•		•	•	•	•	•	•	•	•	•	typical: 23.6 ft 7.2 m max: 48.2 ft 14.7 m	1 ft 1 m	typical: 750 to 1100 mBar max: 300 to 750 mBar	Pressure User Input (Reference Pressure)	Height above Mean Sea Level ("MSL"). Temperature compensated pressure (barometric) altimeter requires accurate reference barometric pressure to produce maximum absolute accuracy. Both accuracy specs corresponds to a reference pressure anywhere from 850 to mBar.
Barometric Pressure			•		•	•	•	•	•	•	•	•	•	0.07 inHg 2.4 hPa mbar 0.03 PSI	0.01 inHg 0.1 hPa mbar 0.01 PSI	Refer to Ranges for Sensors Employed	Pressure User Input (Reference Altitude)	Air pressure that would be present in identical conditions at MSL. Station pressure compensation local elevation provided by reference abitude. Requires accurate reference abitude to pro maximum absolute accuracy.
Crosswind & Headwind/Tailwind											rin		•	7.1%	1 mph 1 ft/min 0.1 km/h 0.1 m/s 0.1 knots	Refer to Ranges for Sensors Employed	Wind Speed Compass	Effective wind relative to a target or travel direction. Auto-switching headwindtailwind indicate
Delta T	18		an		an	•							ins	3.2 *F 1.8 *C	0.1 *F 0.1 *C	Refer to Ranges for Sensors Employed	Temperature Relative Humidity Pressure	Difference between dry bulb temperature and wet bulb temperature. When spraying, indicate evaporation rate and droplet lifetime. Safe range for pesticide spraying is 4 to 16 $^{\circ}$ / 2 to 9 $^{\circ}$
Density Altitude							•	•	•	•	•	•	•	226 ft 69 m	1 ft 1 m	Refer to Ranges for Sensors Employed	Temperature Relative Humidity Pressure	Local air density converted to equivalent elevation above sea level in a uniform layer consisti the International Standard Atmosphere.
Dewpoint				•	•	•	•	•	•		•	•	•	3.4 *F 1.9 *C	0.1 *F 0.1 *C	15 to 95 % RH Refer to Range for Temperature Sensor	Temperature Relative Humidity	Temperature that a volume of air must be cooled to at constant pressure for the water vapor present to condense into dew and form on a solid surface. Can also be considered to be the water-to-air saturation temperature.
Evaporation Rate										•				0.01 lb/ft <sup>2</sup> /hr 0.06 kg/m2/hr	0.01 b/ft²/hr 0.01 kg/m²/hr	Refer to Ranges for Sensors Employed	Wind Speed Temperature Relative Humidity Pressure User Input (Concrete Temperature)	The rate at which moleture is lost from the surface of curing concrete. Requires user measurement and entry of concrete temperature obtained with an accurate IR or probe thermometer ("F or "C, not included). Readings should be taken 20 inches above pour surfac with the thermiser braked, and averaged for 5-10 seconds using built-in waveraging function.
Heat Index		121	•	1.	•	1231	•	•	•	•	•	•	•	7.1 *F 4.0 *C	0.1 *F 0.1 *C	Refer to Ranges for Sensors Employed	Temperature Relative Humidity	Perceived temperature resulting from the combined effect of temperature and relative humidit Calculated based on NVNS Heat Index (HI) tables. Measurement range limited by extent of published tables.
Moisture Content   Humidity Ratio ("Grains")								•	•					.3 gpp .04 g/kg	0.1 gpp 0.01 g/kg	Refer to Ranges for Sensors Employed	Temperature Relative Humidity Pressure	Mass of water vapor in a mass of air.
Relative Air Density									•					0.3%	0.1%	Refer to Ranges for Sensors Employed	Temperature Relative Humidity Pressure	The ratio, expressed as a percentage, of measured air density to the air density of a standard atmosphere as defined by the ICAO.
Thermal Work Limit (TWL)														10.9 W/m <sup>2</sup>	0.1 W/m <sup>2</sup>	Refer to Ranges for Sensors Employed	Wind Speed Temperature Giobe Temperature Relative Humidity Pressure	Estimated safe maximum continuously sustainable human metabolic rate (Wim2) for the conditions and clothing factors. Based off of estimated metabolic output of typical human. On screen zone warnings.
Outdoor Wet Bulb Globe Temperature (WBGT)											•			1.3 °F 0.7 °C	0.1 *F 0.1 *C	Refer to Ranges for Sensors Employed	Wind Speed Temperature Globe Temperature Relative Humidity Pressure	Measure of human heat stress defined as the combination of effects due to radiation, convec and conduction. Outdoor WBGT is calculated from a weighted sum of natural wet bub (Triwb) globe temperature (Tg), and dry bub temperature (Td). User settable on-screen warning zone
Wet Bulb Temperature - aturally Aspirated (Tnwb)					23	112	18	3. "F	) 11	936)	•	101		1.4 *F 0.8 *C	0.1 *F 0.1 *C	Refer to Ranges for Sensors Employed	Wind Speed Temperature Globe Temperature Relative Humidity Pressure	Similar to psychrometric web-bub temperature (see below). However, Trub only undergoes for convection from the ambient air velocity. Trub is a measure of the evaporative cooling that th will allow. This is accounted for by combining the effects of, mainly, relative humidity and windspeed.
Wet Bulb Temperature - Psychrometric					•	•	•		•	•	•	•	•	3.2 °F 1.8 °C	0.1 *F 0.1 *C	Refer to Ranges for Sensors Employed	Temperature Relative Humidity Pressure	Temperature indicated by a sling psychrometer. Due to nature of the psychrometric ratio for water-air system, this approximates the thermodynamic wei-bub temperature. The thermodyn wei-bub temperature is the temperature a parcel of air would have if cooled adiabatically to saturation temperature via water evaporating into it.
Wind Chill		•			•		•	•		•	•	•	•	1.6 *F 0.9 *C	0.1 *F 0.1 *C	Refer to Ranges for Sensors Employed	Wind Speed Temperature	Perceived temperature resulting from combined effect of wind speed and temperature. Calcul based on the NWS Wind Chill Temperature (WCT) Index, revised 2001, with wind speed adju by a factor of 1.5 to yield equivalent results to wind speed measured at 10 m above ground. Measurement range limited by extern of published tables.
																CIFICATIONS		
Display & Backlight		•	•								AND CONTRACTOR	CONT.		Reflective 5 digit LCD. D	Digit height 0.36 in / 9 r	nm. Choice of aviation green of	iuminescent backlight. Manual activation or visible red (NV models only) electrol	uminescent backlight. Manual activation with auto-off.
Response Time & Display Update	•	•	•	•	•	•	•	•	•	•	•	•		All measurements except equilibrate to a large cha	ot those based on relations in the measurements of		ly within 1 second. Relative humidity a tes every 1 second.	viectroluminescent backlight. Automatic or manual activation. nd all measurements which include RH in their calculation may require as long as 1 minute to ful
Max/Avg Wind			-				•	•	•	•	•	•	•					with all other wind-related functions: air velocity, crosswind, headwind/tailwind, wind chill, WBGT
Data Storage & Graphical Display, Min/Max/Avg History										• 3600 points			• 2500	Minimum, maximum, ave				ta logger with graphical display. Mariual and auto data storage. Min/Max/Avg history may be res y off except for 2 and 5 second intervals (code version 4.18 and later). Data capacity shown.
ata Upload & Bluetooth® Data Connect Option								•	•	•	•	•		Bluetooth Data Trans pairing and transmitting.	fer Option: Adjustabl Employs Bluetooth Se	32) or Bluetooth data transfer e power consumption and radi rial Port Protocol for data tran 32) or Bluetooth data transfer	io range from up to 30 ft   9 meters. In smission.	sividual unit ID and 4-digit PIN code preprogrammed for easy identification and data security whe
Clock / Calendar					•		•	•			•	•		Requires optional PC int	erface (USB or RS-23	<ol> <li>or Bluetooth data transfer</li> <li>or Bluetooth data transfer</li> <li>or Bluetooth data transfer</li> </ol>	option and provided software.	Western refer to the transfer of
Auto Shutdown Languages							•	•	*	*	•	•		Requires optional PC int English, French, German	erface (USB or RS-23 n, Italian, Spanish.	32) or Bluetooth data transfer	option and provided software.	
Certifications Origin	•	*	*	*	*	•	*	•	•		•	•		CE certified, RoHS and Designed and manufact	WEEE compliant. Inde ured in the USA from U	JS and imported components.		ts available at additional charge). t and Tariff Code Transformation requirements for NAFTA Preference Criterion B.
Battery Life	•	•	•	•	•	•	•				•	•		Standard Models: AA	A Alkaline, two, include	d. Average life, 400 hours of u	klight use in 2000 to 3500 models. use, reduced by backlight or Bluetooth	radio transmission use.
Shock Resistance Sealing	•	•	•		•	•	•	•	•	•	•	•		Waterproof (IP67 and N	EMA-6).		t may damage replaceable impeller.	nge of the display and batteries by maintaining the unit within the operational range and exposin
Operational Temperature Limits Storage Temperature	*	•	•	•	*	*	*	*	*	•	•	*		14" F to 131" F   -10 "C to the more extreme env -22.0 "F to 140.0 "F   -3	ironment for the minim	nts may be taken beyond the li num time necessary to take rea	ading.	nge or one weavery and batteries by maintaining, the unit within the operational range and exposin
atorage remperature		•	•				-		-		-	-		4.8 x 1.9 x 1.1 in / 12.2 >	4.8 x 2.8 cm, 3.6 oz /	102 g (including slip-on cover)	).	
Size & Weight														5.0 x 1.8 x 1.1 in / 12.7 x	45x28 m 20	102 g		

Please note, these specifications are valid for all Kestrel 4400 products and all other Kestrel 4000 series with a serial number higher than 659340. If your product has a lower serial number, please reference the previous version of the specifications.





#### PC-3A(E) K-Factor Verification Test by Total Suspended Particulates HVS Test Report

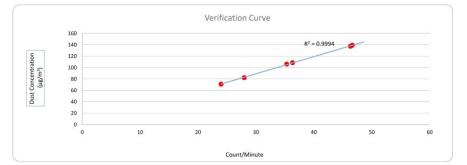
#### Information of Calibrated Equipement

Verification Test Date:	1-Mar-23	to	2-Mar-23	Next Verification Test Date:	2-Mar-24
Unit-under-Test- Model No.:		PC-3A(E)			
Unit-under-Test Serial No.:		JC-2002223	3		
Our Report Refrence No.:	R	PT-23-HVS-00	948		
Calibration Location:			Emax		

1	Verification Equipment Type:	Tisch TSP HVS	Tisch HVS Calibrator	
	Standard Equipment Model No.:	TE-5170X	TE-5025A	
	Equipment serial no.:	1049	3465	
	Last Calibration Date:	1-Mar-23	28-Jun-22	
	Next Calibration Date:	30-Apr-23	27-Jun-23	

Verification			Duration		Results from C	Calibrated Equipement	<b>Results from Standard Equipment</b>		
Test No.	Date	Start-time	End-time	Elapsed Time (in min)	Total Counts	Counts/ Minute x-axis	Dust Concentration (μg/m <sup>3</sup> ) y-axis		
1	1/3/2023	5013.27	5016.34	184.20	8596	47	139		
2	1/3/2023	5016.34	5019.34	180.00	6540	36	109		
3	1/3/2023	5019.34	5022.34	180.00	8340	46	137		
4	2/3/2023	5022.34	5025.34	180.00	5040	28	82		
5	2/3/2023	5025.34	5028.34	180.00	4320	24	71		
6	2/3/2023	5028.34	5031.34	180.00	6360	35	106		

		Linear Regre	ession of y o	on x	
Slope, K factor:	3.0065	Intercept:	-1.1293	*Correlation Coefficient,R:	0.9997
Verification Test Result: S	trong Correlation, Res	ults were accepted.	* If	the Correlation Coefficient, R is <0.5. Checkin	g and Re-verification are required



Operated By:

Andy Li Project Technician, Environmental

Date: 02-03-2023

Tandy Tse Wight Senior Consultant, Environmental

Date: 02-03-2023

Checked By:





#### PC-3A(E) K-Factor Verification Test by Total Suspended Particulates HVS Test Report

#### Information of Calibrated Equipement

Verification Test Date:	8-Apr-23	to	9-Apr-23		Next Verification Test Date:	8-Apr-24	
Unit-under-Test- Model No.:		PC-3A(E)					
- Unit-under-Test Serial No.:		JC-2105804					
- Our Report Refrence No.:	RI	PT-23-HVS-00	)32				
_ Calibration Location:				Emax			

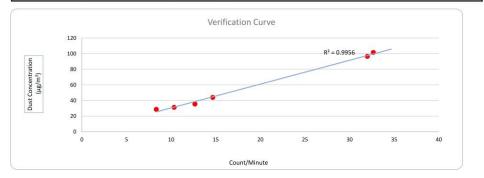
22		Standard Equipment Informa	tion	
	Verification Equipment Type:	Tisch TSP HVS	Tisch HVS Calibrator	
	Standard Equipment Model No.:	TE-5170X	TE-5028A	
	Equipment serial no.:	1049	3702	
	Last Calibration Date:	8-Apr-23	31-Mar-23	
	Next Calibration Date:	7-Jun-23	30-Mar-24	

Verification			Duration		Results from C	alibrated Equipement	Results from Standard Equipment
Test No.	Date	Start-time	End-time	Elapsed Time (in min)	Total Counts	Counts/ Minute x-axis	Dust Concentration (μg/m³) y-axis
1	8/4/2023	7339.85	7342.85	180.00	2640	15	44
2	8/4/2023	7342.85	7345.85	180.00	2280	13	36
3	8/4/2023	7345.85	7348.85	180.00	5760	32	97
4	9/4/2023	7349.74	7352.74	180.00	1500	8	29
5	9/4/2023	7352.76	7355.76	180.00	1860	10	31
6	9/4/2023	7355.77	7358.77	180.00	5880	33	102

#### Linear Regression of y on x

 Slope, K factor:
 3.0528
 Intercept:
 -0.0510
 \*Correlation Coefficient,R:
 0.9978

 Verification Test Result:
 Strong Correlation, Results were accepted.
 \* If the Correlation Coefficient, R is <0.5. Checking and Re-verification are required.</td>



Operated By:

Andy Li Project Technician, Environmental

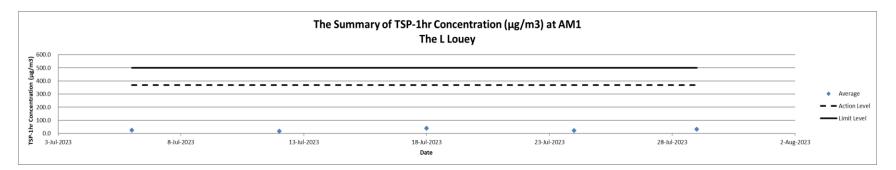
Date: 10-04-2023

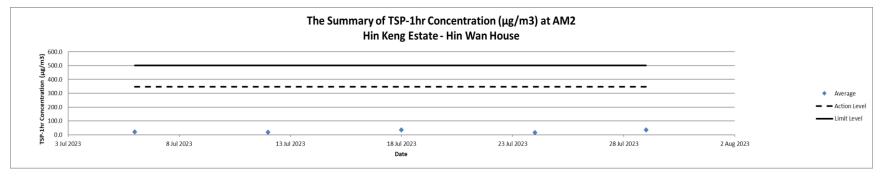
414 Tandy Tse Mary Senior Consultant, Environmenta

Checked By:

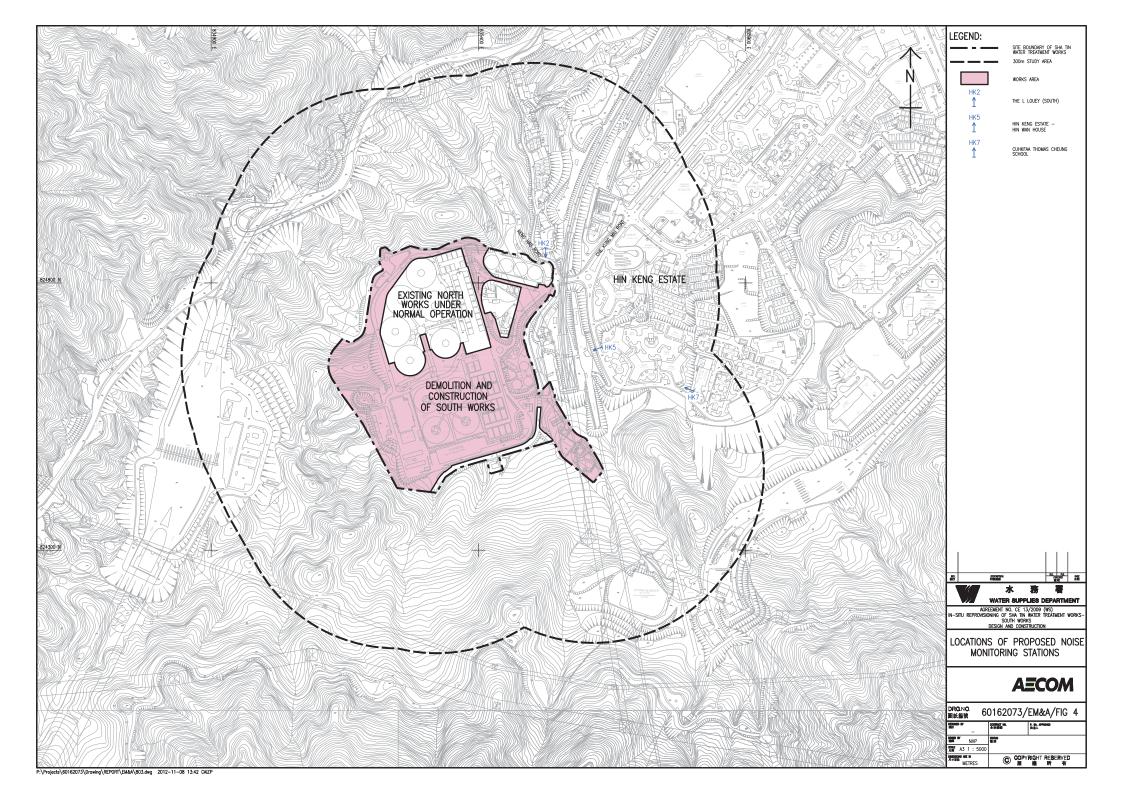
Date: \_\_\_\_\_10-04-2023

# Appendix K Impact Air Quality Monitoring Results and Graphical Presentation





### Appendix L Location Plan of Noise Monitoring Station



### Appendix M Calibration Certificates (Noise)





This instrument was produced under rigorous factory production control and documented standard procedures. It was individually visually inspected, leak tested and function tested for display, backlight, button and software performance. The accuracy of each of its primary measurements was individually calibrated and/or tested against standards traceable to the National Institute of Standards and Technology ("NIST") or calibrated intermediary standards. This instrument is certified to have performed at the time of manufacture in compliance with the following specifications as they apply to this meter's specific model, measurements and features.

### Methods Used in Calibration and Testing

#### Wind Speed:

The Kestrel Pocket Weather Meter impeller installed in this unit was individually tested in a subsonic wind tunnel operating at approximately 300 fpm (1.5 m/s) and 1200 fpm (6.1 m/s) monitored by a Gill Instruments Model 1350 ultrasonic time-of-flight anemometer. The Standard's maximum combined uncertainty is +/-1.04%within the airspeed range 706.6 to 3923.9 fpm (3.59 to 19.93 m/s), and +/-1.66% within the airspeed range 166.6 to 706.6 fpm (0.85 to 3.59 m/s).

#### **Temperature:**

Temperature response is verified in comparison with a Eutechnics 4600 Precision Thermometer or a standard Kestrel 4000 Weather and Environmental Meter calibrated weekly against the Eutechnics 4600. The Eutechnics 4600 is calibrated annually and is traceable to NIST with a system accuracy of +/-0.05 °C.

#### **Direction / Heading**

The sensitivity of the magnetic directional sensor is verfied at the component level by applying a magnetic field to the sensor and measuring the signal output at 4 points, as well as after assembly by orienting the unit to the cardinal directions and measuring the magnetic field output. In both cases the compass output must be accurate to within  $\pm -5$  degrees.

#### **Relative Humidity:**

Relative humidity receives a two-point calibration in humidity and temperature controlled chambers at 75.3% RH and 32.8% RH at 25° C. The calibration tanks are monitored with an Edgetech Model 2002 DewPrime II Standard Chilled Mirror Hygrometer. Following calibration, performance is further verified at an RH of approximately 43.2% against the Edgetech Hygrometer. The Edgetech Hygrometer is calibrated annually and is traceable to NIST with a maximum relative expanded uncertainty of +/- 0.2% RH.

#### **Barometric Pressure:**

Pressure response is verified against a Mensor Series 6000 Digital Barometer or a standard Kestrel 4000 Weather and Environmental Meter calibrated weekly against the Mensor Barometer. The Mensor Barometer is calibrated annually and is traceable to NIST with a maximum relative expanded uncertainty of +/- 0.02% F.S.

