





**Contract No. DC/2019/07** 

# **Environmental Monitoring Works for** Upgrading of Cheung Chau Sewage Collection, Treatment and **Disposal Facilities**

# 13th Monthly Environmental Monitoring and Audit Report -August 2022

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#### **EXECUTIVE SUMMARY**

- A.1 Pursuant to the Environmental Impact Assessment Ordinance (EIAO), the Director of Environmental Protection (DEP) granted the Environmental Permit (No. EP-488/2014/A) to DSD for the Project.
- A.2 Upon the requirement of the Environmental Permit (EP), the Monthly EM&A Monitoring Report shall be submitted to the DEP within 10 working days after the end of the reporting month. The submissions shall be verified by the Independent Environmental Checker (IEC) and complied with the requirements set out in the Environmental Monitoring and Audit (EM&A) Manual before submission to the DEP as stipulated in Condition 4.4 of the EP.
- A.3 The commencement date of the Project was 6 August 2021. Impact environmental monitoring of 24-hour TSP, 1-hour TSP and noise was conducted as stipulated in Condition 4.2 of the EP. This is the 13th Monthly EM&A Report for the Project summarizing the monitoring results and audit findings of the EM&A programme at selected locations at and around Cheung Chau during the reporting period from 1 August to 31 August 2022.
- A.4 Key activities carried out in this reporting period for the Project included the followings:
  - Trial pit and ground investigation
  - Smart sewage monitoring
  - Pre-bored Works for Sheet Piles Installation for Subsequent ELS at CCSTW
  - Repair Works for Existing Sludge Ramp
  - Leakage Detection of the Existing Manholes/Chambers
  - Excavation and Lateral Support (ELS) at CCSTW
  - Sewage Diversion for Penstock Replacement at PSSPS
  - Mechanical Installation Works of Pak She Sewage Pumping Station
  - Construction of Superstructure of LV Main Switch Room and Transformer Room at CCSTW
  - Temporary Digestion System at CCSTW
- A.5 The major environmental impacts brought by the above construction works include:
  - Construction dust and noise generation from construction works and piling works
  - Wastewater generated from construction activities
  - Waste generation from the construction activities
- A.6 The key environmental mitigation measures implemented for the Project in this reporting period associated with the above construction works include:
  - Dust suppression by regular wetting and water spraying for construction works
  - Reduction of noise from equipment and machinery on-site
  - Mitigation measures preventing seepage of muddy water
  - Sorting and storage of general refuse and construction waste
- A.7 Five (5) sessions of air monitoring were carried out at all designated monitoring locations. No exceedance of Action or Limit Level was recorded.
- A.8 Five (5) sessions of noise monitoring were carried out at all designated monitoring locations. No exceedance of Action or Limit Level was recorded.
- A.9 Results of the monitoring for air quality and airborne noise are given in **Table A** and **Table B** as follows:

**Table A - Monitoring Results (Dust)** 

	Dust in μg/m³				
Location		Average		Range	
	TSP-1hr	TSP-24hr	TSP-1hr	TSP-24hr	
A1a	64	34	54 - 75	16 - 76	
A2a	65	29	62 - 74	14 - 42	

**Table B - Monitoring Results (Noise)** 

	Noise in dB(A)		
Location	Average	Range	
	L <sub>eq (30 min)</sub> (7:00-19:00)	$L_{eq (30 min)} (7:00-19:00)$	
N2a	69.2	67.0 – 68.9	
N3a	66.8	62.7 - 69.0	

s: +3 dB(A) free-field corrections have been made to N3a.

- A.10 According to Section 4.3.3 of the EM&A Manual, Site inspection shall be carried out by the ET and attentions shall be paid to the mitigation measures recommended for water pollution control. Weekly site inspections were carried out and no non-compliance was spotted during the reporting month.
- A.11 Waste management mitigation measures were properly implemented in the reporting period.
- A.12 For cultural heritage impact, as this Project does not involve proposed sewers works, according to Section 6.1.5 of the EM&A Manual, no EM&A requirement is considered necessary during the construction and operational phase of upgrading of Cheung Chau STW and Pak She SPS.
- A.13 The recommended landscape and visual mitigation measures were properly implemented in the reporting period.
- A.14 Weekly site inspection of the construction work by ET were carried out on 02, 09, 16, 22 and 30 August 2022.
- A.15 No environmental complaint was received during the reporting period.
- A.16 No notification of summons or prosecution was received in the reporting period.
- A.17 A map of the construction site and monitoring locations are shown in **Appendix A**.
- A.18 The summary of permit / licences for this Project is presented in **Table C** below:

# Table C - Summary of Permit / Licences

Nature	Number	Issue Date	Expiry Date
Environmental Permit	EP-488/2014/A	13/05/2021	N/A
Notification pursuant to	462303	26/11/2020	N/A
Air Pollution Control			
(Construction Dust)			
Regulation			
Waste Disposal Billing	7039094	7/12/2020	N/A
Account			
Waste Disposal (Vessel)	7040870	27/06/2022	10/10/2022
Billing Account			
Chemical Waste Producer	5213-920-B2500-05	31/12/2020	N/A
Effluent Discharge Licence	WT00038597-2021	20/08/2021	31/08/2026
under Water Pollution		·	·
Control Ordinance			

#### 1. Introduction

#### 1.1. BACKGROUND

- 1.1.1. Drainage Services Department (DSD) has contracted Build King Civil Engineering Limited (BK) to carry out the Outlying Islands Sewerage Stage 2 Upgrading of Cheung Chau Sewage Collection, Treatment and Disposal Facilities under Contract No. DC/2019/07.
- 1.1.2. Acuity Sustainability Consulting Limited (ASCL) is commissioned by BK to undertake the Environmental Team (ET) services as required and/or implied, both explicitly and implicitly, in the Environmental Permit (EP), Environmental Impact Assessment Report (EIA Report) (Register No. AEIAR-181/2013) and Environmental Monitoring and Audit Manual (EM&A Manual) for the Project; and to carry out the Environmental Monitoring and Audit (EM&A) programme in fulfillment of the EIA Report's EM&A requirements under Agreement No. CE 15/2010 (DS).

#### 1.2. PROJECT DESCRIPTION

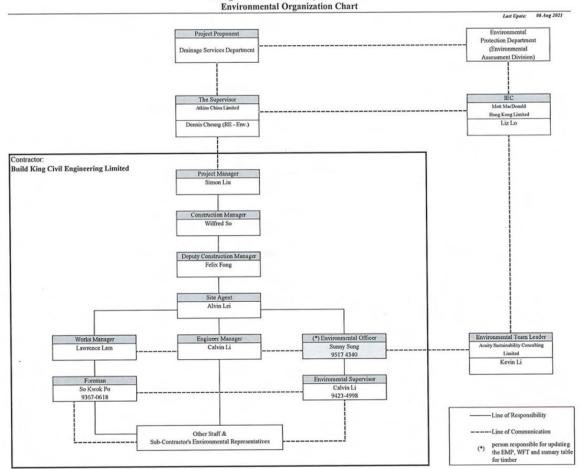
- 1.2.1. The purpose of the Project is to upgrade the sewerage collection, treatment and disposal facilities in Cheung Chau in order to cater for the projected ultimate population and planned developments in Cheung Chau to meet the increased demand and to achieve more stringent effluent quality standards. The key elements of the proposed works for the Project will include as follows:
  - Expansion of the sewage treatment capacity and upgrading of the treatment level of the existing Cheung Chau Sewage Treatment Works (Cheung Chau STW) to secondary treatment level; and
  - Expansion of the pumping capacity of the existing Pak She Sewage Pumping Station (Pak She SPS).

#### 1.3. PROJECT ORGANISATION STRUCTURE

1.3.1. The Project organization structure is presented in **Figure 1.1**.

**Figure 1.1 Project Organization Structure** 

Contract No.: DC/2019/07 Outlying Islands Sewerage, Stage 2 — Upgrading of Cheung Chau Sewage Treatment and Disposal Facilities