Approved By:

Michael Naughton, Engineering Manager

The enclosed Kestrel Weather and Environmental Meter was manufactured by Nielsen-Kellerman Co. at its facilities located at 21 Creek Circle, Boothwyn, PA 19061 USA.

															SENSO	RS		
SENSOR	1000	2000	2500	3000	3500	3500	4000	4200	4250	4300	4400	4500	4500	ACCURACY (+/-)*	RESOLUTION	SPECIFICATION RANGE	OPERATIONAL RANGE	NOTES
Wind Speed   Air Flow	•	•	•	•	•	•	•	•	•	•	•	•	•	Larger of 3% of reading, least significant digit or 20 ft/min	0.1 m/s 1 ft/min 0.1 km/h 0.1 kmots 1 B	0.6 to 40.0 m/s 118 to 7,874 ft/min 2.2 to 144.0 km/h 1.3 to 89.5 mph 1.2 to 77.8 knots 0 to 12 B	0.6 to 60.0 m/s 118 to 11,811 ft/min 2.2 to 216.0 km/h 1.3 to 134.2 mph 1.2 to 116.6 kmots 0 to 12 B	1 inch/25 mm diameter impeler with precision axie and low-friction Zytel8 bearings. Startup s statud as sover imit, readings may be taken down to 04 mm (7 Britmin 11 Shrmh 1 Bryth). Effort impeler statud as 04 mm (2 Britmin 11 Shrmh 1 Bryth). Effort and an axis and the method instantion (2 Brank as cause) and (2 Brank as cause).
Ambient Temperature	V	•	•	•	•	•	•	•	•	•	•	•	•	0.9 *F 0.5 *C	0.1 *F 0.1 *C	-20.0 to 158.0 *F -29.0 to 70.0 *C	14.0.0 to 131.0 "F -10.0 to 55.0 "C	Hermelically-seaked, precision thermitor mounted externally and thermally licelated (US Paik 5.936.645) for rapidr response. Altificior 0.2 mpc/1 mm or greater provide fattest response exaction of molecular offset. C alternal on thregidging. Thermater may also be used to may be used to make the second seco
Globe Temperature - Tg								-			•			*F 1.4 *C	0.1 *F 0.1 *C	-20.0 to 140.0 °F -29.0 to 60.0 °C	14.0 to 131.0 *F -10.0 to 55.0 *C	Temperature inside 1in 25 mm black powder coated copper globe converted to Tg equivalent standard 6 in 150 mm globe. Closest equivalence obtained with airflow greater than 2.2 mph m/s.
Relative Humidity				•	•	•	•	•	•	•	•	•	•	3.0 %RH	0.1 %RH	5 to 95% non-condensing	0 to 100%	Polymer capacitive humidity sensor mounted in thin-walled chamber external to case for rapic accurate response (US Plante 6.257 2074). To achieve stated accuracy, unit mat be permit equilibrate to activate la Imprature wall en exposed to large, rapid temperature damps and b out of direct sunight. California of the -2% over 24 months. Humidity sensor may be recall at factory or in fault using Kastel Humiding California for (MR PH-0602).
Pressure	1	-01	•	14	•	•	•		•	•		•	•	0.03 inHg 1.0 hPaImbar 0.01 PSI	0.01 inHg 0.1 hPajmbar 0.01 PSI	8.86 to 32.49 inHg 300.0 to 1100.0 hPajmbar 4.35 to 15.95 PSI and 32.0 to 185.0 *F 0.0 to 85.0 *C	0.30 to 48.87 in Hg 10.0 to 1654.7 h Palmbar 0.14 to 24.00 PSI and 14.0 to 131.0 °F -10.0 to 55.0 °C	Monothics sillion piecewsitely pressure sensor with second order temperature controllon- Pressure sensor may be nearbitrated at tochyo in field. Adjustable reference attubus also display of tation pressure on anometric pressure connected to MSL. Kestini 4.200 display attation pressure on addicated screen. Restriet 2000 and 3000 display continuously update three-hour barometric pressure trend indicator: main graphy, ning, steady, falling, falling na kestitel 4000 estes displays on sexite tend frough graphing function. PSI display on Kestite
Compass		153						1919 1-1-1-1				•	•	5*	1* 1/16th Cardinal Scale	0 to 360*	0 to 360°	400 series only. 2-axis sole-state magnetoresistive sensor mounted perpendicular to unit plane. Accuracy of sensor dependent upon unit's vertical populion. Self-aultication routine eliminates imagnetic en from bittines or unit anomato te un after every full power-down (bittiney removal or change increation). Declarationariation advatable for Time North read-unit.
						18								CALCUL		SUREMENTS		
MEASUREMENT	1000	2000	2500	3000	3500	3500 DT	4000	4200	4250	4300	4400	4500	4500 HOR	ACCURACY (+/-)*	RESOLUTION	SPECIFICATION RANGE	SENSORS EMPLOYED	NOTES
Air Density	1	-	1		123	Y	1	•	•		13	31	3.23	0.0002 lb/tt <sup>3</sup> 0.0033 kg/m <sup>3</sup>	0.001 lbs/ft <sup>3</sup> 0.001 kg/m <sup>3</sup>	Refer to Ranges for Sensors Employed	Temperature Relative Humidity Pressure	Mass of air per unit volume
Air Flow								•	-					6.71%	1 cfm 1 m <sup>3</sup> /hr 1 m <sup>3</sup> /m 0.1m <sup>3</sup> /s 1 L/s	Refer to Ranges for Sensors Employed	Air Flow User Input (Duct Shape & Size)	Volume of air flowing through an opening. Automatically calculated from Air Velocity measure and user-specified duct shape (circle or rectangle) and dimensions (units, in ft, cm or m). Maximum duct dimension input: 258.0 in   21.5 ft   655.3 cm   6.35 m.
Altitude			•		•	•	•	•	•	•	•	•	•	typical: 23.6 ft 7.2 m max: 48.2 ft 14.7 m	1 ft 1 m	typical: 750 to 1100 mBar max: 300 to 750 mBar	Pressure User Input (Reference Pressure)	Height above Mean Sea Level ("MSL"). Temperature compensated pressure (barometric) altimeter requires accurate reference barometric pressure to produce maximum absolute accuracy. Both accuracy specs corresponds to a reference pressure anywhere from 850 to mBar.
Barometric Pressure			•		•	•	•	•	•	•	•	•	•	0.07 inHg 2.4 hPa mbar 0.03 PSI	0.01 inHg 0.1 hPa mbar 0.01 PSI	Refer to Ranges for Sensors Employed	Pressure User Input (Reference Altitude)	Air pressure that would be present in identical conditions at MSL. Station pressure compensation local elevation provided by reference abitude. Requires accurate reference abitude to pro maximum absolute accuracy.
Crosswind & Headwind/Tailwind											rin		•	7.1%	1 mph 1 ft/min 0.1 km/h 0.1 m/s 0.1 knots	Refer to Ranges for Sensors Employed	Wind Speed Compass	Effective wind relative to a target or travel direction. Auto-switching headwindtailwind indicate
Delta T	18		an		an	•							ins	3.2 *F 1.8 *C	0.1 *F 0.1 *C	Refer to Ranges for Sensors Employed	Temperature Relative Humidity Pressure	Difference between dry bulb temperature and wet bulb temperature. When spraying, indicate evaporation rate and droplet lifetime. Safe range for pesticide spraying is 4 to 16 $^{\circ}$ / 2 to 9 $^{\circ}$
Density Altitude							•	•	•	•	•	•	•	226 ft 69 m	1 ft 1 m	Refer to Ranges for Sensors Employed	Temperature Relative Humidity Pressure	Local air density converted to equivalent elevation above sea level in a uniform layer consisti the International Standard Atmosphere.
Dewpoint				•	•	•	•	•	•		•	•	•	3.4 *F 1.9 *C	0.1 *F 0.1 *C	15 to 95 % RH Refer to Range for Temperature Sensor	Temperature Relative Humidity	Temperature that a volume of air must be cooled to at constant pressure for the water vapor present to condense into dew and form on a solid surface. Can also be considered to be the water-to-air saturation temperature.
Evaporation Rate										•				0.01 lb/ft <sup>2</sup> /hr 0.06 kg/m2/hr	0.01 b/ft²/hr 0.01 kg/m²/hr	Refer to Ranges for Sensors Employed	Wind Speed Temperature Relative Humidity Pressure User Input (Concrete Temperature)	The rate at which moleture is lost from the surface of curing concrete. Requires user measurement and entry of concrete temperature obtained with an accurate IR or probe thermometer ("F or "C, not included). Readings should be taken 20 inches above pour surfac with the thermiser braked, and averaged for 5-10 seconds using built-in waveraging function.
Heat Index		121	•	1.	•	1231	•	•	•	•	•	•	•	7.1 *F 4.0 *C	0.1 *F 0.1 *C	Refer to Ranges for Sensors Employed	Temperature Relative Humidity	Perceived temperature resulting from the combined effect of temperature and relative humidit Calculated based on NVNS Heat Index (HI) tables. Measurement range limited by extent of published tables.
Moisture Content   Humidity Ratio ("Grains")								•	•					.3 gpp .04 g/kg	0.1 gpp 0.01 g/kg	Refer to Ranges for Sensors Employed	Temperature Relative Humidity Pressure	Mass of water vapor in a mass of air.
Relative Air Density									•					0.3%	0.1%	Refer to Ranges for Sensors Employed	Temperature Relative Humidity Pressure	The ratio, expressed as a percentage, of measured air density to the air density of a standard atmosphere as defined by the ICAO.
Thermal Work Limit (TWL)														10.9 W/m <sup>2</sup>	0.1 W/m²	Refer to Ranges for Sensors Employed	Wind Speed Temperature Giobe Temperature Relative Humidity Pressure	Estimated safe maximum continuously sustainable human metabolic rate (Wim2) for the conditions and clothing factors. Based off of estimated metabolic output of typical human. On screen zone warnings.
Outdoor Wet Bulb Globe Temperature (WBGT)											•			1.3 °F 0.7 °C	0.1 *F 0.1 *C	Refer to Ranges for Sensors Employed	Wind Speed Temperature Globe Temperature Relative Humidity Pressure	Measure of human heat stress defined as the combination of effects due to radiation, convec and conduction. Outdoor WBGT is calculated from a weighted sum of natural wet bub (Triwb) globe temperature (Tg), and dry bub temperature (Td). User settable on-screen warning zone
Wet Bulb Temperature - aturally Aspirated (Tnwb)					23	112	18	3. "F	) 11	936)	•	101		1.4 *F 0.8 *C	0.1 *F 0.1 *C	Refer to Ranges for Sensors Employed	Wind Speed Temperature Globe Temperature Relative Humidity Pressure	Similar to psychrometric web-bub temperature (see below). However, Trub only undergoes for convection from the ambient air velocity. Trub is a measure of the evaporative cooling that th will allow. This is accounted for by combining the effects of, mainly, relative humidity and windspeed.
Wet Bulb Temperature - Psychrometric					•	•	•		•	•	•	•	•	3.2 °F 1.8 °C	0.1 *F 0.1 *C	Refer to Ranges for Sensors Employed	Temperature Relative Humidity Pressure	Temperature indicated by a sling psychrometer. Due to nature of the psychrometric ratio for water-air system, this approximates the thermodynamic wei-bub temperature. The thermodyn wei-bub temperature is the temperature a parcel of air would have if cooled adiabatically to saturation temperature via water evaporating into it.
Wind Chill		•			•		•	•		•	•	•	•	1.6 *F 0.9 *C	0.1 *F 0.1 *C	Refer to Ranges for Sensors Employed	Wind Speed Temperature	Perceived temperature resulting from combined effect of wind speed and temperature. Calcul based on the NWS Wind Chill Temperature (WCT) Index, revised 2001, with wind speed adju by a factor of 1.5 to yield equivalent results to wind speed measured at 10 m above ground. Measurement range limited by extern of published tables.
																CIFICATIONS		
Display & Backlight		•	•								AND CONTRACTOR	CONT.		Reflective 5 digit LCD. D	Digit height 0.36 in / 9 r	nm. Choice of aviation green of	iuminescent backlight. Manual activation or visible red (NV models only) electrol	uminescent backlight. Manual activation with auto-off.
Response Time & Display Update	•	•	•	•	•	•	•	•	•	•	•	•		All measurements except equilibrate to a large cha	ot those based on relations in the measurements of		ly within 1 second. Relative humidity a tes every 1 second.	viectroluminescent backlight. Automatic or manual activation. nd all measurements which include RH in their calculation may require as long as 1 minute to ful
Max/Avg Wind			-				•	•	•	•	•	•	•					with all other wind-related functions: air velocity, crosswind, headwind/tailwind, wind chill, WBGT
Data Storage & Graphical Display, Min/Max/Avg History										• 3600 points			• 2500	Minimum, maximum, ave				ta logger with graphical display. Mariual and auto data storage. Min/Max/Avg history may be res y off except for 2 and 5 second intervals (code version 4.18 and later). Data capacity shown.
ata Upload & Bluetooth® Data Connect Option								•	•	•	•	•		Bluetooth Data Trans pairing and transmitting.	fer Option: Adjustabl Employs Bluetooth Se	32) or Bluetooth data transfer e power consumption and radi rial Port Protocol for data tran 32) or Bluetooth data transfer	io range from up to 30 ft   9 meters. In smission.	sividual unit ID and 4-digit PIN code preprogrammed for easy identification and data security whe
Clock / Calendar					•		•	•			•	•		Requires optional PC int	erface (USB or RS-23	<ol> <li>or Bluetooth data transfer</li> <li>or Bluetooth data transfer</li> <li>or Bluetooth data transfer</li> </ol>	option and provided software.	Western refer to the transfer of
Auto Shutdown Languages							•	•	*	*	•	•		Requires optional PC int English, French, German	erface (USB or RS-23 n, Italian, Spanish.	32) or Bluetooth data transfer	option and provided software.	
Certifications Origin	•	*	*	*	*	•	*	•	•		•	•		CE certified, RoHS and Designed and manufact	WEEE compliant. Inde ured in the USA from U	JS and imported components.		ts available at additional charge). t and Tariff Code Transformation requirements for NAFTA Preference Criterion B.
Battery Life	•	•	•	•	•	•	•				•	•		Standard Models: AA	A Alkaline, two, include	d. Average life, 400 hours of u	klight use in 2000 to 3500 models. use, reduced by backlight or Bluetooth	radio transmission use.
Shock Resistance Sealing	•	•	•		•	•	•	•	•	•	•	•		Waterproof (IP67 and N	EMA-6).		t may damage replaceable impeller.	nge of the display and batteries by maintaining the unit within the operational range and exposin
Operational Temperature Limits Storage Temperature	*	•	•	•	*	*	*	*	*	•	•	*		14" F to 131" F   -10 "C to the more extreme env -22.0 "F to 140.0 "F   -3	ironment for the minim	nts may be taken beyond the li num time necessary to take rea	ading.	nge or one weavery and batteries by maintaining, the unit within the operational range and exposin
atorage remperature		•	•				-		-		-	-		4.8 x 1.9 x 1.1 in / 12.2 >	4.8 x 2.8 cm, 3.6 oz /	102 g (including slip-on cover)	).	
Size & Weight														5.0 x 1.8 x 1.1 in / 12.7 x	45x28 m 20	102 g		

Please note, these specifications are valid for all Kestrel 4400 products and all other Kestrel 4000 series with a serial number higher than 659340. If your product has a lower serial number, please reference the previous version of the specifications.

### (A+A)\*L Acoustics and Air Testing Laboratory Co. Ltd. 聲學及空氣測試實驗室有限公司

### Certificate of Calibration

for

Description:	Sound Level Meter
Manufacturer:	RION
Type No.:	NL-52 (Serial No.: 01010877)
Microphone:	UC-59 (Serial No.: 20521)
Preamplifier:	NH-25 (Serial No.: 11525)

#### Submitted by:

Customer: Acuity Sustainability Consulting Limited Address: Unit E, 12/F, Ford Glory Plaza, Nos. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong

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

☑ Within (31.5Hz – 2kHz) □ Outside

#### the allowable tolerance.

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

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

Date of receipt: 16 March 2023

Date of calibration: 21 March 2023

Date of NEXT calibration: 20 March 2024

Ma

Calibration Technician

Date of issue: 21 March 2023

Calibrated by:

Certificate No.: APJ22-158-CC001

Certified by: Mr. Ng Yan Wa Laboratory Manager Page 1 of 4 A+A)

Room 422,Leader Industrial Centre,57-59 Au Pui Wan Street ,Fo Tan, Shatin,N.T.,Hong Kong Tel: (852) 2668 3423 Fax:(852) 2668 6946 Homepage: http://www.aa-lab.com E-mail : inquiry@aa-lab.com



#### 1. Calibration Precaution:

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

#### 2. Calibration Conditions:

Air Temperature:	22.0 °C
Air Pressure:	1004 hPa
Relative Humidity:	62.4 %

#### 3. Calibration Equipment:

	Туре	Serial No.	Calibration Report Number	Traceable to	
Multifunction Calibrator	B&K 4226	2288467	AV220061	HOKLAS	

#### 4. Calibration Results

Sound Pressure Level

Reference Sound Pressure Level

Setting of Unit-under-test (UUT)		Applied value		UUT Reading,	IEC 61672 Class 1		
Range, dB	Freq. W	eighting	Time Weighting	Level, dB	Frequency, Hz	dB	Specification, dB
30-130	dBA	SPL	Fast	94	1000	93.9	±0.4

Linearity

Setting of Unit-under-test (UUT)		Applied value		UUT Reading,	IEC 61672 Class 1		
Range, dB	Freq.	Weighting	Time Weighting	Level, dB	Frequency, Hz	dB	Specification, dB
				94		93.9	Ref
30-130	dBA	SPL	Fast	104	1000	103.9	±0.3
				114		113.9	±0.3

Time Weighting

Setting of Unit-under-test (UUT)		Applied value		UUT Reading,	IEC 61672 Class 1		
Range, dB	Freq. W	eighting	Time Weighting	Level, dB	Frequency, Hz	dB	Specification, dB
20.120		CDI	Fast	94	1000	93.9	Ref
30-130 dBA SPL	Slow	94	1000	93.9	±0.3		

Certificate No.: APJ22-158-CC001	Page 2 of 4
Room 422, Leader Industrial Centre, 57-59 Au Pui Wan Street, Fo Tan, Shatin, N.T., Hong Kong	
Tel: (852) 2668 3423 Fax:(852) 2668 6946	
Homepage: http://www.aa-lab.com E-mail : inquiry@aa-lab.com	



#### Frequency Response

Linear Response

Setting of Unit-under-test (UUT)			Applied value		UUT Reading,	IEC 61672 Class 1	
Range, dB	Freq. We	eighting	Time Weighting	Level, dB	Frequency, Hz	dB	Specification, dB
			31.5	94.0	±2.0		
				63	94.1	±1.5	
			Fast	94	125	94.1	±1.5
30-130	dB	SPL			250	94.1	±1.4
					500	94.0	±1.4
					1000	93.9	Ref
			2000	93.3	±1.6		

A-weighting

Setting of Unit-under-test (UUT)			Applied value		UUT Reading,	IEC 61672 Class 1	
Range, dB	Freq. W	eighting	Time Weighting	Level, dB	Frequency, Hz	dB	Specification, dB
			31.5	54.5	-39.4 ±2.0		
				63	67.9	-26.2 ±1.5	
				94	125	78.0	-16.1±1.5
30-130	dBA	SPL	Fast		250	85.5	-8.6±1.4
				500	90.8	$-3.2 \pm 1.4$	
			1000	93.9	Ref		
			2000	94.6	$+1.2\pm1.6$		

#### C-weighting

Setting of Unit-under-test (UUT)			App	ied value	UUT Reading,	IEC 61672 Class	
Range, dB	Freq. W	eighting	Time Weighting	Level, dB	Frequency, Hz	dB	Specification, dB
30-130 dBC SPL				31.5	91.0	-3.0 ±2.0	
				63	93.3	-0.8±1.5	
					125	93.9	-0.2±1.5
	Fast	94	250	94.1	$-0.0 \pm 1.4$		
			500	94.0	$-0.0 \pm 1.4$		
			1000	93.9	Ref		
			2000	93.2	-0.2±1.6		

Certificate No.: APJ22-158-CC001



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#### 5. Calibration Results Applied

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

Uncertainties of Applied Value:

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

The uncertainties are evaluated for a 95% confidence level.

#### Note:

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

Certificate No.: APJ22-158-CC001



Page 4 of 4

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### **Certificate of Calibration**

for

Description:	Sound Level Meter
Manufacturer:	Svantek
Type No.:	971 (Serial No.: 103449)
Microphone:	ACO 7052E (Serial No.: 78092)
Preamplifier:	SV 18 (Serial No.: 78763)

#### Submitted by:

Customer: Acuity Sustainability Consulting Limited Address: Unit E, 12/F, Ford Glory Plaza, Nos. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong

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

Within (31.5Hz – 8kHz) □ Outside

the allowable tolerance.