Party	Role	Contact	Phone No.
		Person	
Drainage Services Department	Project Proponent	C.K. NG	2594 7264
HKSAR (DSD)			
Supervisor / Supervisor's	Resident Engineer	Dennis Cheung	2675 3910
Representative			
(Atkins China Limited)			
Environmental Team	Environmental Team	Kevin Li	2698 6833
(Acuity Sustainability	Leader		
Consulting Limited)			
Independent Environmental	Independent	Liz Lo	2828 5751
Checker	Environmental		
(Mott Macdonald Hong Kong	Checker		
Limited)			
Contractor	Site Agent	Alvin Lei	6123 8136
(Build King Construction			
Limited)	Environmental Officer	Sunny Sung	9517 4340

#### 1.4. SUMMARY OF CONSTRUCTION WORKS

1.4.1. Details of the major construction activities undertaken in this and the next reporting periods are shown as below. The construction programme is presented in **Appendix B**.

Key activities carried out in this reporting period for the Project included the followings:

- Trial pit and ground investigation
- Smart sewage monitoring
- Pre-bored Works for Sheet Piles Installation for Subsequent ELS at CCSTW
- Repair Works for Existing Sludge Ramp
- Leakage Detection of the Existing Manholes/Chambers
- Excavation and Lateral Support (ELS) at CCSTW
- Sewage Diversion for Penstock Replacement at PSSPS
- Mechanical Installation Works of Pak She Sewage Pumping Station
- Construction of Superstructure of LV Main Switch Room and Transformer Room at CCSTW
- Temporary Digestion System at CCSTW

Key activities to be carried out in the next reporting period for the Project included the followings:

- Trial pit and ground investigation
- Smart sewage monitoring
- Pre-bored Works for Sheet Piles Installation for Subsequent ELS at CCSTW
- Repair Works for Existing Sludge Ramp
- Leakage Detection of the Existing Manholes/Chambers
- Excavation and Lateral Support (ELS) at CCSTW
- Sewage Diversion for Penstock Replacement at PSSPS
- Mechanical Installation Works of Pak She Sewage Pumping Station
- Construction of Superstructure of LV Main Switch Room and Transformer Room at CCSTW
- Temporary Digestion System at CCSTW

#### 1.5. PURPOSE OF THE REPORT

- 1.5.1. According to the EM&A Manual for the Project, monitoring for air quality and noise should be conducted throughout the construction period of the Project.
- 1.5.2. The EM&A requirements for environmental monitoring are set out in the EM&A Manual. Environmental aspect of construction noise and air quality were identified as the key issues requiring implementation of monitoring programme during the construction phase of the Project.
- 1.5.3. This report is summarizing the monitoring results and audit findings of the EM&A programme during the reporting period from 1 August to 31 August 2022.

#### 2. AIR QUALITY

#### 2.1. AIR QUALITY PARAMETERS

- 2.1.1. The air quality parameters to be monitored includes:
  - 24-hour TSP:
  - 1-hour TSP; and

#### 2.2. MONITORING CRITERIA

- 2.2.1. Dust monitoring was carried out at the designated monitoring location at least once in every six-days to obtain 24-hour TSP samples. One-hour TSP sampling shall also be done at least 3 times in every six-days while the highest dust impact occurs.
- 2.2.2. Before commencing the impact monitoring, the ET Leader shall inform the IEC of the impact monitoring programme such that the IEC can conduct on-site audit to ensure accuracy of the impact monitoring results.
- 2.2.3. In case of non-compliance with the air quality criteria, additional monitoring as specified in the Action Plan shall be conducted within 24 hours after the result is obtained. This additional monitoring shall be continued until the excessive dust emission or the deterioration in air quality is rectified.

#### 2.3. MONITORING REQUIREMENTS AND EQUIPMENT

- 2.3.1. 1-hour and 24-hour TSP levels were measured to indicate the impacts of construction dust on air quality. The 24-hour TSP levels shall be measured by following the standard high volume sampling method as set out in the Title 40 of the United States Code of Federal Regulations, Chapter 1 (Part 50), Appendix B.
- 2.3.2. High volume samplers (HVSs) in compliance with the following specifications shall be used for carrying out the 1-hour and 24-hour TSP monitoring:
  - (i)  $0.6 1.7 \text{ m}^3$  per minute adjustable flow range;
  - (ii) equipped with a timing / control device with +/- 5 minutes accuracy for 24 hours operation;
  - (iii) installed with elapsed-time meter with +/- 2 minutes accuracy for 24 hours operation;
  - (iv) capable of providing a minimum exposed area of 406 cm<sup>2</sup>;
  - (v) flow control accuracy: +/- 2.5% deviation over 24-hour sampling period;
  - (vi) equipped with a shelter to protect the filter and sampler;
  - (vii) incorporated with an electronic mass flow rate controller or other equivalent devices;
  - (viii) equipped with a flow recorder for continuous monitoring;
  - (ix) provided with a peaked roof inlet;
  - (x) incorporated with a manometer;
  - (xi) able to hold and seal the filter paper to the sampler housing at horizontal position;
  - (xii) easily changeable filter; and