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

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

Date of receipt: 2 February 2023

Date of calibration: 6 February 2023

Date of NEXT calibration: 5 February 2024

Calibrated by:

Calibration Technician

Certified by:

Date of issue: 6 February 2023

Certificate No.: APJ22-136-CC001

Mr. Ng Yan Wa Vaboratory Manager ESTING LAA A+A)

Page 1 of 4

Room 422, Leader Industrial Centre, 57-59 Au Pui Wan Street , Fo Tan, Shatin, N.T., Hong Kong Tel: (852) 2668 3423 Fax:(852) 2668 6946 Homepage: http://www.aa-lab.com E-mail: inquiry@aa-lab.com



#### 1. Calibration Precaution:

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

#### 2. Calibration Conditions:

Air Temperature:	23.9°C
Air Pressure:	1006 hPa
<b>Relative Humidity:</b>	47.9 %

#### 3. Calibration Equipment:

	Туре	Serial No.	Calibration Report Number	Traceable to	
Multifunction Calibrator	B&K 4226	2288467	AV220061	HOKLAS	

#### 4. Calibration Results

Sound Pressure Level

Reference Sound Pressure Level

Setting of Unit-under-test (UUT)				Applied value		UUT Reading.	IEC 61672 Class 1
Range, dB	Freq.	Weighting	Time Weighting	Level, dB	Frequency, Hz	100000	Specification, dB
25-124.3	dBA		Fast	94	1000	94.0	±0.4

Linearity

Setting of Unit-under-test (UUT)			Applied value		UUT Reading.	IEC 61672 Class 1	
Range, dB	Freq. W	eighting	Time Weighting	Level, dB	Frequency, Hz		Specification, dB
25-124.3	100000000	A SPL	Fast	94	1000	94.0	Ref
	dBA			104		104.0	±0.3
				114		114.0	±0.3

Time Weighting

Setting of Unit-under-test (UUT)			Applied value		UUT Reading.	IEC 61672 Class 1	
Range, dB	Freq.	Weighting	Time Weighting	Level, dB	Frequency, Hz	dB	Specification, dB
25-124.3	dBA		Fast	94	1000	94.0	Ref
			Slow			94.0	±0.3

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Certificate	No.: APJ22-	136-CC001
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Frequency Response

Linear Response

Setting of Unit-under-test (UUT)			Applied value		UUT Reading.	IEC 61672 Class	
Range, dB	Freq. W	eighting	Time Weighting	Level, dB	Frequency, Hz		Specification, dB
				94	31.5	94.2	±2.0
			Fast		63	94.1	±1.5
					125	94.1	±1.5
25-124.3	ID				250	94.1	±1.4
23-124.5	dB SPL	SPL			500	94.0	±1.4
					1000	94.0	Ref
				2000	93.9	±1.6	
		10 m			4000	93.6	±1.6
. 1					8000	90.9	+2.1; -3.1

A-weighting

Setting of Unit-under-test (UUT)			Applied value		UUT Reading	IEC 61672 Class 1	
Range, dB	Freq. W	eighting/	Time Weighting			dB	Specification, dB
					31.5	54.8	$-39.4\pm2.0$
			63	68.0	-26.2±1.5		
				94	125	78.0	-16.1±1.5
25-124.3	ID 4				250	85.4	-8.6±1.4
23-124.5	dBA	SPL	Fast		500	90.8	-3.2±1.4
				1000	94.0	Ref	
					2000	95.1	$+1.2 \pm 1.6$
					4000	94.6	$+1.0 \pm 1.6$
					8000	90.0	-1.1+2.1: -3.1

C-weighting

Setting of Unit-under-test (UUT)			Applied value		UUT Reading	IEC 61672 Class 1	
Range, dB	Freq. W	eighting/	Time Weighting	Level, dB	Frequency, Hz		Specification, dB
25-124.3 dBC				31.5	91.2	-3.0 ±2.0	
				63	93.3	-0.8±1.5	
		dBC SPL	Fast	94	125	93.9	-0.2 ±1.5
	IDC				250	94.0	-0.0 ±1.4
25-124.5	dBC				500	94.1	$-0.0 \pm 1.4$
					1000	94.0	Ref
					2000	93.7	-0.2 ±1.6
					4000	92.9	-0.8 ±1.6
					8000	88.1	-3.0 +2.1: -3.1

Certificate No.: APJ22-136-CC001



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#### (A+A)\*L Acoustics and Air Testing Laboratory Co. Ltd. 聲學及空氣測試實驗室有限公司

#### 5. Calibration Results Applied

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

Uncertainties of Applied Value:

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

The uncertainties are evaluated for a 95% confidence level.

#### Note:

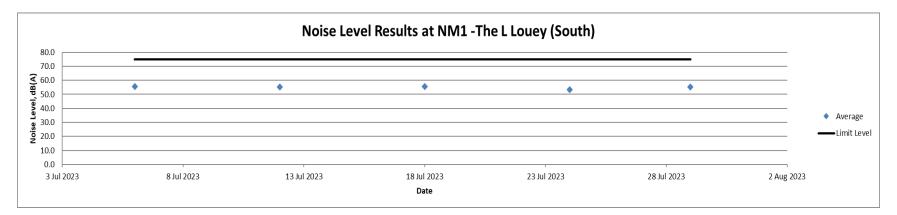
The values given in this certification only related to the values measured at the time of the calibration and any uncertainties quoted will not allow for the equipment long-term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the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

Certificate No.: APJ22-136-CC001

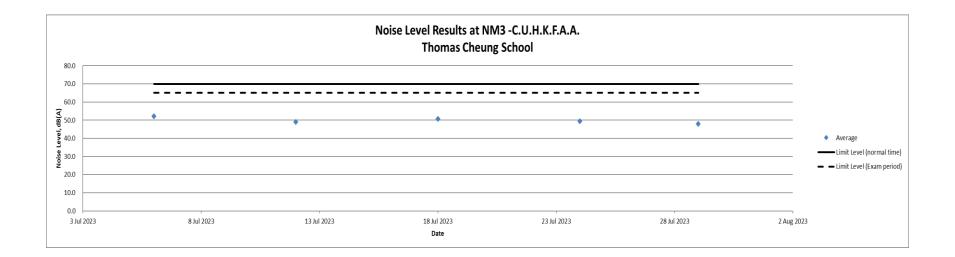


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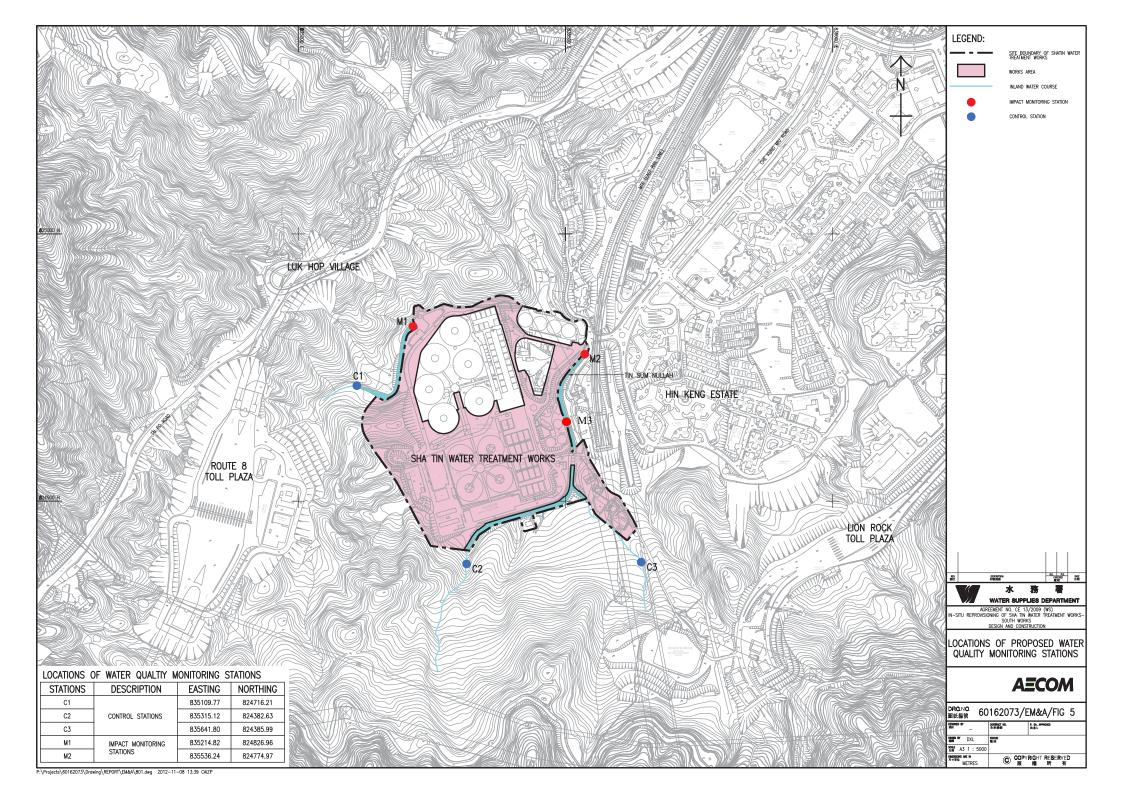
### Appendix N Impact Noise Monitoring Results and Graphical Presentation







### Appendix O Location Plan of Water Quality Monitoring Station



### Appendix P Calibration Certificate (Water Quality)

專業化驗有限公司 QUALITY PRO TEST-CONSULT LIMITED Unit 10, 5/F, Wah Wai Centre, 38-40 Au Pui Wan St., Fotan, Hong Kong Email: info@qualityprotest.com; Website: www.qualityprotest.com Tel: (852) 3956 8717; Fax: (852) 3956 3928

#### **REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION**

 Test Report No.
 : R-BC050055

 Date of Issue
 : 17 May 2023

 Page No.
 : 1 of 2

#### **PART A - CUSTOMER INFORMATION**

Acuity Sustainability Consulting Limited

Unit E, 12/F, Ford Glory Plaza 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong

#### **PART B - SAMPLE INFORMATION**

Name of Equipment :	HORIBA U-53
Manufacturer :	HORIBA
Serial Number :	PORBNFNT
Date of Received :	11 May 2023
Date of Calibration :	17 May 2023
Date of Next Calibration :	16 August 2023
Request No. :	D-BC050055

#### PART C - REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Test Parameter	Reference Method
pH value	APHA 21e 4500 H <sup>+</sup>
Temperature	Section 6 of international Accreditation New Zealand Technical Guide no. 3 Second edition March
	2008: Working Thermometer Calibration Procedure
Salinity	APHA 21e 2520 B
Dissolved oxygen	APHA 21e 4500 O
Turbidity	APHA 21e 2130 B

#### **PART D - CALIBRATION RESULT**

#### (1) pH value

Target ( pH unit )	Display Reading ( pH unit )	Tolerance	Result
4.00	4.14	0.14	Satisfactory
7.42	7.45	0.03	Satisfactory
10.01	10.06	0.05	Satisfactory

Tolerance of pH value should be less than  $\pm 0.2$  (pH unit)

#### (2) Temperature

Reading of Ref. thermometer ( °C )	Display Reading ( °C )	Tolerance	Result
16	17.5	1.5	Satisfactory
24	25.7	1.7	Satisfactory
32	32.3	0.3	Satisfactory

Tolerance of Temperature should be less than  $\pm$  2.0 (  $^{\circ}C$  )

#### (3) Salinity

Expected Reading (g/L)	Display Reading ( g/L )	Tolerance ( % )	Result
10	9.66	-3.40	Satisfactory
20	19.52	-2.40	Satisfactory
30	30.20	0.67	Satisfactory

Tolerance of Salinity should be less than  $\pm$  10.0 ( % )

--- CONTINUED ON NEXT PAGE ---

AUTHORIZED SIGNATORY:

LEE Chun-ning

Assistant Manager (Chemical Testing)

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#### **REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION**

Test Report No.	: R-BC050055
Date of Issue	: 17 May 2023
Page No.	: 2 of 2

#### (4) Dissolved oxygen

Expected Reading ( mg/L )	Display Reading ( mg/L )	Tolerance	Result
8.22	7.88	-0.34	Satisfactory
4.31	3.90	-0.41	Satisfactory
1.81	1.37	-0.44	Satisfactory
0.07	0.00	-0.07	Satisfactory

Tolerance of Dissolved oxygen should be less than  $\pm 0.5$  (mg/L)

#### (5) Turbidity

Expected Reading (NTU)	Display Reading (NTU)	Tolerance ( % )	Result
0	0.00		Satisfactory
10	10.8	8.00	Satisfactory
20	20.0	0.00	Satisfactory
100	106	6.00	Satisfactory
800	811	1.40	Satisfactory

Tolerance of Turbidity should be less than  $\pm$  10.0 ( % )

#### Remark(s)

•The "Date of Next Calibration" is recommended according to best practice principals as practiced by QPT or quoted form relevant international standards. •The results relate only to the calibrated equipment as received

•The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.

"Displayed Reading" denotes the figure shown on item under calibration/ checking regardless of equipment precision or significant figures.

•The "Tolerance Limit" mentioned is the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted form relevant international standards.

--- END OF REPORT ----

# Appendix Q The Certification of Laboratory with HOKLAS accredited Analytical Tests



Hong Kong Accreditation Service 香港認可處

#### **Certificate of Accreditation**

認可證書

This is to certify that 特此證明

#### ACUMEN LABORATORY AND TESTING LIMITED

浩科檢測中心有限公司

Flat/Rm D, 12/F, Ford Glory Plaza, Nos. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong 香港九龍長沙澹永康街37-39號福源廣場12樓D室

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

> **Environmental Testing** 環境測試

This accreditation to ISO/IEC 17025:2017 demonstrates technical competence for a defined scope and the implementation of a management system relevant to laboratory operation (see joint IAF-ILAC-ISO Communiqué). 此項 ISO/IEC 17025:2017 的認可資格證明社實驗所具儲指定範疇內所須的技術能力並 實證一套與實驗所還作相關的管理體系 (見圖際認可論壇、圖態實驗所認可合作組織及圖際標準化組織的聯合公報)。

The common seal of HKAS is affixed hereto by the authority of the HKAS Executive 現經香港認可處執行機關授權在此蓋上香港認可處的印章

SHUM Wai-leung, Executive Administrator 執行幹事 沈偉良 Issue Date : 15 November 2021 簽發日期:二零二一年十一月十五日

Registration Number HOKLAS 241 註冊號碼:



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

This certificate is issued subject to the terms and conditions laid down by HKAS 本證書接照香港認可書訂立約億款及條件發出

L002316

### Appendix R Impact Water Quality Monitoring Results

# acumen

# Acumen Laboratory and Testing Limited Flat/Rm D, 12/F, Ford Glory Plaza, Nos. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong

Tel: (852) 2333 6823 Fax: (852) 2333 1316

#### **Test Report**

Report Number	:	Q230002aR231043	Page 1 of 2
Job Number	:	R231043	
Issue Date	;	27/07/2023	
Applicant Name Applicant Address	:	Acumen Environmental Engineering and Technologies Unit D, 12/F, Ford Glory Plaza, No.37-39 Wing Hong S	
Project Name	:	Cheung Sha Wan, Kowloon, Hong Kong CJO-3113-1175	
Test Required	:	Total Suspended Solids (TSS)	
Sampling Date	:	12/07/2023	
Date Samples Received	:	12/07/2023	
Sample Nature	:	Water	
Number of Samples Received	:	5	
Condition Received	:	Sample(s) arrived laboratory in chilled condition	
Type of Container	:	HDPE Plastic Bottles	
Laboratory ID	:	R231043/1-5	
Test Period	:	12/07/2023 – 13/07/2023	
Method Used	:	In-house Method, QPL-15e for Total Suspended Solids	5

Test Result

Refer to the results on page 2 :

> For and on behalf of Acumen Laboratory and Testing Limited

Authorized Signature

Hui Wai Fung, Huntington

Laboratory Manager Chemical and Microbiological Division

Hong Kong Accreditation Service (HKAS) has accredited Acumen Laboratory and Testing Limited (Reg. No. HOKLAS 241 - TEST) under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. This report is issued subject to Acumen Laboratory and Testing Limited standard TERMS AND CONDITIONS, and shall not be reproduced except in full or with written approval by Acumen Laboratory and Testing Limited.

---f 2

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Flat/Rm D, 12/F, Ford Glory Plaza, Nos. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong Tel: (852) 2333 6823 Fax: (852) 2333 1316

#### **Test Report**

Report Number	:	Q230002aR231043
Job Number	i	R231043
Issue Date	:	27/07/2023

#### **Test Result:**

Lab ID	Sampling Date	Client Sample ID	Total Suspended Solids (TSS), mg/L
R231043/1	12/07/2023	C1	1.2
R231043/2	12/07/2023	C2	<1
R231043/3	12/07/2023	M1	1.7
R231043/4	12/07/2023	M2	1.8
R231043/5	12/07/2023	М3	1.5

Note:

1. mg/L indicates milligram per liter

2. < indicates less than.

3. Reporting limit is 2.5mg/L for 1L sample

4. Reporting limit is 1 mg/L for 2.5L sample

5. Applicant name, applicant address, project name, sampling date, sample ID and sample nature are provided by applicant.

6. The result(s) relate only to the item(s) tested.

7. The result(s) are applied only to the sample(s) received.

\*\*\*End of Report\*\*\*

Hong Kong Accreditation Service (HKAS) has accredited Acumen Laboratory and Testing Limited (Reg. No. HOKLAS 241 - TEST) under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. This report is issued subject to Acumen Laboratory and Testing Limited standard TERMS AND CONDITIONS, and shall not be reproduced except in full or with written approval by Acumen Laboratory and Testing Limited.

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Test Report

2

Test Report				
Report Number	:	Q230002aR231053 Page 1 of		
Job Number	:	R231053		
Issue Date	:	27/07/2023		
Applicant Name Applicant Address	:	Acumen Environmental Engineering and Technologies Co, Ltd. Unit D, 12/F, Ford Glory Plaza, No.37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong		
Project Name	:	CJO-3113-1176		
Test Required	:	Total Suspended Solids (TSS)		
Sampling Date	:	14/07/2023		
Date Samples Received	:	14/07/2023		
Sample Nature	:	Water		
Number of Samples Received	:	5		
Condition Received	:	Sample(s) arrived laboratory in chilled condition		
Type of Container	:	HDPE Plastic Bottles		
Laboratory ID	:	R231053/1-5		
Test Period	:	14/07/2023 – 15/07/2023		
Method Used	:	In-house Method, QPL-15e for Total Suspended Solids		

Test Result

: Refer to the results on page 2

:

For and on behalf of Acumen Laboratory and Testing Limited

Authorized Signature

Hui Wai Fung, Huntingto

Laboratory Manager Chemical and Microbiological Division

### Acumen Laboratory and Testing Limited

Flat/Rm D, 12/F, Ford Glory Plaza, Nos. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong Tel: (852) 2333 6823 Fax: (852) 2333 1316

#### **Test Report**

Report Number	:	Q230002aR231053
Job Number	÷	R231053
Issue Date	:	27/07/2023

#### **Test Result:**

Lab ID	Sampling Date Client Sample ID		Total Suspended Solids (TSS), mg/L
R231053/1	14/07/2023	C1	2.4
R231053/2	14/07/2023	C2	2.7
R231053/3	14/07/2023	M1	1.9
R231053/4	14/07/2023	M2	1.1
R231053/5	14/07/2023	М3	2.4

Note:

1. mg/L indicates milligram per liter

2. < indicates less than.

3. Reporting limit is 2.5mg/L for 1L sample

4. Reporting limit is 1 mg/L for 2.5L sample

5. Applicant name, applicant address, project name, sampling date, sample ID and sample nature are provided by applicant.

6. The result(s) relate only to the item(s) tested.

7. The result(s) are applied only to the sample(s) received.

\*\*\*End of Report\*\*\*

Hong Kong Accreditation Service (HKAS) has accredited Acumen Laboratory and Testing Limited (Reg. No. HOKLAS 241 - TEST) under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. This report is issued subject to Acumen Laboratory and Testing Limited standard TERMS AND CONDITIONS, and shall not be reproduced except in full or with written approval by Acumen Laboratory and Testing Limited.

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Test Report			
Report Number	:	Q230002aR231056	Page 1 of 2
Job Number	:	R231056	
Issue Date	:	28/07/2023	
Applicant Name	:	Acumen Environmental Engineering and Technologies	Co, Ltd.
Applicant Address	:	Unit D, 12/F, Ford Glory Plaza, No.37-39 Wing Hong St	reet, Cheung
		Sha Wan, Kowloon, Hong Kong	
Project Name	:	CJO-3113-1177	
Test Required	:	Total Suspended Solids (TSS)	
Sampling Date	:	18/07/2023	
Date Samples Received	:	18/07/2023	
Sample Nature	:	Water	
Number of Samples Received	:	5	
Condition Received	:	Sample(s) arrived laboratory in chilled condition	
Type of Container	:	HDPE Plastic Bottles	
Laboratory ID	:	R231056/1-5	
Test Period	:	18/07/2023 – 19/07/2023	
Method Used	:	In-house Method, QPL-15e for Total Suspended Solids	

2

Test Result

Refer to the results on page 2

2

For and on behalf of Acumen Laboratory and Testing Limited

Authorized Signature

Hui Wai Fung, Hunting

Laboratory Manager

Chemical and Microbiological Division

### Acumen Laboratory and Testing Limited

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#### Test Report

:	Q230002aR231056
	:

Job Number : R231056

Issue Date : 28/07/2023

#### Test Result:

Lab ID	Sampling Date	Client Sample ID	Total Suspended Solids (TSS), mg/L
R231056/1	18/07/2023	C1	1.3
R231056/2	18/07/2023	C2	<1
R231056/3	18/07/2023	M1	1.6
R231056/4	18/07/2023	M2	<1
R231056/5	18/07/2023	М3	<1

Note:

1. mg/L indicates milligram per liter

2. < indicates less than.

3. Reporting limit is 2.5mg/L for 1L sample

4. Reporting limit is 1 mg/L for 2.5L sample

5. Applicant name, applicant address, project name, sampling date, sample ID and sample nature are provided by applicant.

6. The result(s) relate only to the item(s) tested.

7. The result(s) are applied only to the sample(s) received.

\*\*\*End of Report\*\*\*

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#### <u>Test Report</u>

Page 1 of 2

Report Number	:	Q230002aR231057
Job Number	:	R231057
Issue Date	:	28/07/2023
Applicant Name	:	Acumen Environmental Engineering and Technologies Co, Ltd.
Applicant Address	:	Unit D, 12/F, Ford Glory Plaza, No.37-39 Wing Hong Street,
		Cheung Sha Wan, Kowloon, Hong Kong
Project Name	:	CJO-3113-1178
Test Required	:	Total Suspended Solids (TSS)
Sampling Date	:	20/07/2023
Date Samples Received	:	20/07/2023
Sample Nature	:	Water
Number of Samples Received	:	5
Condition Received	:	Sample(s) arrived laboratory in chilled condition
Type of Container	:	HDPE Plastic Bottles
Laboratory ID	:	R231057/1-5
Test Period	:	20/07/2023 – 21/07/2023
Method Used	:	In-house Method, QPL-15e for Total Suspended Solids

Test Result

: Refer to the results on page 2

:

*For and on behalf of* Acumen Laboratory and Testing Limited

Authorized Signature

Hui Wai Fung, Huntington

Laboratory Manager Chemical and Microbiological Division

### Acumen Laboratory and Testing Limited

Flat/Rm D, 12/F, Ford Glory Plaza, Nos. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong Tel: (852) 2333 6823 Fax: (852) 2333 1316

#### Test Report

Report Number	:	Q230002aR231057

Job Number : R231057

Issue Date : 28/07/2023

#### Test Result:

Lab ID	Sampling Date	Client Sample ID	Total Suspended Solids (TSS), mg/L
R231057/1	20/07/2023	C1	<1
R231057/2	20/07/2023	C2	<1
R231057/3	20/07/2023	M1	<1
R231057/4	20/07/2023	M2	1.0
R231057/5	20/07/2023	МЗ	<1

Note:

1. mg/L indicates milligram per liter

2. < indicates less than.

3. Reporting limit is 2.5mg/L for 1L sample

4. Reporting limit is 1 mg/L for 2.5L sample

5. Applicant name, applicant address, project name, sampling date, sample ID and sample nature are provided by applicant.

6. The result(s) relate only to the item(s) tested.

7. The result(s) are applied only to the sample(s) received.

\*\*\*End of Report\*\*\*

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#### Test Report

Page 1 of 2

Report Number	:	Q230002aR231058
Job Number	:	R231058
Issue Date	:	28/07/2023
Applicant Name	:	Acumen Environmental Engineering and Technologies Co, Ltd.
Applicant Address	:	Unit D, 12/F, Ford Glory Plaza, No.37-39 Wing Hong Street,
		Cheung Sha Wan, Kowloon, Hong Kong
Project Name	:	CJO-3113-1179
Test Required	:	Total Suspended Solids (TSS)
Sampling Date	:	22/07/2023
Date Samples Received	:	22/07/2023
Sample Nature	:	Water
Number of Samples Received	:	5
Condition Received	:	Sample(s) arrived laboratory in chilled condition
Type of Container	:	HDPE Plastic Bottles
Laboratory ID	:	R231058/1-5
Test Period	:	22/07/2023 – 23/07/2023
Method Used	:	In-house Method, QPL-15e for Total Suspended Solids

Test Result

: Refer to the results on page 2

:

For and on behalf of Acumen Laboratory and Testing Limited

Authorized Signature

Hui Wai Fung, Huntington

Laboratory Manager Chemical and Microbiological Division

### Acumen Laboratory and Testing Limited

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#### Test Report

Report Number	:	Q230002aR231058
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Job Number : R231058

Issue Date : 28/07/2023

#### Test Result:

Lab ID	Sampling Date	Client Sample ID	Total Suspended Solids (TSS), mg/L
R231058/1	22/07/2023	C1	2.5
R231058/2	22/07/2023	C2	1.3
R231058/3	22/07/2023	M1	1.8
R231058/4	22/07/2023	M2	1.6
R231058/5	22/07/2023	М3	1.3

Note:

1. mg/L indicates milligram per liter

2. < indicates less than.

3. Reporting limit is 2.5mg/L for 1L sample

4. Reporting limit is 1 mg/L for 2.5L sample

5. Applicant name, applicant address, project name, sampling date, sample ID and sample nature are provided by applicant.

6. The result(s) relate only to the item(s) tested.

7. The result(s) are applied only to the sample(s) received.

\*\*\*End of Report\*\*\*

Hong Kong Accreditation Service (HKAS) has accredited Acumen Laboratory and Testing Limited (Reg. No. HOKLAS 241 - TEST) under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. This report is issued subject to Acumen Laboratory and Testing Limited standard TERMS AND CONDITIONS, and shall not be reproduced except in full or with written approval by Acumen Laboratory and Testing Limited.

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Tel: (852) 2333 6823 Fax: (852) 2333 1316

#### **Test Report**

Report Number	:	Q230002aR231100 Page 1 of 2
Job Number	:	R231100
Issue Date	:	03/08/2023
Applicant Name Applicant Address	:	Acumen Environmental Engineering and Technologies Co, Ltd. Unit D, 12/F, Ford Glory Plaza, No.37-39 Wing Hong Street,
Project Name	:	Cheung Sha Wan, Kowloon, Hong Kong CJO-3113-1180
Test Required	:	Total Suspended Solids (TSS)
Sampling Date	:	24/07/2023
Date Samples Received	:	24/07/2023
Sample Nature	:	Water
Number of Samples Received	:	5
Condition Received	:	Sample(s) arrived laboratory in chilled condition
Type of Container		HDPE Plastic Bottles
Laboratory ID	:	R231100/1-5
Test Period	:	24/07/2023 – 25/07/2023
Method Used	:	In-house Method, QPL-15e for Total Suspended Solids

Test Result

Refer to the results on page 2 :

> For and on behalf of Acumen Laboratory and Testing Limited

Authorized Signature

Hui Wai Fung, Huntington

Laboratory Manager

•

Chemical and Microbiological Division

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Page 1 of 2

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#### Test Report

Report Number	:	Q230002aR231100
Job Number	:	R231100
Issue Date	:	03/08/2023

#### Test Result:

Lab ID	Sampling Date	Client Sample ID	Total Suspended Solids (TSS), mg/L
R231100/1	24/07/2023	C1	1.4
R231100/2	24/07/2023	C2	<1
R231100/3	24/07/2023	M1	<1
R231100/4	24/07/2023	M2	<1
R231100/5	24/07/2023	М3	<1

Note:

1. mg/L indicates milligram per liter

2. < indicates less than.

3. Reporting limit is 2.5mg/L for 1L sample

4. Reporting limit is 1 mg/L for 2.5L sample

5. Applicant name, applicant address, project name, sampling date, sample ID and sample nature are provided by applicant.

6. The result(s) relate only to the item(s) tested.

7. The result(s) are applied only to the sample(s) received.

#### \*\*\*End of Report\*\*\*

Hong Kong Accreditation Service (HKAS) has accredited Acumen Laboratory and Testing Limited (Reg. No. HOKLAS 241 - TEST) under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. This report is issued subject to Acumen Laboratory and Testing Limited standard TERMS AND CONDITIONS, and shall not be reproduced except in full or with written approval by Acumen Laboratory and Testing Limited.

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Tel: (852) 2333 6823 Fax: (852) 2333 1316

#### **Test Report**

Report Number	:	Q230002aR231101	e 1 of 2
Job Number	:	R231101	
Issue Date	:	03/08/2023	
Applicant Name	÷	Acumen Environmental Engineering and Technologies Co, L	td.
Applicant Address	:	Unit D, 12/F, Ford Glory Plaza, No.37-39 Wing Hong Street,	
		Cheung Sha Wan, Kowloon, Hong Kong	
Project Name	:	CJO-3113-1181	
Test Required	:	Total Suspended Solids (TSS)	
Sampling Date	:	26/07/2023	
Date Samples Received	÷	26/07/2023	
Sample Nature	:	Water	
Number of Samples Received	:	5	
Condition Received	:	Sample(s) arrived laboratory in chilled condition	
Type of Container	:	HDPE Plastic Bottles	
Laboratory ID	:	R231101/1-5	
Test Period	:	26/07/2023 – 27/07/2023	
Method Used	:	In-house Method, QPL-15e for Total Suspended Solids	

Test Result

Refer to the results on page 2

:

For and on behalf of Acumen Laboratory and Testing Limited

Authorized Signature

Hui Wai Fung, Huntington

Laboratory Manager

Chemical and Microbiological Division

### Acumen Laboratory and Testing Limited

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#### Test Report

1

Report Number		Q230002aR23110
Job Number	÷	R231101

Issue Date : 03/08/2023

#### **Test Result:**

Lab ID	Sampling Date	Client Sample ID	Total Suspended Solids (TSS), mg/L
R231101/1	26/07/2023	C1	2.0
R231101/2	26/07/2023	C2	1.2
R231101/3	26/07/2023	M1	1.4
R231101/4	26/07/2023	M2	<1
R231101/5	26/07/2023	М3	<1

Note:

1. mg/L indicates milligram per liter

2. < indicates less than.

3. Reporting limit is 2.5mg/L for 1L sample

4. Reporting limit is 1 mg/L for 2.5L sample

5. Applicant name, applicant address, project name, sampling date, sample ID and sample nature are provided by applicant.

6. The result(s) relate only to the item(s) tested.

7. The result(s) are applied only to the sample(s) received.

\*\*\*End of Report\*\*\*

Hong Kong Accreditation Service (HKAS) has accredited Acumen Laboratory and Testing Limited (Reg. No. HOKLAS 241 - TEST) under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. This report is issued subject to Acumen Laboratory and Testing Limited standard TERMS AND CONDITIONS, and shall not be reproduced except in full or with written approval by Acumen Laboratory and Testing Limited.

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Tel: (852) 2333 6823 Fax: (852) 2333 1316

#### **Test Report**

		Toot i toport	
Report Number	:	Q230002aR231102	Page 1 of 2
Job Number	:	R231102	
Issue Date	:	03/08/2023	
Applicant Name Applicant Address	:	Acumen Environmental Engineering and Technologies Unit D, 12/F, Ford Glory Plaza, No.37-39 Wing Hong St	15
	•	Cheung Sha Wan, Kowloon, Hong Kong	lreel,
Project Name	:	CJO-3113-1182	
Test Required	:	Total Suspended Solids (TSS)	
Sampling Date	:	28/07/2023	
Date Samples Received	:	28/07/2023	
Sample Nature	:	Water	
Number of Samples Received	:	5	
Condition Received	:	Sample(s) arrived laboratory in chilled condition	
Type of Container	:	HDPE Plastic Bottles	
Laboratory ID	:	R231102/1-5	
Test Period	•	28/07/2023 – 31/07/2023	
Method Used	:	In-house Method, QPL-15e for Total Suspended Solids	

Test Result

Refer to the results on page 2

:

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For and on behalf of Acumen Laboratory and Testing Limited

Authorized Signature

Hui Wai Fung, Huntington

Laboratory Manager

Chemical and Microbiological Division

### Acumen Laboratory and Testing Limited Flat/Rm D, 12/F, Ford Glory Plaza, Nos. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong

Tel: (852) 2333 6823 Fax: (852) 2333 1316

#### **Test Report**

Page 2 of 2

Report Number	:	Q230002aR231102
Job Number	:	R231102

Issue Date 03/08/2023 •

#### **Test Result:**

Lab ID	Sampling Date	Client Sample ID	Total Suspended Solids (TSS), mg/L
R231102/1	28/07/2023	C1	<1
R231102/2	28/07/2023	C2	<1
R231102/3	28/07/2023	M1	<1
R231102/4	28/07/2023	M2	<1
R231102/5	28/07/2023	М3	<1

Note:

mg/L indicates milligram per liter 1.

- < indicates less than. 2.
- Reporting limit is 2.5mg/L for 1L sample 3.

Reporting limit is 1 mg/L for 2.5L sample 4.

- Applicant name, applicant address, project name, sampling date, sample ID and sample nature are provided by applicant. 5.
- The result(s) relate only to the item(s) tested. 6.
- 7. The result(s) are applied only to the sample(s) received.

#### \*\*\*End of Report\*\*\*

### Acumen Laboratory and Testing Limited Flat/Rm D, 12/F, Ford Glory Plaza, Nos. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong

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			-
Report Number	;	Q230002aR231125	Page 1 of 2
Job Number	:	R231125	
Issue Date	:	08/08/2023	
Applicant Name Applicant Address	:	Acumen Environmental Engineering and Technologies Unit D, 12/F, Ford Glory Plaza, No.37-39 Wing Hong S	
		Cheung Sha Wan, Kowloon, Hong Kong	Meel,
Project Name	:	CJO-3113-1183	
Test Required	•	Total Suspended Solids (TSS)	
Sampling Date	:	31/07/2023	
Date Samples Received	:	31/07/2023	
Sample Nature	:	Water	
Number of Samples Received		5	
Condition Received	:	Sample(s) arrived laboratory in chilled condition	
Type of Container	:	HDPE Plastic Bottles	
Laboratory ID	:	R231125/1-5	
Test Period	:	31/07/2023 - 01/08/2023	
Method Used	:	In-house Method, QPL-15e for Total Suspended Solids	5

Test Result

Refer to the results on page 2

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For and on behalf of Acumen Laboratory and Testing Limited

Authorized Signature

Hui Wai Fung, Huntington

Laboratory Manager

Chemical and Microbiological Division

### Acumen Laboratory and Testing Limited

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#### Test Report

Report Number	:	Q230002aR231125
Job Number	:	R231125
Issue Date	:	08/08/2023

#### Test Result:

Lab ID	Sampling Date	Client Sample ID	Total Suspended Solids (TSS), mg/L
R231125/1	31/07/2023	C1	<1
R231125/2	31/07/2023	C2	<1
R231125/3	31/07/2023	M1	<1
R231125/4	31/07/2023	M2	<1
R231125/5	31/07/2023	М3	<1

Note:

1. mg/L indicates milligram per liter

2. < indicates less than.

3. Reporting limit is 2.5mg/L for 1L sample

4. Reporting limit is 1 mg/L for 2.5L sample

5. Applicant name, applicant address, project name, sampling date, sample ID and sample nature are provided by applicant.

6. The result(s) relate only to the item(s) tested.

7. The result(s) are applied only to the sample(s) received.

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Report Number	:	Q230002aR230936	Page 1 of 2
Job Number	÷	R230936	
Issue Date	:	10/07/2023	
Applicant Name	:	Acumen Environmental Engineering and Technologies	s Co, Ltd.
Applicant Address	:	Unit D, 12/F, Ford Glory Plaza, No.37-39 Wing Hong S	Street,
		Cheung Sha Wan, Kowloon, Hong Kong	
Project Name	:	CJO-3113-1171	
Test Required	:	Total Suspended Solids (TSS)	
Sampling Date	:	03/07/2023	
Date Samples Received	:	03/07/2023	
Sample Nature	:	Water	
Number of Samples Received	:	5	
Condition Received	:	Sample(s) arrived laboratory in chilled condition	
Type of Container	:	HDPE Plastic Bottles	
Laboratory ID		R230936/1-5	
Test Period	:	03/07/2023 – 04/07/2023	
Method Used	:	In-house Method, QPL-15e for Total Suspended Solids	S

**Test Result** 

Refer to the results on page 2 :

> For and on behalf of Acumen Laboratory and Testing Limited

Authorized Signature

:

Hui Wai Fung, Huntington Laboratory Manager Chemical and Microbiological Division

### Acumen Laboratory and Testing Limited

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#### Test Report

Report Number	:	Q230002aR230936
Job Number	:	R230936
Issue Date	:	10/07/2023

#### **Test Result:**

Lab ID	Sampling Date	Client Sample ID	Total Suspended Solids (TSS), mg/L
R230936/1	03/07/2023	C1	1.2
R230936/2	03/07/2023	C2	<1
R230936/3	03/07/2023	M1	<1
R230936/4	03/07/2023	M2	<1
R230936/5	03/07/2023	М3	<1

Note:

1. mg/L indicates milligram per liter

2. < indicates less than.

3. Reporting limit is 2.5mg/L for 1L sample

4. Reporting limit is 1 mg/L for 2.5L sample

5. Applicant name, applicant address, project name, sampling date, sample ID and sample nature are provided by applicant.

6. The result(s) relate only to the item(s) tested.

7. The result(s) are applied only to the sample(s) received.

\*\*\*End of Report\*\*\*

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#### **Test Report**

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Report Number	:	Q230002aR230937	Page 1 of 2
Job Number	:	R230937	
Issue Date	1	10/07/2023	
Applicant Name	:	Acumen Environmental Engineering and Technologies	Co, Ltd.
Applicant Address	:	Unit D, 12/F, Ford Glory Plaza, No.37-39 Wing Hong S	Street,
		Cheung Sha Wan, Kowloon, Hong Kong	
Project Name	:	CJO-3113-1172	
Test Required	:	Total Suspended Solids (TSS)	
Sampling Date	:	05/07/2023	
Date Samples Received	:	05/07/2023	
Sample Nature	:	Water	
Number of Samples Received	:	5	
Condition Received	:	Sample(s) arrived laboratory in chilled condition	
Type of Container	:	HDPE Plastic Bottles	
Laboratory ID	•	R230937/1-5	
Test Period	:	05/07/2023 – 06/07/2023	
Method Used	:	In-house Method, QPL-15e for Total Suspended Solids	3

Test Result

Refer to the results on page 2 :

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For and on behalf of Acumen Laboratory and Testing Limited

Authorized Signature

Hui Wai Fung, Huntington Laboratory Manager Chemical and Microbiological Division

### Acumen Laboratory and Testing Limited

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#### Test Report

Report Number	:	Q230002aR230937
Job Number	:	R230937
Issue Date	:	10/07/2023

#### **Test Result:**

Lab ID	Sampling Date	Client Sample ID	Total Suspended Solids (TSS), mg/L
R230937/1	05/07/2023	C1	3.0
R230937/2	05/07/2023	C2	<1
R230937/3	05/07/2023	M1	2.2
R230937/4	05/07/2023	M2	<1
R230937/5	05/07/2023	M3	<1

Note:

1. mg/L indicates milligram per liter

2. < indicates less than.

3. Reporting limit is 2.5mg/L for 1L sample

4. Reporting limit is 1 mg/L for 2.5L sample

5. Applicant name, applicant address, project name, sampling date, sample ID and sample nature are provided by applicant.

6. The result(s) relate only to the item(s) tested.

7. The result(s) are applied only to the sample(s) received.

\*\*\*End of Report\*\*\*

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Report Number	:	Q230002aR230938	Page 1 of 2
Job Number	:	R230938	
Issue Date	i	10/07/2023	
Applicant Name	i	Acumen Environmental Engineering and Technologies	s Co, Ltd.
Applicant Address	:	Unit D, 12/F, Ford Glory Plaza, No.37-39 Wing Hong S	Street,
		Cheung Sha Wan, Kowloon, Hong Kong	
Project Name	:	CJO-3113-1173	
Test Required	1	Total Suspended Solids (TSS)	
Sampling Date	:	07/07/2023	
Date Samples Received	;	07/07/2023	
Sample Nature	:	Water	
Number of Samples Received		5	
Condition Received	:	Sample(s) arrived laboratory in chilled condition	
Type of Container	:	HDPE Plastic Bottles	
Laboratory ID	:	R230938/1-5	
Test Period	:	07/07/2023 – 08/07/2023	
Method Used	:	In-house Method, QPL-15e for Total Suspended Solid	S

Test Result

Refer to the results on page 2

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:

For and on behalf of Acumen Laboratory and Testing Limited

Authorized Signature

Hui Wai Fung, Huntington Laboratory Manager Chemical and Microbiological Division

### Acumen Laboratory and Testing Limited

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#### Test Report

Report Number	:	Q230002aR230938
Job Number	I	R230938

Issue Date : 10/07/2023

#### **Test Result:**

Lab ID	Sampling Date	Client Sample ID	Total Suspended Solids (TSS), mg/L
R230938/1	07/07/2023	C1	1.4
R230938/2	07/07/2023	C2	<1
R230938/3	07/07/2023	M1	<1
R230938/4	07/07/2023	M2	<1
R230938/5	07/07/2023	М3	<1

Note:

1. mg/L indicates milligram per liter

2. < indicates less than.