(xiii) capable of operating continuously for a 24-hour period.

- 2.3.3. The ET is responsible for provision of the monitoring equipment. They shall ensure that sufficient number of HVSs with an appropriate calibration kit is available for carrying out the impact monitoring, and ad hoc monitoring. The HVSs shall be equipped with an electronic mass flow controller and be calibrated against a traceable standard at regular intervals. All the equipment, calibration kit, filter papers, etc., shall be clearly labelled.
- 2.3.4. Initial calibration of dust monitoring equipment shall be conducted upon installation and thereafter at bi-monthly intervals. The transfer standard shall be traceable to the internationally recognised primary standard and be calibrated annually. The concerned parties such as ER shall properly document the calibration data for future reference. All the data shall be converted into standard temperature and pressure condition.
- 2.3.5. If the ET proposes to use a direct reading dust meter to measure 1-hour TSP levels, he shall submit sufficient information to the ER to prove that the instrument is capable of achieving a comparable result to the HVS. The instrument shall also be calibrated regularly, and the 1-hour sampling shall be determined periodically by the HVS to check the validity and accuracy of the results measured by direct reading method.

#### Laboratory Measurement / Analysis

- 2.3.6. A clean laboratory with constant temperature and humidity control, and equipped with necessary measuring and conditioning instruments to handle the dust samples collected, shall be available for sample analysis, and equipment calibration and maintenance. The laboratory shall be HOKLAS accredited.
- 2.3.7. Filter paper of size 8" x 10" shall be labelled before sampling. It shall be a clean filter paper with no pinholes, and shall be conditioned in a humidity-controlled chamber for over 24-hours and be pre-weighed before use for the sampling
- 2.3.8. After sampling, the filter paper loaded with dust shall be kept in a clean and tightly sealed plastic bag. The filter paper shall then be returned to the laboratory for reconditioning in the humidity-controlled chamber followed by accurate weighing by an electronic balance with readout down to 0.1 mg. The balance shall be regularly calibrated against a traceable standard.
- 2.3.9. 1-hour TSP levels and 24-hour TSP had been measured with direct reading dust meters and High Volume Samplers respectively. The details of equipment used for monitoring are listed in **Table 2.1**, and the calibration certificates are presented in **Appendix C**.

**Table 2.1 Equipment Used for Air Quality Monitoring** 

Equipment	Model	Serial Number
	SIBATA Digital Dust Indicator (Model: LD-5R)	851816 992821
Portable dust meter – 1-hour TSP	Digital Dust Indicator (Model: PC-3A(E))	JC-2110289 JC-2110284
	Digital Dust Indicator (Model: Aerocet 831)	A14256 A14258
High Volume Samplers –	Tisch TE-5170X High Volume	1048
24- hour TSP	Air Sampler	1085

Equipment	Model	Serial Number
Calibrator Kit	Tisch TE-5025A Calibration	3465
	Kit	

#### 2.4. MONITORING LOCATIONS

- 2.4.1. The ET agreed with the ER and the IEC on the position of the HVS for the installation of the monitoring equipment. When positioning the samplers, the following points were noted:
  - (i) a horizontal platform with appropriate support to secure the samplers against gusty wind shall be provided;
  - (ii) no two samplers shall be placed less than 2 meters apart;
  - (iii) the distance between the sampler and an obstacle, such as buildings, must be at least twice the height that the obstacle protrudes above the sampler;
  - (iv) a minimum of 2 meters of separation from walls, parapets and penthouses is required for rooftop samplers;
  - (v) a minimum of 2 meters separation from any supporting structure, measured horizontally is required;
  - (vi) no furnace or incinerator flue is nearby;
  - (vii) airflow around the sampler is unrestricted;
  - (viii) the sampler is more than 20 meters from the dripline;
  - (ix) any wire fence and gate, to protect the sampler, shall not cause any obstruction during monitoring
  - (x) permission must be obtained to set up the samplers and to obtain access to the monitoring stations: and
  - (xi) a secured supply of electricity is needed to operate the samplers.
- 2.4.2. The proposed dust monitoring station is presented in **Table 2.2** and the respective locations are shown in Figure 2.1 of the EM&A Manual.