3. Reporting limit is 2.5mg/L for 1L sample

4. Reporting limit is 1 mg/L for 2.5L sample

5. Applicant name, applicant address, project name, sampling date, sample ID and sample nature are provided by applicant.

6. The result(s) relate only to the item(s) tested.

7. The result(s) are applied only to the sample(s) received.

\*\*\*End of Report\*\*\*

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**Test Report** 

2

Report Number	:	Q230002aR230997	Page 1 of 2
Job Number	:	R230997	
Issue Date	:	19/07/2023	
Applicant Name	:	Acumen Environmental Engineering and Technologies	Co, Ltd.
Applicant Address	:	Unit D, 12/F, Ford Glory Plaza, No.37-39 Wing Hong S	
		Cheung Sha Wan, Kowloon, Hong Kong	
Project Name	:	CJO-3113-1174	
Test Required	:	Total Suspended Solids (TSS)	
Sampling Date	:	10/07/2023	
Date Samples Received	:	10/07/2023	
Sample Nature		Water	
Number of Samples Received	:	5	
Condition Received	:	Sample(s) arrived laboratory in chilled condition	
Type of Container	:	HDPE Plastic Bottles	
Laboratory ID	:	R230997/1-5	
Test Period	:	10/07/2023 - 11/07/2023	
Method Used	:	In-house Method, QPL-15e for Total Suspended Solids	;

Test Result

: Refer to the results on page 2

> For and on behalf of Acumen Laboratory and Testing Limited

Authorized Signature

Hui Wai Fung, Huntington

Laboratory Manager

Chemical and Microbiological Division

### Acumen Laboratory and Testing Limited

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#### **Test Report**

Report Number	:	Q230002aR230997
Job Number	:	R230997

Issue Date 19/07/2023 •

#### Test Result:

Lab ID	Sampling Date	Client Sample ID	Total Suspended Solids (TSS), mg/L
R230997/1	10/07/2023	C1	3.3
R230997/2	10/07/2023	C2	<1
R230997/3	10/07/2023	M1	3.0
R230997/4	10/07/2023	M2	<1
R230997/5	10/07/2023	М3	<1

Note:

mg/L indicates milligram per liter 1.

< indicates less than.

2. 3. Reporting limit is 2.5mg/L for 1L sample

4. Reporting limit is 1 mg/L for 2.5L sample

Applicant name, applicant address, project name, sampling date, sample ID and sample nature are provided by applicant. 5.

6. The result(s) relate only to the item(s) tested.

The result(s) are applied only to the sample(s) received. 7.

\*\*\*End of Report\*\*\*

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Data	T	W 41	T ti	Co-or	rdinates	Water	Depth	Sample Depth	Τe	emp.		DO	con.	Tur	bidity		pH	I	SS
Date	Time	Weather	Location	East	North	n	1	m	(	°C		mg	g/L	N	ITU		un	it	mg/L
	9:34	Fine	C1	835110	824716		0.04	0.02	25.77	25.83	3	10.13	11	0.79	) 0.	85	7.74	7.8	
	9:59	Fine	C2	835403	824470		0.02	0.01	25.97	26.67	7	11.56	11.53	C	)	0	7.43	7.3	
3/7/2023	N/A	Fine	C3	835642	824386	N/A		N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A		N/A	N/A
	9:39	Fine	M1	835215	824827		0.8	0.4	28.22	28.24	ŀ	12.75	12.57	1.1	1.	03	8.08	7.94	4 <1
	9:54	Fine	M2	835536	824775		0.05	0.025	28.7		5	11.8	11.69	C	)	0	7.81	7.92	2 <1
	9:56	Fine	M3	835501	824648		0.02	0.01	29.1	29.18	3	12.86	13.51	C	)	0	8.46	8.4	5 <1
	9:43	Fine	C1	835110	824716		0.04	0.02	25.26	25.61		10.42	9.82	2.24	1 2.	25	7.71	7.8	3 3
	10:08	Fine	C2	835403	824470		0.02	0.01	28.59			10.65				0	7.52	7.58	
E /7/0000	N/A	Fine	C3	835642		N/A		N/A	N/A		N/A		N/A	N/A	N/A	N/A		N/A	N/A
5/7/2023	9:48	Fine	M1	835215	824827		0.8	0.4	28.36	28.43	3	12.83	11.98		) 2.	36	8.06	8.09	9 2.2
	10:03	Fine	M2	835536	824775		0.05	0.025	25.5	26.36	6	12.33	12.22	C	)	0	8.21	8.27	7 <1
	10:05	Fine	M3	835501	824648		0.02	0.01	28.75	28.82	2	13.18	12.64	C	)	0	8.35	8.3	5 <1
	9:30	Fine	C1	835110	824716		0.04	0.02	27.95	27.85		11.29	11.36	1.09		07	7.81	7.87	7 1.4
	9:55	Fine	C1 C2	835403	824470		0.04	0.02	27.93			10				07	8.08	8.14	
	9.55 N/A	Fine	C2 C3	835642		N/A		0.01 N/A	20.01 N/A	N/A	, N/A		N/A	N/A	N/A	 N/A		0.14 N/A	+
7/7/2023	9:35	Fine	<u></u>	835215	824827	IN/A	0.8	0.4				13.67				36	8.11	8.08	
	9:50	Fine	M1 M2	835536	824775		0.05	0.4	28.45			11.01	12.54			0	8.18	8.22	
	9:52	Fine	M2 M3	835501	824648		0.03	0.023	28.07			12.37			e	0	8.32	8.3	
	0.02	1 110	Me	000001	02 10 10		0.02	0.01	20.07	20.00	,	12.01	10.01			0	0.02	0.0	
	9:39	sunny	C1	835110	824716		0.04	0.02				9.87			5 2.	82	7.86	7.86	
	10:04	sunny	C2	835403	824470		0.02	0.01	28.83			9.95			)	0	8.1	8.18	
10/7/2023	N/A	sunny	C3	835642		N/A			N/A	N/A	N/A		N/A	N/A	N/A	N/A		N/A	N/A
10/1/2023	9:44	sunny	M1	835215	824827		0.8	0.4				11.23			3 3.	69	8.17	8.03	
	9:59	sunny	M2	835536	824775		0.05	0.025	28.67			12.83			)	0	8.27	8.3 <sup>-</sup>	
	10:01	sunny	M3	835501	824648		0.02	0.01	28.89	28.88	8	11.35	11.3	C	)	0	8.52	8.58	3  <1
	12:41	sunny	C1	835110	824716		0.04	0.02	24.96	24.42	2	10.3	10.34	1.3	3 1.	44	7.83	7.79	9 1.2
	13:05	sunny	C2	835403	824470		0.02	0.01	26.36			10.31				07	7.96	7.9	
40/7/0000	N/A	sunny	C3	835642		N/A			N/A		N/A		N/A	N/A	N/A	N/A		N/A	N/A
12/7/2023	12:15	sunny	M1	835215	824827		0.8	0.4	26.82			11.97				57	8.09	7.98	
	11:29	sunny	M2	835536	824775		0.05	0.025	28.29	28.33		10.97		1.26	δ 1.	14	8.26	8.19	
	11:43	sunny	M3	835501	824648		0.02	0.01	28.02	28.95	5	13.6	14.05	0.98	<u>0</u> .	95	8.49	8.5 <sup>-</sup>	1 <u>1.5</u>
	13:26	Fine	C1	835110	824716		0.04	0.02	23.91	24.15		12.06	11.89	0.95		91	7.64	7.7	7 2.4
	13:53	Fine	C2	835403	824470		0.04	0.02	25.63			10.06				26	7.99	8.05	
	N/A	Fine	C3	835642	824386	Ν/Δ			N/A		N/A			0.27 N/A	0. N/A	N/A		N/A	N/A
14/7/2023	13:31	Fine	<u>M1</u>	835215	824827	1 1/7 1	0.8	0.4				11.9				32	7.94	7.9	
	13:48	Fine	M1 M2	835536	824775		0.05	0.4	20.3			11.35				43	8.21	8.15	
	13:50	Fine	M2 M3	835501	824648		0.03	0.023	25.32			13				19	8.38	8.43	
	10.00			1 000001	02-10-10		0.02	0.01	20.02	20.04		10	12.70	1 0.10	0.		0.00	0.40	

		12:26	Fine	C1	835110	824716		0.04	0.02	2	27.01	27.02		9.52	9.67	.0.8	38	0.9	7.87	7.86	1.3
		12:42	Fine	C2	835403	824470		0.02	0.01		29.29	29.24		10.16			0	0	8.25	8.27	<1
	N/A		Fine	C3	835642		N/A		N/A	N/A			N/A		N/A	N/A	N/	A N/A	N/A		N/A
18/7/2023		11:48	Fine	M1	835215	824827		0.8	0.4		27.32	26.95		10.16				1.85	8.06	8.11	1.6
		11:02	Fine	M2	835536	824775		0.05	0.025		29.02	29.09		12.12				0.32	8.35	8.39	<1
		11:17	Fine	M3	835501	824648		0.02	0.01		28.46	28.36		11.75			0	0	8.36	8.46	<1
										_							÷				
		9:30	cloudy	C1	835110	824716		0.04	0.02		26.59	26.99		9	9.29	)	0	0	7.45	7.4	<1
		9:55	cloudy	C2	835403	824470		0.02	0.01		28.27	27.26		10.68			0	0	8.05	8.09	<1
00/7/0000	N/A		cloudy	C3	835642	824386	N/A		N/A	N/A			N/A		N/A	N/A	N/	A N/A	N/A		N/A
20/7/2023		9:35	cloudy	M1	835215	824827		0.8	0.4	-	26.6	27.1		9.34	10	)	0	0	8.14	8.06	<1
		9:50	cloudy	M2	835536	824775		0.05	0.025	5 2	27.53	27.37		10.95	10.96	6 0.1	17	0.18	8.27	8.36	1.0
		9:52	cloudy	M3	835501	824648		0.02	0.01	2	27.42	28.07		11.41	11.25	5	0	0	8.33	8.38	<1
		12:50	Fine	C1	835110	824716		0.04	0.02	2 2	23.04	25.09		12.24	11.46	5 1.8	36	1.88	6.88	6.85	2.5
		13:15	Fine	C2	835403	824470		0.02	0.01	2	24.55	24.78		9.34	9.3	3 1.5	55	1.43	6.9	6.93	1.3
22/7/2023	N/A		Fine	C3	835642	824386	N/A		N/A	N/A	N	I/A	N/A		N/A	N/A	N/	A N/A	N/A	4	N/A
22/1/2023		12:55	Fine	M1	835215	824827		0.8	0.4		21.02	21.13		13.47		2.9	98	3.03	7.3	7.26	1.8
		13:10	Fine	M2	835536	824775		0.05	0.025		27.73	27.68		10.52			44	1.52	8.64	8.67	2.6
		13:12	Fine	M3	835501	824648		0.02	0.01	2	27.37	27.56		13.59	13.57	7	0	0	8.48	8.55	<u>1.3</u>
		16:45	Fine	C1	835110	824716		0.04	0.02		26.05	26.29		10.95			)9	1.03	7.89	7.84	1.4
		17:10	Fine	C2	835403	824470		0.02	0.01		28.71	28.69		10.23		5	0	0	8.21	8.26	<1
24/7/2023	N/A		Fine	C3	835642		N/A		N/A	N/A			N/A		N/A	N/A	N/.		N/A		N/A
24/1/2023		16:50	Fine	M1	835215	824827		0.8	0.4		25.94	26.08		12.64			36	1.48	8.15	8.18	<1
		17:05	Fine	M2	835536	824775		0.05	0.025		27.81	27.79		10.52			0	0	8.57	8.63	<1
		17:07	Fine	M3	835501	824648		0.02	0.01		29.34	29.31		12.15	12.54	ł	0	0	8.4	8.47	<1
		13:06	Fine	<u>C1</u>	835110	824716		0.04	0.02		26.77	26.79		12.16				3.46	7.08	7.13	2.0
		13:31	Fine	C2	835403	824470		0.02	0.01		26.35	26.56		10.7			0	0	8.13	8.16	1.2
26/7/2023	N/A		Fine	C3	835642	824386	N/A			N/A			N/A		N/A	N/A	N/.		N/A		N/A
20,.,2020		13:11	Fine	M1	835215	824827		0.8	0.4		23.45	23.47		13.18				4.22	7.34	7.45	1.4
		13:26	Fine	M2	835536	824775		0.05	0.025		28.07	28.12		10.25				1.74	8.1	8.05	<1
		13:28	Fine	M3	835501	824648		0.02	0.01		20.24	26.3		11.06	11.08	3	0	0	8.07	8	<1
		10.56	Fina	C1	925110	904716		0.04	0.02			20.1		0.67	0.90				7 76	7 70	-1
		10:56 11:08	Fine Fine	C1 C2	835110 835403	824716 824470		0.04	0.02		28.69 27.68	28.1 27.63		9.67 9.39			0	0	7.76 7.9	7.79 7.86	<1
	N/A	11.00	Fine	C2 C3	835642		N/A		N/A	N/A			N/A		9.51 N/A	N/A	N/	A N/A	7.9 N/A		<1 N/A
28/7/2023		10:36	Fine	M1	835215	824827	IN/A	0.8	0.4		28.23	28.07		11.13			0		7.96	7.91	
		10:09	Fine	M1 M2	835536	824775		0.05			27.57	28.07		11.35			0		8.14	8.11	<1 <1
		10:09	Fine	M2 M3	835501	824648		0.05			27.91	27.54		11.11			0		8.01	8.03	<1 <1
		10.13		UND	000001	024040		0.02	0.01		-1.31	21.19		11.11	11.03	'I			0.01	0.03	
		11:17	Sunny	C1	835110	824716		0.04	0.02		28.25	28.33		9.41	9.89		0	0	7.85	7.81	<1
		11:34	Sunny	C2	835403	824470		0.04			29.29	20.33		9.62			0	0	8.06	8.06	<1
	N/A	11.04	Sunny	C2 C3	835642		N/A		N/A	N/A			N/A		9.91 N/A	N/A	N/		0.00 N/A		N/A
31/7/2023		10:50	Sunny	M1	835215	824827		0.8	0.4		27.96	28.09		10.11			.6	0.56	7.9	7.86	<1
		10:05	Sunny	M2	835536	824775		0.05	0.025		28.98	29.35		11.12			0	0.00	8.07	8.09	<1
		10:20	Sunny	M2 M3	835501	824648		0.03			28.32	29.04		10.8			0	0	8.16	8.28	<1
	1	.0.20	Canny	1010	000001	02-10-10		0.02	0.01			20.04		10.0	10.00	′I	~		0.10	0.20	

Remark 1: Values that are <1 is assumed to be 1 during calculation. Remark 2: Underline values indicated exceedance of limit level.

There were 0 exceedance of Action Level and 3 exceedances of Limit Level All exceedances were found non project related.

### Appendix S

### Impact Monitoring report for Ecology

### **Post-Transplantation Monitoring Report**

for Agreement No. CE 13/2009 (WS) IN-SITU REPROVISIONING OF SHA TIN WATER TREATMENT WORKS – SOUTH WORKS

> Report No. 107 July 2023

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6.	SUMMARY ERROR! BOOKMARK NOT DEFINED.

#### ANNEXES

 IN-SITU REPROVISIONING OF SHA TIN WATER TREATMENT WORKS - SOUTH WORKS-Post-Transplantation Monitoring

<u>Report</u>

#### 1. INTRODUCTION

- 1.1 Pursuant to the Environmental Impact Assessment (EIA) Ordinance, the Director of Environmental Protection (DEP) granted the Environmental Permit (No. EP- 494/2015) to the Water Supplies Department (WSD) to construct and operate the designated project for "In-situ Reprovisioning of Sha Tin Water Treatment Works - South Works" ("The Project").
- 1.2 Upon the requirement of the Environmental Permit, a detailed vegetation report presenting the baseline vegetation condition for flora species with conservation interest, transplanting and monitoring programme for the Project has been prepared and approved by DEP in February 2016.
- 1.3 There were 4 flora species of conservation importance were recorded in the woodland habitat within project site including Ailanthus (*Ailanthus fordii*), Incense Tree (*Aquilaria sinensis*), Lamb of Tartary (*Cibotium barometz*) and Hong Kong Eagle's Claw (*Artabotrys hongkongensis*). In total, 2 nos. of Incense Tree (*Aquilaria sinensis*), 1 no. of Ailanthus (*Ailanthus fordii*) tree, 5 colonies of Lamb of Tartary (*Cibotium barometz*) and 1 no. Hong Kong Eagle's Claw (*Artabotrys hongkongensis*) were recommended to be transplanted in the approved detailed vegetation survey report.
- 1.4 As planned in the detailed vegetation report, Incense Tree (*Aquilaria sinensis*) and Ailanthus (*Ailanthus fordii*) trees would be transplanted within existing Sha Tin Water Treatment Works (STWTW). All other shrubs including Lamb of Tartary (*Cibotium barometz*) and Hong Kong Eagle's Claw (*Artabotrys hongkongensis*) would be transplanted to the hillside slope at Sha Tin South Fresh Water Service Reservoir (STSFWSR).
- 1.2 Upon the requirement of the Environmental Permit, a qualified Ecologist was commissioned to prepare a post-transplantation monitoring report to present the status (health condition and survival rate) of transplanted vegetation and submitted to the DEP.
- 1.3 Monitoring of transplanted flora was conducted after the transplantation. The monitoring will be conducted at twice per month during the first year and once per month during the course of planting works. The parameters to be monitoring will include the health condition and survival rate of the transplanted flora. Any observations and recommendations will be reported in monthly EM&A reports.
- 1.3 This Tree Report presents survey findings on 24 July 2023. It contains the following information:
  - Introduction (Section 1);
  - Description of Tree Monitoring Area (Section 2);
  - Monitoring Methodology (Section 3);
  - Result (Section 4);
  - Mitigation Measures (Section 5);
  - Summary (Section 6);

- Photos (Annex I);
- Summary table (Annex II); and
- Typhoon information (Annex III).

#### 2. DESCRIPTION OF TREE MONITORING SITE

- 2.1 Incense Tree (*Aquilaria sinensis*) and Ailanthus (*Ailanthus fordii*) tree were transplanted to the extended compensatory plantation area within existing Sha Tin Water Treatment Works (STWTW). The area was flat and without covering with concrete.
- 2.2 Lamb of Tartary (*Cibotium barometz*) will be transplanted to the Sha Tin South Fresh Water Service Reservoir (STSFWSR). Ploughing is required before planting on to this open corner of short grassland.
- 2.3 Other compensatory trees have been planted at STWTW and STSFWSR.

#### 3. MONITORING METHODOLOGY

- 3.1 Site inspection was carried out by walking through the transplanting area. Health condition and survival rate were observed during inspection.
- 3.4 Health condition of all transplanted vegetation including trees/shrubs surveyed was evaluated according to the following criteria:
  - Transplanted vegetation with good health is classified as **good**;
  - Transplanted vegetation with few or no visible defects or health problems is classified as being **fair**; and
  - Transplanted vegetation that was badly damaged or clearly suffering from decay die back or the effects of very heavy vine growth is classified as **poor**.
- 3.5 Survival rate for each of transplanted vegetation species will be calculated based on site observation.

#### 4. **RESULT**

- 4.1 The monthly monitoring inspection was conducted on 24 July 2023.
- 4.2 Three trees TA572, TA326 and TA327 were transplanted to tree compensation area within the Sha Tin Water Treatment Works (STWTW) on 20 June 2016.
- 4.3 The condition of TA572 was observed in fair health despite in poor form due to the damage of the two main trunks. TA327 was in poor condition. The already dead tree TA326 collapsed

#### IN-SITU REPROVISIONING OF SHA TIN WATER TREATMENT WORKS - SOUTH WORKS-Post-Transplantation Monitoring

<u>Report</u>

due to big hit by the Signal No.10 typhoon Mangkhut on 16 September 2018. Tree guying cables have been installed to provide external support to the remaining two transplanted trees.

- 4.4 The joint site meeting with our ecologist, Project Manager, Contractor and Landscape Contractor on 20 October 2020 revealed that the designated recipient site at STSFWSR was under excessive exposure of direct sunlight, strong winds, far from riparian zone/ moist valley and low in soil moisture. This was not a favourable microhabitat for *Cibotium barometz* to be transplanted back. Two best portions within this recipient site would be a corner with shading canopy from trees on a man-made feature nearby; as well as understory zone of an existing tree. Mitigation measures are proposed in Section 5 to enhance a sustainable survival of *Cibotium barometz* during the post-transplantation stage.
- 4.5 All 27 nos. of *Cibotium barometz* transplanted from the nursery at Shui Mei Tsuen, Kam Tin were generally in fair condition at their current location at STSFWSR.
- 4.6 The Hong Kong Eagle's Claw (*Artabotrys hongkongensis*) was observed dead during inspection on 20 August 2016.
- 4.7 The transplantation of the 27 nos. of *Cibotium barometz* and the compensatory planting of TA326 and the climber *Artabotrys hongkongensis* have been conducted as detailed in Section 5.

#### 5. MITIGATION MEASURE

5.1 In order to compensate for the loss of the transplanted *Artabotrys hongkongensis* which is in climber growing form, it is recommended to plant an individual of native climber species at the compensatory planting site together with compensatory tree planting. Recommended list of species is given in the Table 1 below. It is suggested that about 1 species of climber to be selected from the following list according to availability of the nursery source. The recommended plant species have been recorded from adjacent secondary woodland in an approved EIA Report (AEIAR-187/2015). These species would have certain ecological value in terms of plant ecology and the associated wildlife including birds.

Common Name	Latin Name	Chinese Name	Growing Form
Climbing Bauhinia	Bauhinia glauca	粉葉羊蹄甲	Climber
Spiny-fruited Vine	Byttneria aspera	刺果藤	Climber
Bentham's Rose-wood	Dalbergia benthamii	兩廣黃檀	Climber
Desmos	Desmos chinensis	假鷹爪	Climber
Glaucescent Diploclisia	Diploclisia glaucescens	蒼白秤鈎風	Climber
Luofushan Joint-fir	Gnetum luofuense	羅浮買麻藤	Climber
Australian Cow-plant	Gymnema sylvestre	匙羹藤	Climber
Shining Hypserpa	Hypserpa nitida	夜花藤	Climber
Large-flowered	Lonicera macrantha	大花忍冬	Climber
Honeysuckle	Lonicera macranina		
Splash-of-white	Mussaenda pubescen	玉葉金花	Climber
Rusty-haired Raspberry	Rubus reflexus	鏽毛莓	Climber
Sandpaper Vine	Tetracera asiatica	錫葉藤	Climber
Hong Kong Eagle's Claw	Artabotrys hongkongensis	鷹爪花	Climber

Table 1. Table for Recommended native climber species list to be planted

- 5.2 *Desmos chinensis* has been finalized as the candidate. Two individuals were planted at Wall C in STWTW on 1 April 2021 (Annex I).
- 5.3 New small sprouts keep emerging from the two *Desmos chinensis* that have been reported dead previously. Construction materials was also found too close to the planter. An eye-catching protective fence shall be set up as a protection zone. No construction materials shall be placed near/ within the protection zone.
- 5.4 All 27 nos. Lamb of Tartary (*Cibotium barometz*) were transplanted successfully back to Portion E of STSFWSR on 23 April 2021 (Annex I). In order to enhance a sustainable survival

#### <u>IN-SITU REPROVISIONING OF SHA TIN WATER TREATMENT WORKS – SOUTH WORKS–Post-Transplantation Monitoring</u> Report

during the post-transplantation stage, a shelter (such as 遮光網) has been installed to reduce intensity of direct sunlight received and avoid direct hit of rainstorm/ typhoon.

- 5.5 Transplanted *Cibotium barometz* shall be watered at least once in the morning and once in the afternoon; before irrigation spray head has been installed to facilitate watering frequency whenever necessary.
- 5.6 An eye-catching protective net has been set up to enclose the 27 nos. transplanted *Cibotium barometz* (in groups when planted together) to avoid disturbance/ damage from works activities. Any collapsed shelter and fencing shall be rectified promptly.
- 5.7 Sign of disturbance by wild boar(s) were found at the two groups of transplanted *Cibotium barometz* previously. A robust fencing was installed so as to prevent them from any further disturbance.
- 5.8 Weeding within the two protection zones of *Cibotium barometz* shall only be conducted by hand-held tools rather than grass cutting machine. No fire/ chemical weeding shall be allowed.
- 5.9 The 27 nos. transplanted *Cibotium barometz* shall be maintained with proposed mitigated measures mentioned for 12 months for establishment. A 12-month post-transplantation monitoring period helps to assess their survival during the establishment period.
- 5.10 Any dead individuals/ those in poor condition before transplant back to STSFWSR or during the post-transplantation period shall be replaced by planting healthy individuals of *Cibotium barometz*. Other possible fern candidate such as *Brainea insignis*, which is more adaptive to more exposed habitat under direct sunlight, can be sourced for compensatory planting.
- 5.11 Root ball of TA572 and TA327 tree should be kept moisture especially during non-raining day.
- 5.12 The Incense Tree (*Aquilaria sinensis*) tagged as TA326 was observed dead during inspection on 10 August 2017. Its DBH was measured as 346mm. In accordance with the Tree Preservation, Development Bureau Technical Circular (Works) No. 7/2015, the compensatory planting aimed to achieve the compensatory planting ratio of 1:1 in terms of aggregated DBH.
- 5.13 In total, 3 individual of native tree species with heavy standard size were planted with 2.5-3 meters (center to center) spacing at compensatory planting site. Recommended list of species was given in the Table 2 below. It was suggested that at least 1 tree species to be selected from the following list according to availability of the nursery source. The recommended plant species was recorded from adjacent secondary woodland in an approved EIA Report (AEIAR-

187/2015). These species would have certain ecological value in terms of plant ecology and the associated wildlife including birds.

Common Name	Latin Name	Chinese Name	Growing Form
Ivy Tree	Schefflera heptaphylla	鴨腳木	Tree
Levine's Syzygium	Syzygium levinei	山蒲桃	Tree
Chekiang Machilus	Machilus chekiangensis	浙江潤楠	Tree
Aporusa	Aporusa dioica	銀柴	Tree
Mountain Tallow Tree	Sapium discolor	山烏桕	Tree
Fragrant Litsea	Litsea cubeba	山蒼樹	Tree
Chinese Apea Ear-ring	Archidendron lucidum	亮葉猴耳環	Tree
Chinese Hackberry	Celtis sinensis	朴樹	Tree
Turn-in-the-wind	Mallotus paniculatus	白楸	Tree
Acronychia	Acronychia pedunculata	降真香	Tree

Table 2. Table for recommended native tree species list to be planted

- 5.14 Based on the Tree Survey Report, the following trees transplanted under Contract No.
   3/WSD/15 were found dead. In accordance with GS 3.97 (3), replacement planting of TB0054, B0056, TB0101 and TC0138 was completed on 25 March 2021 (Annex I).
- 5.15 Two *Syzygium levinei* and one *Schefflera heptaphylla* were chosen from Table 2 as compensation for the loss of TA0326.
- 5.16 However, the two native *Syzygium levinei* (山蒲桃) were mis-planted by two exotic *Syzygium jambos* (蒲桃), of which both of their Chinese names and Scientific names are different by one word.
- 5.17 The two mis-planted *Syzygium jambos* were then replaced by another native tree species *Celtis sinensis* chosen from Table 2 due to market availability at that time. Replacement work was conducted on 31 May 2021.

Tree No.	Species	Compensatory/ Replacement Planting
TA0326	Aquilaria sinensis 土沉香	Compensated by 1 no. of <i>Schefflera heptaphylla</i> and 2 nos. of <i>Celtis sinensis</i>

- Table 3. Summary table compensatory planting.
- 5.18 With completion of compensatory planting for the loss of *Artabotrys hongkongensis* and TA0326 (*Aquilaria sinensis*), the survival of the replaced species has been monitored since then (i.e. 2 nos. of *Desmos chinensis*; 1 no. of *Schefflera heptaphylla* and 2 nos. of *Celtis sinensis*).
- 5.19 Survival of the 27 nos. of Lamb of Tartary (*Cibotium barometz*) transplanted back to STSFWSR has also been monitored too. No more individual was stored at the nursery.
- 5.20 Health condition and survival rate are shown in Annex II.

# 6. SUMMARY

- 6.1 The condition of TA572 was observed in fair health despite in poor form. TA327 was in poor condition; while already dead TA326 collapsed under Signal No. 10 typhoon Mangkhut in September 2018. Tree guying cables have been installed to provide external support to the two remaining transplanted trees.
- 6.2 Compensatory planting of TA326 has been completed on 25 March 2020 by planting two *Syzygium levinei* and one *Schefflera heptaphylla*. However, the two native *Syzygium levinei* were mis-planted by two exotic *Syzygium jambos*, which have been replaced by another native tree species *Celtis sinensis* on 31 May 2021.
- 6.3 *Desmos chinensis* has been finalized as the candidate to compensate for the loss of *Artabotrys hongkongensis*. Two individuals were planted at Wall C in STWTW on 1 April 2021.
- 6.4 New small sprouts keep emerging from the two *Desmos chinensis* that have been reported dead previously. Construction materials was also found too close to the planter. An eye-catching protective fence shall be set up as a protection zone. No construction materials shall be placed near/ within the protection zone.
- 6.5 In order to enhance a sustainable survival during the post-transplantation stage, a shelter (such as 遮光網) has been installed to reduce intensity of direct sunlight received and avoid direct hit of rainstorm/ typhoon to the 27 nos. of transplanted *Cibotium barometz* at Portion E of STSFWSR.
- 6.6 Regular irrigation, set up of protection zone and weeding by hand held tools within protection zone, shall also be provided to the transplanted/ compensated plants in order to sustain their survival during the post-transplantation (establishment) stage.
- 6.7 Root ball of TA572 and TA327 tree should be kept moisture especially during dry and non-raining day.
- 6.8 Signs of ploughed soil by wild boar(s) at the two groups of transplanted *Cibotium barometz* were reported in previous monitoring. A robust fencing was recently installed to protect the group of *Cibotium barometz* from further damage caused by wild boars.
- 6.9 Given that leftover/ garbage was observed nearby, illegal feeding of wild pigs or other wild animals was also suspected to occur. Warning signs of illegal feeding and plant protection zone may be put along the receptor site to remind the hikers. Reporting the case to the relevant government department, i.e. AFCD, is suggested to prevent further aggregation of wild boars in the area.

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# ANNEX I

Photo

<u>IN-SITU REPROVISIONING OF SHA TIN WATER TREATMENT WORKS – SOUTH WORKS–Post-Transplantation Monitoring</u> <u>Report</u>



climbers and grass start emerging again after recent weeding clearance.

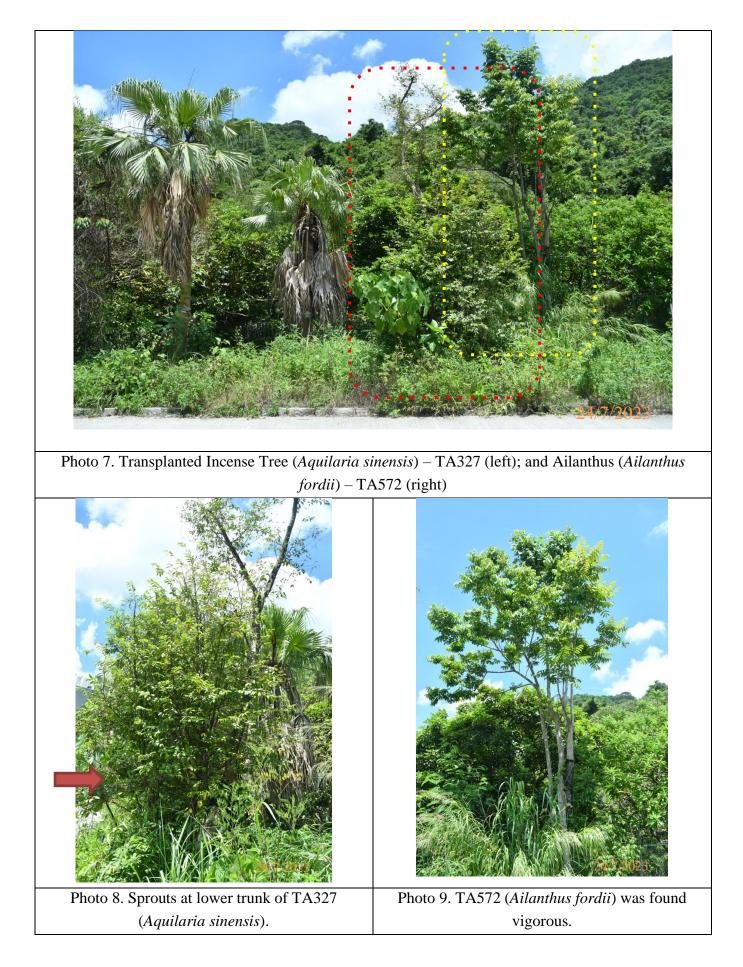
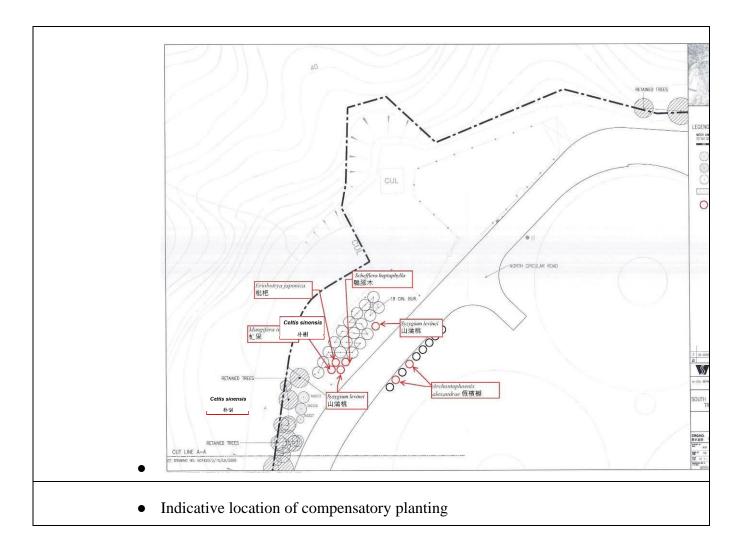


Photo 10. New sprouts keep emerging from the	Photo 11. Schefflera heptaphylla as compensatory
Desmos chinensis that reported dead previously.	planting of TA326
Construction materials nearby have been taken	
away.	



Photo 12 and 13. The two exotic *Syzygium jambos* (mis-treated as the native *Syzygium levine*i) are replaced by another native tree *Celtis sinensis* (due to market availability) as compensatory planting of TA326. Fast-growing climber (red arrows) was found covering one of the planted *Celtis sinensis*. The climber shall be removed.



# **<u>ANNEX II</u>** Table for condition of transplanted plant

No.	Species	Condition	Alive/Dead	Remark
1	Cibotium barometz	Fair	Alive	
2	Cibotium barometz	Fair	Alive	
3	Cibotium barometz	Fair	Alive	27 individuals were
4	Cibotium barometz	Fair	Alive	transplanted back to
5	Cibotium barometz	Fair	Alive	STSFWSR on 23 April
6	Cibotium barometz	Fair	Alive	2021.
7	Cibotium barometz	Fair	Alive	
8	Cibotium barometz	Fair	Alive	The shelter has been
9	Cibotium barometz	Fair	Alive	repeatedly damaged by
10	Cibotium barometz	Fair	Alive	wild boars, resulting the
11	Cibotium barometz	Fair	Alive	plants vulnerable to
12	Cibotium barometz	Fair	Alive	uprooting. Some
13	Cibotium barometz	Fair	Alive	individuals were exposed
14	Cibotium barometz	Fair	Alive	under direct sunlight due
15	Cibotium barometz	Fair	Alive	to the damage of shelter.
16	Cibotium barometz	Fair	Alive	A robust protection zone
17	Cibotium barometz	Fair	Alive	was recently set up in
18	Cibotium barometz	Fair	Alive	February 2023 which
19	Cibotium barometz	Fair	Alive	should prevent the plants
20	Cibotium barometz	Fair	Alive	from further disturbance
21	Cibotium barometz	Fair	Alive	by the wild boars. Any
22	Cibotium barometz	Fair	Alive	illegal feeding by hikers
23	Cibotium barometz	Fair	Alive	shall be reported to
24	Cibotium barometz	Fair	Alive	AFCD/ hotline 1823.
25	Cibotium barometz	Fair	Alive	
26	Cibotium barometz	Fair	Alive	
27	Cibotium barometz	Fair	Alive	
	The shelter (such as 遮光	治網) has been set up	p to provide shadir	ng and against direct hit of
		rainstorm/ typho	oon on the plants.	

Fern Cibotium barometz and climber Desmos chinensis

28	Desmos chinensis	Poor-Fair	Alive	Two individuals were
				planted at Wall C in
				STWTW on 1 April 2021;
				Resprouted since
				monitoring made on 30
				November 2022
		Survival rate (%)	100	

No.	Species	Condition	Alive/Dead	Remark
TA572	Ailanthus fordii	Fair	Alive	Two main trunks were
				broken during typhoon
				on 23 August 2017.
				Canopy formed by
				sprouts.
TA327	Aquilaria sinensis	Fair	Alive	Tree crown of TA327
				was thinner after
				transplantation. Water
				sprouts, cracks on tree
				bark and would at trunk
				base observed.
N/A	Celtis sinensis	Fair	Alive	Compensate for TA326;
				Syzygium jambos
				replaced by Celtis
				sinensis on 31 May
				2021.
N/A	Celtis sinensis	Fair	Alive	Compensate for TA326;
				Syzygium jambos
				replaced by Celtis
				sinensis on 31 May
				2021.
N/A	Schefflera	Fair	Alive	Compensate for TA326
	heptaphylla			
		Survival rate (%)	100%	

Transplanted/ compensatory Trees

# Appendix T Monthly Summary of Waste Flow Table

## Monthly Summary Waste Flow Table for 2023

Contract No.: 1/WSD/19

## Contract Title: In-situ Reprovisioning of Sha Tin Water Treatment Works (South Works) -Water Treatment Works and Ancillary Facilities

		Actual Quantities of Iner	t C&D Materials C	enerated / Imported	(in '000m3)			Actual Qua	ntities of C&D Wastes (	Generated	
		Broken Concrete							Plastics		
Mand		(including rock for				Imported		Paper/	(bottles/containers,plas		Others, e.g.
Month	Total Quantity	recycling into	Reused in the	Reused in other	Disposed as	C&D		cardboard	tic sheets/foam	Chemical	general
	Generated	aggregates)	Contract	Projects	Public Fill	Material	Metals	packaging	package material)	Waste	refuse
	(a+b+c+d)	(a)	(b)	( c)	(d)		(in '000kg)	(in '000kg)	(in '000kg)	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )
Jan	29.38182	0.14400	0.00000	28.90055	0.33727	0.45850	0.0000	0.00000	0.00000	0.00000	0.01788
Feb	20.99489	0.17365	0.00000	20.69526	0.12598	0.14700	52.3700	0.00000	0.00000	0.00000	0.03906
Mar	25.42917	1.30078	0.00000	24.07151	0.05688	1.25313	100.8400	0.00000	0.00000	0.00000	0.02243
Apr	16.76824	2.55390	1.02564	12.46633	0.72238	3.31953	9.1200	0.00000	0.00000	0.00000	0.03613
May	23.46874	0.62600	0.00000	22.28436	0.55838	2.49430	0.0000	0.00000	0.00000	0.00000	0.03846
Jun	6.92783	1.33264	0.00000	5.22261	0.37258	0.07696	34.0300	0.00000	0.00000	0.00000	0.04152
Sub-total	122.97067	6.13097	1.02564	113.64060	2.17346	7.74942	196.3600	0.00000	0.00000	0.00000	0.19548
Jul	10.56259	0.11353	0.00000	10.14166	0.30740	1.40670	0.0000	0.00000	0.00000	0.00000	0.08802
Aug	0.00000										
Sep	0.00000										
Oct	0.00000										
Nov	0.00000										
Dec	0.00000										
Total	133.53326	6.24450	1.02564	123.78227	2.48086	9.15612	196.36000	0.00000	0.00000	0.00000	0.28350



Name of Department: WSD

Contract No.: 6/WSD/21

#### Monthly Summary Waste Flow Table for 2023 (year)

		Actual Quantities	of Inert C&D N	laterials Generate	ed Monthly		Actua	l Quantities of	f C&D Wastes	Generated Mo	onthly
Month	Total Quantity Generated	Hard Rock and Large Broken Concrete		Reused in other Projects		Imported Fill	Metals	Paper/ cardboard packaging		Chemical Waste	Others, e.g. general refuse
	(in tonnes)	(in tonnes)	(in tonnes)	(in tonnes)	(in tonnes)	(in tonnes)	(in tonnes)	(in tonnes)	(in tonnes)	(in tonnes)	(in tonnes)
2022	12958.40	0.00	0.00	10000.00	2695.72	207.15	19.43	0.19	0.01	0.00	35.90
Jan-23	964.64	0.00	0.00	957.42	0.00	0.00	0.00	0.02	0.00	0.00	7.20
Feb-23	9404.28	0.00	0.00	7518.52	1880.86	0.00	2.73	0.00	0.00	0.00	2.17
Mar-23	910.01	0.00	0.00	540.37	0.00	332.17	29.73	0.00	0.00	0.00	7.74
Apr-23	5806.90	0.00	0.00	1724.82	2665.37	1404.55	4.12	0.09	0.01	0.00	7.93
May-23	2484.77	0.00	0.00	1301.97	601.63	569.10	0.00	0.00	0.00	0.00	12.07
Jun-23	2813.62	0.00	0.00	46.96	1754.73	994.78	6.23	0.05	0.00	0.00	10.86
Sub-total	22384.21	0	0	12090.06	6902.59	3300.603	42.8123	0.1632	0.0197	0	47.97
Jul-23	2598.37	0	0	616.25	1972.09	0.00	0	0.0464	0.0083	0	9.98
Aug-23											
Sep-23											
Oct-23											
Nov-23											
Dec-23											
Total	37940.99	0.00	0.00	22706.31	11570.40	3507.75	62.25	0.40	0.04	0.00	93.85

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) All recyclable materials, including metals, paper / carboard packaging, plastics, etc. will be collected by registered collector for recycling.