**Table 2.2 Proposed Dust Monitoring Stations** 

ID No.	Location	Nature of Use	Remarks
A1	Cheung King House, Cheung Kwai Estate	Residential	Specified in the EM&A Manual but proposed to change location
A1a	The admin building inside the construction site	Institutional	Proposed alternative location to replace A1
A2	Cheung Chau Slaughter House	Slaughter house	Specified in the EM&A Manual but proposed to change location
A2a	The existing outfall pumping station inside the construction site	Institutional	Proposed alternative location to replace A2

**2.4.3.** As secured electricity supply was not able to be provided at Monitoring Station A1, Monitoring Station A1a was then proposed, The proposed Monitoring Station A1a is the Admin Building inside the construction site. It is located at a similar direction as A1 from

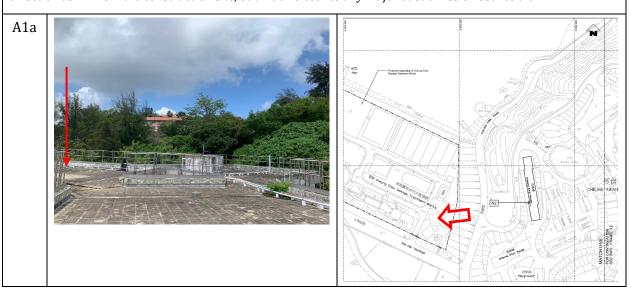
the construction site, but much closer to any major dust emission source than A1.

- **2.4.4.** Monitoring Station A2 is now abandoned, only limited access can be granted and power supply cannot be guaranteed which may not feasible to be a monitoring location. An alternative location A2a, which is the existing outfall pumping station Building inside the construction site. Location A2a is about 30 meter away from the Cheung Chau slaughter house and closer to the dust emission source.
- 2.4.5. The proposed alternative monitoring locations meet the guidelines and requirements specified in Section 2.4.1 and 2.4.2 of the EM&A Manual. **Table 2.3** shows the photographs of the air monitoring locations.

**Table 2.3 Photo of Proposed HVS Position at Dust Monitoring Stations** 

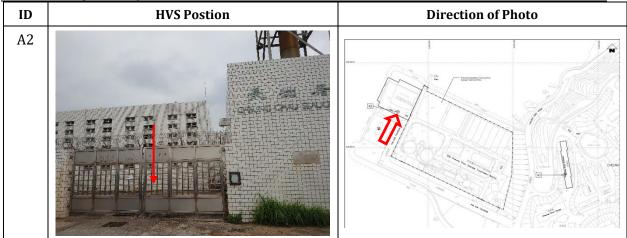


The proposed Monitoring Station A1a is the Admin Building inside the construction site. It is located at a similar direction as A1 from the construction site, but much closer to any major dust emission source than A1.



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Because Monitoring Station A2 is now abandoned, only limited access can be granted and power supply cannot be guarunteed which may not feasible to be a monitoring location.





#### 2.5. RESULTS AND ANALYSIS

2.5.1. The 1-hour TSP and 24-hour TSP measurement data are shown in <a href="Appendix D">Appendix D</a> and summarized in **Table 2.4** and **Table 2.5** respectively.

**Table 2.4 Summary of 1-hour TSP Monitoring Results** 

Monitoring Location	Average(μg/m3)	Range(μg/m3)
A1a	64	54 - 75
A2a	65	62 - 74

Table 2.5 Summary of 24-hour TSP Monitoring Results

Monitoring Location	Average(μg/m3)	Range(μg/m3)		
A1a	34	16 - 76		
A2a	29	14 - 42		

#### 2.6. Environmental Quality Performance Limits

2.6.1. The baseline monitoring results formed the basis for determining the air quality criteria for the impact monitoring. The ET shall compare the impact monitoring results with air quality criteria set up for 24-hour TSP and 1-hour TSP. **Table 2.6** shows the air quality criteria, namely Action and Limit levels to be used.

**Table 2.6** Action / Limit Levels for Air Quality

Parameters	Action Level	Limit Level
1-hour TSP Level	For baseline level $\leq 200 \mu\text{g/m}^3$ AL = (BL * 1.3 + LL)/2	260 μg/m <sup>3</sup>
in μg/m³	For baseline level > $200 \mu g/m^3$ AL = LL	
24-hour TSP Level in	For baseline level $\leq 384 \mu\text{g/m}^3$ AL = (BL * 1.3 + LL)/2	500 μg/m <sup>3</sup>
μg/m³	For baseline level > $384 \mu g/m^3$ AL = LL	

2.6.2. The derived Action/Limit Levels are presented in **Table 2.7**.

Table 2.7 Derived Action / Limit Levels for Air Quality

Parameters	Monitoring Location	<b>Action Level</b> μg/m <sup>3</sup>	<b>Limit Level</b> μg/m <sup>3</sup>
1-hour TSP Level	A1a	151	260
in μg/m <sup>3</sup>	A2a	154	
24-hour TSP Level in	A1a	270	500
μg/m³	A2a	271	

#### 2.7. EVENT AND ACTION PLAN

2.7.1. Should non-compliance of the air quality criteria occur, actions in accordance with the Action Plan in **Table 2.8** shall be carried out.

Table 2.8 Event and Action Plan for Air Quality (Construction Dust)

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EVENT		ACTION PLAN FOR CONSTRUCTION DUST									
EVENI	ET	IEC ER		CONTRACTOR							
		ACTION LEVEL									
Exceedance for one sample	Identify source, investigate the causes of exceedance and propose remedial measures;     Inform IEC and ER;     Repeat measurement to confirm finding; and     Increase monitoring frequency to daily.	Check monitoring data submitted by ET; and     Check Contractor's working method.	Notify Contractor.	Rectify any unacceptable practice; and     Amend working methods if appropriate.							
Exceedance for two or more consecutive samples	Identify source;     Inform IEC and ER;     Advise the ER on the effectiveness of the proposed remedial measures;     Repeat measurements to confirm findings;     Increase monitoring frequency to daily;     Discuss with IEC and Contractor on remedial actions required;     If exceedance continues, arrange meeting with IEC and ER; and	Check monitoring data submitted by ET;     Check Contractor's working method;     Discuss with ET and Contractor on possible remedial measures;     Advise the ET on the effectiveness of the proposed remedial measures; and     Supervise implementation of remedial measures	Confirm receipt of notification of failure in writing;     Notify Contractor; and     Ensure remedial measures properly implemented.	Submit proposals for remedial to IEC within 3 working days of notification;     Implement the agreed proposals; and     Amend proposal if appropriate.							

#### 3. Noise

#### 3.1. MONITORING CRITERIA

- 3.1.1. Impact monitoring was conducted once a week between 07:00-19:00 hours on normal weekdays.
- 3.1.2. **Table 3.1** summarizes the monitoring parameters, frequency and duration of the noise monitoring.

**Table 3.1 Noise Monitoring Parameters, Time, Frequency and Duration** 

Time	Duration	Interval	Parameters
Daytime: 0700-1900 hrs	Once a week	$\begin{array}{c} \text{Continuously in} \\ L_{\text{eq }5\text{min}}/L_{\text{eq }30\text{min}} \\ \text{(average of 6} \\ \text{consecutive } L_{\text{eq}} \\ \text{5min)} \end{array}$	$L_{eq~5min},L_{eq~30min},$ $L_{10}~\&~L_{90}$

#### 3.2. MONITORING REQUIREMENTS AND EQUIPMENT

- 3.2.1. Sound level meters and calibrators shall comply with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1) specification as referred to in the Technical Memorandum (TM) issued under the Noise Control Ordinance.
- 3.2.2. Sound level meters were calibrated using a portable calibrator prior to and following each noise measurement. Where the difference between the calibration levels is greater than 1.0 dB(A), the measurement shall be repeated. Calibrated hand-held anemometers were supplied for the measurement of wind speeds during noise monitoring periods.
- 3.2.3. Noise measurements should not be made in fog, rain, wind with a steady speed exceeding 5 m/s or wind with gusts exceeding 10 m/s. The wind speed shall be checked with a portable wind speed meter capable of measuring the wind speed in m/s.
- 3.2.4. The details of equipment used for impact monitoring are listed in **Table 3.2**, and the calibration certificates are presented in  $\underline{\text{Appendix E}}$ .