(4) Conversion factors for reporting purpose:

in-situ: rock = 2.5 tonnes/m3; soil = 2.0 tonnes/m3

excavated: rock = 2.0 tonnes/m3; soil = 1.8 tonnes/m3; broken concrete and bitumen = 2.4 tonnes/m3

C&D Waste = 0.9 tonnes/m3; bentonite slurry = 2.8 tonnes/m3

# Appendix U Implementation Schedule of Environmental Mitigation Measures (EMIS)

#### Environmental Mitigation and Enhancement Measure Implementation Schedule at Construction Stage

EIA Ref.	Recommended Mitigation Measures	Location of the	Implementation	Relevant Legislation	Implementation Phase			Status
		Measures	Agent	and Guidelines	D	с	0	
Air Quality								
4.7.1	Use of regular watering to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather.	All works areas	Contractor	Air Pollution Control		$\checkmark$		Y
4.7.1	Side enclosure and covering of any aggregate or stockpiling of dusty material to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines.	All works areas	Contractor	Ordinance and Air Pollution Control (Construction		$\checkmark$		Y
4.7.1	Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations.	All works areas	Contractor	Dust) Regulation		$\checkmark$		Y
4.7.1	Establishment and use of vehicle wheel and body washing facilities at the exit points of the site.	All works areas	Contractor			$\checkmark$		Y
4.7.1	Imposition of speed controls for vehicles on site haul roads.	All works areas	Contractor			$\checkmark$		Y
4.7.1	Implement EM&A program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise.	All works areas / Monitoring points	Contractor					Y
Noise		20 ) //						
5.6.4	Implement good site practices to reduce noise level	All works areas	Contractor	Noise Control Ordinance		$\checkmark$		Y
5.6.5	Adoption of Quiet PME	All works areas	Contractor			$\checkmark$		N/A
5.6.6	Use of Movable Noise Barrier	All works areas	Contractor	-		$\checkmark$		N/A
5.8	Noise monitoring	Monitoring points	Contractor			$\checkmark$		Y
Water Quality	1							
6.8.1	Surface run-off from construction sites should be discharged into storm drains via adequately designed sand/silt removal facilities such as sand	All works areas	Contractor	ProPECC PN 1/94 Construction		$\checkmark$		Y

	traps, silt traps and sedimentation basins. Channels or earth bunds or sand bag barriers should be provided on site to properly direct			Site Drainage		
	stormwater to such silt removal facilities. Perimeter channels at site			TM-DSS		
	boundaries should be provided where necessary to intercept storm			111 055		
	run-off from outside the site so that it will not wash across the site.			Water Pollution		
	Catchpits and perimeter channels should be constructed in advance of			Control		
	site formation works and earthworks.			Ordinance		
6.8.2	Silt removal facilities, channels and manholes should be maintained and	All works areas	Contractor			
	the deposited silt and grit should be removed regularly, at the onset of				$\checkmark$	Y
	and after each rainstorm to prevent local flooding.					
6.8.3	Temporary exposed slope surfaces should be covered and temporary	All works area	Contractor			
	access roads should be protected by crushed stone or gravel, as					
	excavation proceeds. Intercepting channels should be provided to				$\checkmark$	Y
	prevent storm run-off from washing across exposed soil surfaces.					
6.8.4	Earthworks final surfaces should be well compacted and the subsequent	All works areas	Contractor			
	permanent work or surface protection should be carried out immediately				79,51	
	after the final surfaces are formed to prevent erosion caused by					N/A
	rainstorms. Appropriate drainage like intercepting channels should be					
	provided where necessary.					
6.8.5	Rainwater pumped out from trenches or foundation excavations should	All works areas	Contractor		$\checkmark$	Y
	be discharged into storm drains via silt removal facilities.				V V	T
6.8.6	Open stockpiles of construction materials (e.g. aggregates, sand and fill	All works areas	Contractor			
	material) on sites should be covered with tarpaulin or similar fabric					Y
	during rainstorms.					
6.8.7	Manholes (including newly constructed ones) should always be	All works areas	Contractor			
	adequately covered and temporarily sealed so as to prevent silt,					Y
	construction materials or debris from getting into the drainage system.	2				
6.8.8	Good site practices should be adopted to remove rubbish and litter from	All works areas	Contractor			
	construction sites so as to prevent the rubbish and litter from spreading					Y
NC // C.N.C.S	from the site area.					
6.8.9	All vehicles and plant should be cleaned before they leave a construction	All works areas	Contractor			
	site to minimize the deposition of earth, mud, debris on roads. A wheel				1	
	washing bay should be provided at every site exit if practicable and					Y
	wash-water should have sand and silt settled out or removed before					
	discharging into storm drains.					
6.8.10	Before commencing any demolition works, all drainage connections	All works areas	Contractor			N/A
	should be sealed to prevent building debris, soil, sand etc. from entering					

	drains.		
6.8.11	Wastewater generated from building construction activities including concreting, plastering, internal decoration, cleaning of works and similar activities should not be discharged into the stormwater drainage system. If the wastewater is to be tankered off site for disposal into foul sewers, it should undergo the removal of settleable solids in a silt removal facility, and pH adjustment as necessary.	All works areas	Contractor
6.8.12	Acidic wastewater generated from acid cleaning, etching, pickling and similar activities should be neutralized to within the pH range of 6 to 10. The neutralized wastewater should be tankered off site for disposal into foul sewers or treated to a standard acceptable to storm drains and the receiving waters.	All works areas	Contractor
6.8.13	All surface run-off must proper collected and discharge at designated location. The discharge quality must meet the requirements specified in the discharge license.	All works areas	Contractor
6.8.15	Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.	All works areas	Contractor
6.8.16	Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges	All works areas	Contractor
6.8.17	Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance.	All works areas	Contractor
6.8.18	Sewage generated from the workforce should be properly treated by interim treatment facilities, such as chemical toilets which are properly maintained with the employment of licensed collectors for the collection and disposal on a regular basis.	All works areas	Contractor
6.8.19	Adopt relevant measures stated in ETWB TC (Works) No. 5/2005 "Protection of Natural Streams/rivers from Adverse Impacts arising from Construction Works" to minimize the potential water quality impacts from the construction works near any water courses.	All works areas	Contractor
6.10	Water quality monitoring	Monitoring points	Contractor

7.6.1	Appropriate waste handling, transportation and disposal methods for all waste arisings generated during the construction works for the Project should be implemented to ensure that construction wastes do not enter the nearby streams or drainage channel.	All works areas	Contractor	Waste Disposal Ordinance DEVB TCW No.	10	V <sup>e</sup>	Y				
7.6.2	Implementation of good site practices for waste management	All works areas	Contractor	6/2010,		1	Y				
7.6.3	Implementation of trip ticket system to control waste disposal	All works areas	Contractor	ETWB TCW No. 19/2005 Land (Miscellaneous Provisions) Ordinance Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes						V	Y
7.6.4	Implementation of good site practices to reduce waste generations	All works areas	Contractor			V	Y				
7.6.5	Re-use of excavated C&D materials on site as far as practical. A suitable area should be designated within the site for temporary stockpiling of C&D material and to facilitate the sorting process.	All works areas	Contractor			V	Y				
7.6.8	General refuse should be stored in enclosed bins or compaction units separate from C&D material. A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material.	All works areas	Contractor		on the Packaging, Labelling and Storage of	on the Packaging,		V	Y		
7.6.9	All storage of asbestos waste should be carried out properly in a secure place isolated from other substances so as to prevent any possible release of asbestos fibres into the atmosphere and contamination of other substances. The storage area should bear warning panels to alert people of the presence of asbestos waste.	All works areas	Contractor				1	N/A			
7.6.10	A licensed asbestos waste collector will be appointed to collect the asbestos waste and deliver to the designated landfill for disposal. Application should be submitted to EPD.	All works areas	Contractor		2	1	N/A				
7.6.11	If chemical wastes were to be produced at the construction site, the Contractor would be required to register with the EPD as a Chemical Waste Producer, and to follow the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor shall use a licensed collector to transport the chemical wastes. The licensed collector shall deliver the waste to the Chemical Waste Treatment Centre at Tsing Yi, or other licenced facility, in accordance with	All works areas	Contractor			<b>V</b>	Y				

	the Waste Disposal (Chemical Waste) (General) Regulation.					
Ecology			1	200 200		
8.8.1	Ecological impacts on important habitats and the associated wildfile caused by the proposed development should be mitigated and compensation approaches to the maximum practical extent	All works areas in particular important	The Engineer/ Contractor	EIAO-TM EM&A Manual	1	Y
8.8.2	Reduce the amount of vegetation removal required and thereby minimize the footprint of the slope at the woodland habitat	habitats All works areas	The Engineer/ Contractor		$\checkmark$	Y
8.8.3	Conduct detailed vegetation survey and implement suggested measures for species of conservation importance.		The Engineer/ Contractor		$\sim$	Y
8.8.4	The affected Incense Tree and Ailanthus as mentioned in the detailed vegetation survey report within the works area will be transplanted		The Engineer/ Contractor		~	Y
8.8.5	To avoid impacts on Short-nosed Fruit Bat, the tree with records of an active roost and trees showing evidence of roosting activity should be retained where possible. Where Chinese Fan-palm (Livistona chinensis) removal is required, these should be checked by suitably qualified ecologist with over 7 years relevant experience for roosting bats prior to their removal. If roosting bats are observed, a strategy for passive removal will be agreed with the AFCD and implemented. This could include undertaking the works just after the bats have left the roost (i.e. dusk).	•	The Engineer/ Contractor	_	~	N/A
8.8.6	The inclusion of Chinese Fan-palm of similar size as the affected plant within the areas of compensatory planting or other suitable areas is recommended to replace affected specimens, and compensate for the impact to roosting opportunities for this bat species		The Engineer/ Contractor		$\sim$	N/A
8.8.7	Implement good site measures to minimize the disturbance impacts to terrestrial habitat and associated wildlife arising from the land-based construction activities.		The Engineer/ Contractor		1	Y
8.8.8	To minimize the contamination of wastewater discharge, accidental chemical spillage and construction site run-off to the receiving water bodies, mitigation measures such as diverting the site runoff to silt trap facilities before discharging into storm drain, proper waste and dumping management and standard good site practice for land-based construction.		The Engineer/ Contractor		N	Y
8.8.9-8.8.11	Implement woodland compensation		The Engineer/ Contractor	-	$\sim$	N/A

Landscape and						
9.8.1	Existing tress to be retained on site shall be carefully protected during construction. Trees unavoidably affected by the works shall be transplanted as far as possible.	All works areas	Contractor	DEVB TCW No. 10/2013	$\checkmark$	Y
	Compensatory Planting shall be provided in accordance with DEVB TCW No. 10/2013 – Tree Preservation.	All works areas	Contractor	EIAO TM	1	Y
	Control of night-time lighting glare.	All works areas	Contractor		$\checkmark$	Y
	Erection of decorative screen hoarding compatible with the surrounding setting.	All works areas	Contractor		$\checkmark$	Y
	Management of facilities on work sites which give control on the height and disposition/arrangement of all facilities on the works site to minimize visual impact to adjacent VSRs.	All works areas	Contractor		~	Y
Cultural Herita	age					
10.6.2	Vibration monitoring at Ex KCR Beacon Hill Tunnel during piling works of Administration Building	Work site	The Engineer /Contractor		$\checkmark$	N/A
Land Contami	nation					
11.7	Identify contamination and implement appropriate remedial measures on site. Provide relevant submission and obtain approval from EPD if necessary.	All works areas	Contractor	Guidance Note for Contaminated Land Assessment and Remediation Guidance Manual for Use of Risk based Remediation Goals for Contaminated Land Management (Guidance Manual)	1	N/A
Hazard to Life			[	Transmoster		
Table 12.22	Ensure speed limit enforcement is specified in the contractor's Method Statement to limit the speed of construction vehicles on site	All works areas	The Engineer	EIAO-TM	$\checkmark$	Y
	Develop an audit procedure to ensure enforcement of speed limits and to ensure adequate site access control	All works areas	The Engineer		$\checkmark$	Y
	Ensure construction method statement is endorsed by the Engineer (AECOM)	All works areas	The Engineer		√	Y

Ensure designated manoeuvring area for the new access road construction is away from the Chlorination House	New access road area	Contractor/ The Engineer	$\checkmark$	Y
Ensure that the emergency response plan and procedures (including drills) cover the reprovisioning activities	All works areas	Contractor/ The Engineer	$\checkmark$	Y
Safety training to be provided to construction workers and WSD/Engineer staff regarding evacuation procedures	All works area	Contractor/ The Engineer		Y
Ensure communication protocol is in place between construction and operation staff with regard to the change of chlorine delivery route and the switchover from the existing to new chlorinated water piping;	All works areas	Contractor/ The Engineer	~	N/A
Ensure temporary suspension of crane operation and construction truck movements during chlorine delivery	All works areas	Contractor/ The Engineer	1	Y
Provide a crash barrier between the construction site and the north side of the Chlorination House.	Chlorination House area	Contractor	$\checkmark$	Y
Conduct vibration monitoring at the Chlorination House during piling activities to ensure vibration levels are acceptable and will not lead to any damage of the Chlorination House	Chlorination House area	Contractor	~	Y
Civil engineering calculation to be performed to confirm differential settlement from excavation work is within acceptable limits for the Chlorination House	Chlorination House area	Contractor	1	Y
Provide settlement monitoring for the Chlorination House to ensure no subsidence occurs from nearby excavation works.	Chlorination House area	Contractor	$\checkmark$	Y
Confirm the chlorine concentration for the chlorinated water before the switchover from the existing to new piping. This is to avoid the potential for chlorine gas vapours being released if the concentration is too high and there is spillage during switchover	Chlorinated water piping	WSD		N/A
Develop an operating procedure for performing the chlorinated water switchover from the existing piping to new piping.	All works areas	Contractor/ The Engineer / WSD	1	N/A
Ensure the location/height of the lifting equipment is such there is no impact on Chlorination House/chlorine delivery route in case of falling, swinging or dropped load.	Chlorination House area	Contractor/ The Engineer	1	Y
Implement the controlled demolition of the existing E&M workshop to ensure that any steel structural elements can only fall away from the Chlorination House	Existing E&M Workshop and Chlorination House	Contractor/ The Engineer	V	N/A

	areas			
Stop any construction activities which may lead to vibrations and potential slope/boulder disturbance during the chlorine deliveries	All works areas	Contractor	$\checkmark$	Y
	Reprovisioning works areas	Contractor/ The Engineer	$\checkmark$	k.
Provision of an accompanying vehicle for the chlorine truck on the WTW site and ensuring that during the chlorine drums delivery construction works are stopped and the construction workers moved away from Chlorination House	All works areas	Contractor	V	Y
chlorine/town gas emergency plan to ensure gas safety during the Construction Phase	Beacon Hill North Gas Offtake Station and Gas Pipelines in Old Beacon Hill Tunnel	The Engineer / Contractor / HKCG	$\checkmark$	k.
Temporary suspend chlorine delivery during the short period of construction of the concerned section of elevated walkway to avoid mobile crane impact on the chlorine truck		The Engineer / Contractor	$\checkmark$	N,
	Chlorine delivery route and reprovisioning works access roads	The Engineer / Contractor	$\checkmark$	Ŷ
Large equipment/plant movement should be controlled by 'Permit-to-move' system	All works areas	The Engineer / Contractor / WSD	V	Y
	Chlorination House area	The Engineer / Contractor	~	Y
	Construction Office area	The Engineer / Contractor	$\checkmark$	Y
Entry of non-authorized personnel to the construction site to be prohibited	All works areas	Contractor	$\checkmark$	Y

12.15.4,	GPS fleet management system with driver training to help enforce truck	Chlorine	WSD /	EIAO-TM		
12.18.1, 12.22.9	speeds	delivery trucks, fleet	Chlorine Supply Contractor		1	k.i.v.
12.22.5		management	Contractor		- <u>- v</u>	K.I.V.
		centre				
	Improved clamps with independent checks to prevent load shedding	Chlorine	]		~	F
	Installation of fire screen and larger fire extinguishers to prevent engine and wheel fires from spreading to the cargo area	delivery trucks			1	F
	Adoption of the chlorine delivery route from Sham Shui Kok Dock to Sha Tin WTW				√	F
	Provision of emergency repair kit	1			$\checkmark$	F
12.34.3 Table 12.37	Ban the use of retreaded tyres and perform regular visual checks on the tyres.				$\checkmark$	F
& 12.38	A vehicle accompanying chlorine truck along critical road sections in Sha Tin. The truck should be equipped with emergency kit, fire extinguisher, radio set for communication. The accompanying vehicle will be ahead of the chlorine truck after the vehicles entering the water treatment works site – An accompanying vehicle may provide rapid response to an incident but any action would be limited to containing a small leak.				$\checkmark$	F
	Limit fuel tanks capacity at the beginning of the Project (Item 2.3 of Table 12.37 – advance measure).				$\checkmark$	F
	Review the practicality of reducing combustible materials or use of fire retardant materials in the cab. (Item 2.3 of Table 12.37 – further measure)				$\checkmark$	k.i.v.
	Annual periodic radiography or ultrasonic test inspections of the chlorine drums should be considered for implementation as soon as feasible (Item 3.8 of Table 12.37).	Chlorine drums			~	k.i.v.
	Implement side, front and rear crash guards with high energy absorption in coordination and accordance with the relevant authorities.	Chlorine delivery trucks			$\checkmark$	k.i.v.
	Implement a sturdy steel frame to minimize the potential for chlorine release due to truck rollover				√	k.i.v.
12.34.4	WSD will continue to keep under review the latest development of use of alternative disinfectants in water supply industry to aim at minimising on-site chlorine storage.4	Chlorine delivery Route	WSD		$\checkmark$	k.i.v.