**Table 3.2 Equipment Used for Noise Monitoring** 

Equipment	Model	Serial Number
Sound Level Meter	SVANTEK 971	96062
Sound Level Meter	Rion NL-52	01010876
Acoustic Calibrator	Svantek SV 33B	83042
Acoustic Calibrator	Rion NC-75	34524163

#### 3.3. MONITORING LOCATION

3.3.1. According to the environmental findings detailed in the EIA report, the designated locations for the construction noise monitoring are listed in **Table 3.3** and shown in Figure 3.1 – 3.8 of the EM&A Manual.

Table 3.3 Noise Monitoring Stations for Noise Monitoring

ID No.	Location	Nature of Uses	Remarks	Façade/Free- field
N2	Cheung King House, Cheung Kwai Estate	Residential	Specified in the EM&A Manual but proposed to change location	Façade
N2a	Admin Building inside the Construction Site	Institutional	Proposed alternative location to replace N2	Façade
N3	No. 1A Pak She Second Lane	Residential	Specified in the EM&A Manual but proposed to change location	Free-field
N3a Cheung Chau Fire Station		Fire Station	Proposed alternative location to replace N3	Free-field

- 3.3.2. For this Contract, only N2 and N3 need to be monitored since all the other monitoring stations specified in the EM&A Manual are for sewers works but this Contract does not include sewers works.
- 3.3.3. The proposed Monitoring Station N2a is the Admin Building inside the construction site. It is located at a similar direction as N2 from the construction site, but much closer to any major noise emission source than N2.
- 3.3.4. According to Figure 3.3 of the EM&A Manual, Location N3 is placed in front of a restaurant on Ping Chong Road. It may pose potential danger to pedestrians, cyclists, drivers and the equipment. A proposed monitoring location N3a, which is about 5 m away from the original monitoring location. N3a is at the corner of the Cheung Chau Fire Station. This location is more safe and meets the guidelines and requirements specified in Secion 3.4.1 and 3.4.2 of the EM&A Manual.
- 3.3.5. The monitoring locations should normally be made at a point 1m from the exterior of the NSRs building façade and be at a position 1.2m above the ground. **Table 3.4** showed photographs and indications of the proposed position of sound level meters to be placed for the baseline and impact monitoring.

Table 3.4 Photo of Proposed Sound Level Meter Position at Noise Monitoring Stations

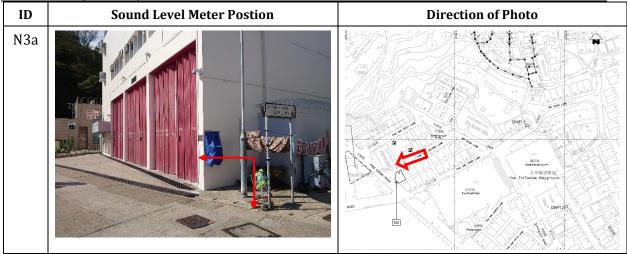
ID **Sound Level Meter Postion Direction of Photo** N2 The proposed Monitoring Station N2a is the Admin Building inside the construction site. It is located at a similar direction as N2 from the construction site, but much closer to any major noise emission source than N2. N2a

N3

According to Figure 3.3 of the EM&A Manual, Location N3 is placed in front of a restaurant on Ping Chong Road. It may pose potential danger to pedestrians, cyclists, drivers and the equipment.

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#### 3.4. RESULTS AND ANALYSIS

3.4.1. The noise monitoring was carried out in August 2022. The measurement data are shown in Appendix F and summarized in **Tables 3.5**.