	Training should be provided for the use of the GPS fleet management and improved safe driving.	$\checkmark$	k.
	Ensured that independent checks are performed to ensure proper chlorine drum latching and clamping.	1	F
	Chlorine truck drivers or driver attendants should be further trained to check and detect potential chlorine leaks during transport. This should include the timely application of the emergency kit.	$\checkmark$	k.
	Training should be provided to driver and driver attendant for the emergency use of the new 2 × 9L AFFF extinguishers.	$\checkmark$	F
	Induction training for new drivers and driver attendant should include familiarisation with the route, familiarisation with chlorine risks, defensive driving, application of emergency kits, use of fire extinguishers and emergency response	$\checkmark$	k.
	Provision of a fire screen between the cab and cargo as well as fire retardant materials for the wheel arches on the chlorine truck should be planned and provided	√	F
	To keep under review alternate chlorine receiving dock in Sha Tin/Tai Po area for chlorine delivery to STWTW.	$\checkmark$	k.i
Legend			
D – Design Pha	ase		
C – Constructi	on Phase		
0 – Operation	Phase		
Y - Compliance	e of Mitigation Measures		
N/A – Not App	licable in Reporting Period		
k.i.v – Keep In	View		
F - Completed			

# Appendix V Cumulative Statistics on Exceedances, Complaints, Notifications of Summons and Successful Prosecutions

Air Quality											
Location	A	ction Lev	el		Ι	imit Levo	el		Total		
AM1		0				0			0		
AM2		0				0			0		
Noise											
Location	Α	ction Lev	el		Ι	imit Levo	el		Total		
NM1		0				0			0		
NM2	0				0			0			
NM3	NM3 0				0						
	Water Quality										
Location	Action Level				Limit	Level	-	Total			
Location	DO	Turbidity	SS	рН	DO	Turbidity	SS	pH	Total		
C1	0	0	0	0	0	0	0	0	0		
C2	0	0	0	0	0	0	0	0	0		
C3	N/A	N/A	N/A	N/A N/A N/A N/A N/A				0			
M1	0	0	0	0	0	0	0	0	0		
M2	0	0	0	0	0	0	0	0	0		
M3	0	0	0	0	0	0	3	0	3		

# Statistical Summary of Exceedances (July 2023)

There were 0 exceedances of Action Level and 3 exceedance of Limit Level in July 2023

# Statistical Summary of Exceedances (Cumulative)

				Ai	r Quality	7			
Location	A	ction Leve	el		Ι	imit Lev	el		Total
AM1		0				0			0
AM2		0				0			0
					Noise				
Location	Α	ction Leve	el		Ι	imit Levo	el		Total
NM1		0				0			0
NM2	0				0			0	
NM3	NM3 0		0					0	
				Wa	ter Qualit				
Location	Action Level					Limit	t Level		Total
Location	DO	Turbidity	SS	рН	DO	Turbidity	SS	pH	Total
C1	0	0	17	4	1	10	7	3	42
C2	0	1	11	1	5	9	6	1	34
C3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0
M1	0	1	7	1	7	6	24	7	53
M2	0	0	0	0	9	3	2	0	14
M3	0	0	0	2	10	22	42	0	76

# Statistical Summary of Environmental Complaints

Reporting	E	nvironmental Complaint Statis	tics
Period	Frequency	Cumulative	
1 July – 31 July 2023	0	N/A	4

# Statistical Summary of Environmental Summons

Reporting	Environmental Summons Statistics					
Period	Frequency	Cumulative				
1 July – 31 July 2023	0	N/A	0			

# Statistical Summary of Environmental Prosecution

Reporting	Environmental Prosecution Statistics					
Period	Frequency	Cumulative				
1 July – 31 July 2023	0	N/A	0			





То	IEC (AECOM), ER (AECOM), Contractor (ATAL - CW - MH JV (ACMJV), CW-FWS JV)	Fax No	By-email
From	Oliver Chiu	Date	3 August 2023
Our Ref	CJO - 3113		
RE	Contract No. 1/WSD/19 & 6/WSD/21		
	In-situ Provisioning of Sha Tin Water Treat Treatment Works and Ancillary Facilities -	•	,
	Notification of Exceedance (NOE) for Wat	er Quality Moni	toring on 12 July 2023

Dear Sir/ Madam,

Exceedances of water quality were found in the monitoring on 12 July 2023. Please find the exceedances in the table below. Investigation report will be submitted separately.

Station	Parameter	Weather	Action Level	Limit Level	Measured Level	Range of Baseline	Exceedance
C1	Suspended Solids (mg/L)	Fine	4.19	6.73	1.2	<1-9.7	-
C2	Suspended Solids (mg/L)	Fine	4.33	8.16	<1	<1 – 12.0	-
M1	Suspended Solids (mg/L)	Fine	3.30	3.56	1.7	<1-4.7	-
M2	Suspended Solids (mg/L)	Fine	18.84	26.80	1.8	<1 - 38	-
M3	Suspended Solids (mg/L)	Fine	1.00	1.00	1.5	<1-1.3	Limit Level

Should you have any queries or need further information, please do not hesitate to contact us or the undersigned at Tel: 2333-6823 or Fax: 2333-1316.

Yours Faithfully, For and on Behalf of Acumen Environmental Engineering & Technologies Co., Ltd.

Min

Oliver Chiu Assistant Environmental Consultant





### Investigation Report on Limit Level Non-compliance on 12 July 2023

CONTRACT NO. 1/WSD/19 & 6/WSD/21 IN-SITU REPROVISIONING OF SHA TIN WATER TREATMENT WORKS (SOUTH WORKS) – WATER TREATMENT WORKS AND ANCILLARY FACILITIES Date: 3 August 2023

### (I) Summary of exceedance on 12 July 2023

Station	Parameter	Weather	Action Level	Limit Level	Measured Level	Range of Baseline	Exceedance
C1	Suspended Solids (mg/L)	Fine	4.19	6.73	1.2	<1-9.7	-
C2	Suspended Solids (mg/L)	Fine	4.33	8.16	<1	<1 – 12.0	-
M1	Suspended Solids (mg/L)	Fine	3.30	3.56	1.7	<1-4.7	-
M2	Suspended Solids (mg/L)	Fine	18.84	26.80	1.8	<1 - 38	-
M3	Suspended Solids (mg/L)	Fine	1.00	1.00	1.5	<1-1.3	Limit Level

### (II) Investigation Results, Recommendations & Mitigation Measures

- According to the field observation from the Environmental Team (ET) on 12 July 2023, no polluted discharge was made from construction site to the Impact Monitoring Station M3 (Photo 1). In general, the condition of water at Impact Station M3 was in order and no discharge from construction was observed (Photo 1). The water quality monitoring locations and contract site area are illustrated in Figure 1.
- 2) Weekly site inspection by the Contractor and ET was conducted on 11 July 2023 to audit the site environmental performance. The overall condition was in compliance.
- 3) In our investigation on 12 July 2023, the Contractor had implemented water quality mitigation measures (eg. sandbags were put within the site to avoid wastewater from leaking out of the site) and wastewater have been properly treated (Photo 2 & 4). No adverse water quality impact was observed during the site inspection (Photo 3). Based on the site observation, it is concluded that the exceedance of limit level was non-project related.
- 4) Nevertheless, the Contractor should continually fully implement the water mitigation measures as recommended in the implementation schedule for environmental mitigation measures in the EM&A Manual.





Photo Record

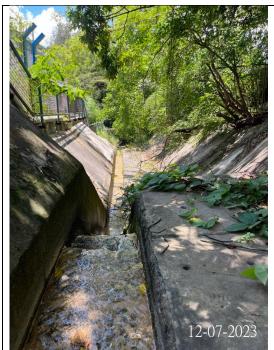


Photo 1 (M3)



Photo 2 (Water quality of water treatment tank at 6/WSD)



Photo 3 (Discharge point at 6/WSD)







Photo 4 (Water quality of water treatment tank at 1/WSD)





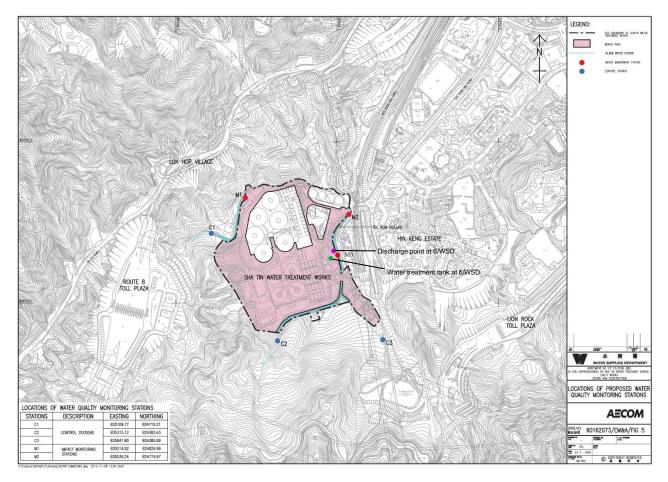


Figure 1 Location Map Water Quality Monitoring Location





То	IEC (AECOM), ER (AECOM), Contractor (ATAL - CW - MH JV (ACMJV), CW-FWS JV)	Fax No	By-email
From	Oliver Chiu	Date	3 August 2023
Our Ref	CJO - 3113		
RE	Contract No. 1/WSD/19 & 6/WSD/21		
	In-situ Provisioning of Sha Tin Water Treat Treatment Works and Ancillary Facilities -	•	,
	Notification of Exceedance (NOE) for Wat	er Quality Moni	toring on 14 July 2023

Dear Sir/ Madam,

Exceedances of water quality were found in the monitoring on 14 July 2023. Please find the exceedances in the table below. Investigation report will be submitted separately.

Station	Parameter	Weather	Action Level	Limit Level	Measured Level	Range of Baseline	Exceedance
C1	Suspended Solids (mg/L)	Fine	4.19	6.73	2.4	<1-9.7	-
C2	Suspended Solids (mg/L)	Fine	4.33	8.16	2.7	<1 – 12.0	-
M1	Suspended Solids (mg/L)	Fine	3.30	3.56	1.9	<1-4.7	-
M2	Suspended Solids (mg/L)	Fine	18.84	26.80	1.1	<1 - 38	-
M3	Suspended Solids (mg/L)	Fine	1.00	1.00	2.4	<1 – 1.3	Limit Level

Should you have any queries or need further information, please do not hesitate to contact us or the undersigned at Tel: 2333-6823 or Fax: 2333-1316.

Yours Faithfully, For and on Behalf of Acumen Environmental Engineering & Technologies Co., Ltd.

Min

Oliver Chiu Assistant Environmental Consultant





### Investigation Report on Limit Level Non-compliance on 14 July 2023

CONTRACT NO. 1/WSD/19 & 6/WSD/21 IN-SITU REPROVISIONING OF SHA TIN WATER TREATMENT WORKS (SOUTH WORKS) – WATER TREATMENT WORKS AND ANCILLARY FACILITIES Date: 3 August 2023

### (I) Summary of exceedance on 14 July 2023

Station	Parameter	Weather	Action Level	Limit Level	Measured Level	Range of Baseline	Exceedance
C1	Suspended Solids (mg/L)	Fine	4.19	6.73	2.4	<1-9.7	-
C2	Suspended Solids (mg/L)	Fine	4.33	8.16	2.7	<1 – 12.0	-
M1	Suspended Solids (mg/L)	Fine	3.30	3.56	1.9	<1-4.7	-
M2	Suspended Solids (mg/L)	Fine	18.84	26.80	1.1	<1 - 38	-
M3	Suspended Solids (mg/L)	Fine	1.00	1.00	2.4	<1 – 1.3	Limit Level

### (II) Investigation Results, Recommendations & Mitigation Measures

- According to the field observation from the Environmental Team (ET) on 14 July 2023, no polluted discharge was made from construction site to the Impact Monitoring Station M3 (Photo 1). In general, the condition of water at Impact Station M3 was in order and no discharge from construction was observed (Photo 1). The water quality monitoring locations and contract site area are illustrated in Figure 1.
- 2) Weekly site inspection by the Contractor and ET was conducted on 19 July 2023 to audit the site environmental performance. The finding of the inspection were summarized below:

1/WSD

- I. It is observed that water accumulation on road surface. Contractor is reminded to prevent water accumulation after raining.
- 3) In our investigation on 14 July 2023, the Contractor had implemented water quality mitigation measures (eg. sandbags were put within the site to avoid wastewater from leaking out of the site) and wastewater have been properly treated (Photo 2 & 4). No adverse water quality impact was observed during the site inspection (Photo 3). The water accumulation was observed on the 1/WSD road surface (Photo 5). Based on the site observation, it is concluded that the exceedance of limit level was non-project related.
- 4) Nevertheless, the Contractor should continually fully implement the water mitigation measures as recommended in the implementation schedule for environmental mitigation measures in the EM&A Manual.





Photo Record



Photo 1 (M3)



Photo 2 (Water quality of water treatment tank at 6/WSD)



Photo 3 (Discharge point at 6/WSD)







Photo 4 (Water quality of water treatment tank at 1/WSD)



Photo 5 (Water accumulation on the road surface on 1/WSD)





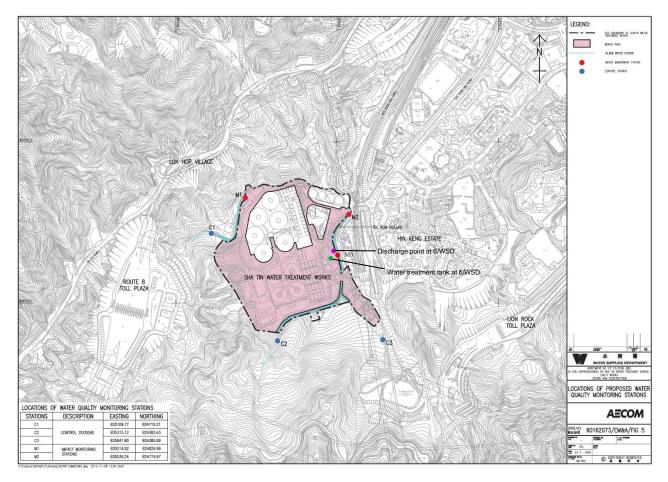


Figure 1 Location Map Water Quality Monitoring Location





То	IEC (AECOM), ER (AECOM), Contractor (ATAL - CW - MH JV (ACMJV), CW-FWS JV)	Fax No	By-email		
From	Oliver Chiu	Date	3 August 2023		
Our Ref	CJO - 3113				
RE	Contract No. 1/WSD/19 & 6/WSD/21				
	In-situ Provisioning of Sha Tin Water Treatment Works (South Works) – Water Treatment Works and Ancillary Facilities – Environmental Team				
	Notification of Exceedance (NOE) for Water Quality Monitoring on 22 July 2023				

Dear Sir/ Madam,

Exceedances of water quality were found in the monitoring on 22 July 2023. Please find the exceedances in the table below. Investigation report will be submitted separately.

Station	Parameter	Weather	Action Level	Limit Level	Measured Level	Range of Baseline	Exceedance
C1	Suspended Solids (mg/L)	Fine	4.19	6.73	2.5	<1-9.7	-
C2	Suspended Solids (mg/L)	Fine	4.33	8.16	1.3	<1 – 12.0	-
M1	Suspended Solids (mg/L)	Fine	3.30	3.56	1.8	<1-4.7	-
M2	Suspended Solids (mg/L)	Fine	18.84	26.80	2.6	<1 - 38	-
M3	Suspended Solids (mg/L)	Fine	1.00	1.00	1.3	<1-1.3	Limit Level

Should you have any queries or need further information, please do not hesitate to contact us or the undersigned at Tel: 2333-6823 or Fax: 2333-1316.

Yours Faithfully, For and on Behalf of Acumen Environmental Engineering & Technologies Co., Ltd.

Min

Oliver Chiu Assistant Environmental Consultant





## Investigation Report on Limit Level Non-compliance on 22 July 2023

CONTRACT NO. 1/WSD/19 & 6/WSD/21 IN-SITU REPROVISIONING OF SHA TIN WATER TREATMENT WORKS (SOUTH WORKS) – WATER TREATMENT WORKS AND ANCILLARY FACILITIES Date: 3 August 2023

## (I) Summary of exceedance on 22 July 2023

Station	Parameter	Weather	Action Level	Limit Level	Measured Level	Range of Baseline	Exceedance
C1	Suspended Solids (mg/L)	Fine	4.19	6.73	2.5	<1-9.7	-
C2	Suspended Solids (mg/L)	Fine	4.33	8.16	1.3	<1 – 12.0	-
M1	Suspended Solids (mg/L)	Fine	3.30	3.56	1.8	<1-4.7	-
M2	Suspended Solids (mg/L)	Fine	18.84	26.80	2.6	<1 - 38	-
M3	Suspended Solids (mg/L)	Fine	1.00	1.00	1.3	<1-1.3	Limit Level

## (II) Investigation Results, Recommendations & Mitigation Measures

- According to the field observation from the Environmental Team (ET) on 22 July 2023, no polluted discharge was made from construction site to the Impact Monitoring Station M3 (Photo 1). In general, the condition of water at Impact Station M3 was in order and no discharge from construction was observed (Photo 1). The water quality monitoring locations and contract site area are illustrated in Figure 1.
- 2) Weekly site inspection by the Contractor and ET was conducted on 26 July 2023 to audit the site environmental performance. The finding of the inspection were summarized below:

6/WSD

- I. Contractor is reminded to clean up the waste disposal regularly.
- 3) In our investigation on 22 July 2023, the Contractor had implemented water quality mitigation measures (eg. sandbags were put within the site to avoid wastewater from leaking out of the site) and wastewater have been properly treated (Photo 2 & 4). No adverse water quality impact was observed during the site inspection (Photo 3). Based on the site observation, it is concluded that the exceedance of limit level was non-project related.
- 4) Nevertheless, the Contractor should continually fully implement the water mitigation measures as recommended in the implementation schedule for environmental mitigation measures in the EM&A Manual.





Photo Record



Photo 1 (M3)



Photo 2 (Water quality of water treatment tank at 6/WSD)



Photo 3 (Discharge point at 6/WSD)







Photo 4 (Water quality of water treatment tank at 1/WSD)





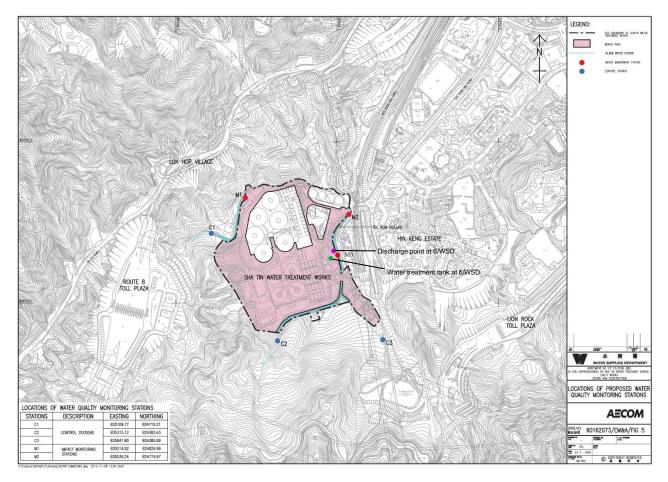


Figure 1 Location Map Water Quality Monitoring Location

## Appendix W Tentative Schedule of Impact Monitoring

		Tentative	Impact Monitoring Schedule for	STWTW		
			Aug-23			
Sun	Mon	Tue		Thu	Fri	Sat
		1	2	3	4	5
		Impact	Impact		Impact	
		Air monitoring for AM1 & AM2 Noise monitoring for NM1, NM2 & NM3	Water Quality monitoring for C1, C2, C3, M1, M2 & M3		Water Quality monitoring for C1, C2, C3, M1, M2 & M3	
6	7	8	9	10	11	12
0	Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3 Air monitoring for AM1 & AM2 Noise monitoring for NM1, NM2 & NM3		Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3		Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3	Impact Air monitoring for AM1 & AM2 Noise monitoring for NM1, NM2 & NM3
13	14	15	16	17	18	19
	Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3		Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3		Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3 Air monitoring for AM1 & AM2 Noise monitoring for NM1, NM2 & NM3	
20	21	22	23	24	25	26
	Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3		Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3	Impact Air monitoring for AM1 & AM2 Noise monitoring for NM1, NM2 & NM3	Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3	
27	28	29	30	31		
	Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3		Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3 Air monitoring for AM1 & AM2 Noise monitoring for NM1, NM2 & NM3			

	Tentative Impact Monitoring Schedule for STWTW					
			Sep-23			
Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	1	5	6	7	Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3 8	Impact Air monitoring for AM1 & AM2 Noise monitoring for NM1, NM2 & NM3
<u>з</u>	4	5	0	1	0	9
	Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3		Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3		Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3 Air monitoring for AM1 & AM2 Noise monitoring for NM1, NM2 & NM3	
10	11	12	13	14	15	16
	Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3		Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3	Impact Air monitoring for AM1 & AM2 Noise monitoring for NM1, NM2 & NM3	Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3	
17	18	19	20	21	22	23
	Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3		Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3 Air monitoring for AM1 & AM2 Noise monitoring for NM1, NM2 & NM3		Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3	
24	25	26	27	28	29	30
	Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3	Impact Air monitoring for AM1 & AM2 Noise monitoring for NM1, NM2 & NM3	Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3		Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3	

			Tentative Impact Monitoring Schedule	for STWTW
0		<b>T</b>	Oct-23	171
Sun	Mon	Tue	Wed	Thu
1	2	3	4	5
	Impact Water Quality monitoring for C1, C C3, M1, M2 & M3 Air monitoring for AM1 & AM2 Noise monitoring for NM1, NM2 & NM3	or	Impact Water Quality monitoring for C1, 4 C3, M1, M2 & M3	
8	9	10	11	12
	Impact Water Quality monitoring for C1, C C3, M1, M2 & M3	2,	Impact Water Quality monitoring for C1, o C3, M1, M2 & M3	C2,
15	16	17	18	19
	Impact Water Quality monitoring for C1, C C3, M1, M2 & M3	2,	Impact Water Quality monitoring for C1, 6 C3, M1, M2 & M3	Impact C2, Air monitoring for AM1 & AM Noise monitoring for NM1, NM NM3
22	23	24	25	26
	Impact Water Quality monitoring for C1, C C3, M1, M2 & M3	2,	Impact Water Quality monitoring for C1, e C3, M1, M2 & M3 Air monitoring AM1 & AM2 Noise monitoring fo NM1, NM2 & NM3	for
29	30			
	Impact Water Quality monitoring for C1, C C3, M1, M2 & M3	2,		

		Cat
	Fri	Sat 7
	6	1
	Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3	Impact Air monitoring for AM1 & AM2 Noise monitoring for NM1, NM2 & NM3
	13	14
	Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3 Air monitoring for AM1 & AM2 Noise monitoring for NM1, NM2 & NM3	
	20	21
12 12 &	Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3	
	27	28
	Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3	