**Table 3.5 Summary of Noise Monitoring Results** 

Monitoring Location Time Period		Average[dB(A))	Range[dB(A))
N2a	Daytime (0700-1900)	69.2	67.0 - 68.9
N3a	Daytime (0700-1900)	66.8	62.7 - 69.0

s: +3 dB(A) free-field corrections have been made to the data of N3a.

#### 3.5. Environmental Quality Performance Limits

3.5.1. The Action and Limit levels for construction noise are shown in **Table 3.6**. All NSRs identified in the Project are classified with an Area Sensitivity Rating (ASR) A in accordance with the Technical Memorandum on Noise from Construction Work Other Than Percussive Piling.

**Table 3.6** Action / Limit Levels for Construction Noise

Time Period	Action	Limit
07:00-19:00 hours on normal weekdays;	When one or more documented complaints are received	75dB(A)

#### 3.6. EVENT AND ACTION PLAN

3.6.1. Should non-compliance of the air quality criteria occur, actions in accordance with the Action Plan in **Table 3.7** shall be carried out.

#### **Table 3.7 Event and Action Plan for Construction Noise**

Event	ET	IEC	ER	CONTRACTOR
Action Level	Notify ER, IEC and Contractor;     Carry out investigation;     Report the results of investigation to the IEC, ER and Contractor;     Discuss with the IEC and contractor and formulate remedial measures; and	Review the investigation results submitted by the ET;     Review the proposed remedial measures by the Contractor and advise the ER accordingly; and     Advise the ER on the effectiveness of the proposed remedial measures.	Confirm receipt of notification of failure in writing;     Notify Contractor;     In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; and     Supervise the implementation of remedial measures.	Submit noise mitigation proposals to IEC and ER; and     Implement noise mitigation proposals.
Limit Level	Notify IEC, ER, EPD & Contractor;     Identify source and investigate the cause of exceedance;     Repeat measurement to confirm findings;     Increase monitoring frequency;     Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;     Discuss with the IEC, Contractor and ER on remedial measures required;     Assess the effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; and     If exceedance stops, cease additional monitoring.	Discuss amongst ET, ER and Contractor on the potential remedial actions; and     Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly.	Confirm receipt of notification of failure in writing;     Notify Contractor;     In consolidation with the EIC, agree with the Contractor on the remedial measures to be implemented;     Supervise the implementation of remedial measures; and     If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance until the exceedance is abated.	Take immediate action to avoid further exceedance;     Submit proposals for remedial actions to IEC and ER within 3 working days of notification;     Implement the agreed proposals;     Submit further proposal if problem still not under control; and     Stop the relevant portion of works as determined by ER, until the exceedance is abated.

#### 4. WATER QUALITY

- 4.1. As suggested in Section 4.3 of the EM&A Manual, regular site audit was carried out to ensure that the recommended mitigation measures were properly implemented during the construction phase of upgrading of Cheung Chau STW and Pak She SPS. Site audit included site inspections and compliance audits were conducted in the reporting period.
- 4.2. Site inspection was carried out by the ET on 02, 09, 16, 22 and 30 August 2022. No major deficiency was observed and the implementation of recommended for water pollution control was considered satisfactory.
- 4.3. Compliance audits were undertaken that a valid discharge license was issued by EPD on 20 August 2021. The Contractor was reminded to make sure any effluent discharge from construction activities of the Project site should meet the requirements stipulated in the discharge license and monitoring of the treated effluent quality from the Works Areas should be carried out in accordance with the Water Pollution Control Ordinance license that is under the ambit of the relevant regional EPD office.
- 4.4. According to the Specific Conditions B2 in Part B of the discharge licence issued under WPCO, a sample of discharge was taken on 8 August 2022 for testing. The quality of the discharge complied with the requirements of the discharge licence. Formal laboratory result will be received in the next month.

#### 5. WASTE MANAGEMENT

5.1. The waste generated from this Project includes inert construction and demolition (C&D) materials, and non-inert C&D materials. Non-inert C&D materials are made up of general refuse, vegetative wastes and recyclable wastes such as plastics and paper/cardboard packaging waste. Steel materials generated from the project are also grouped into non-inert C&D materials as the materials were not disposed of with other inert C&D materials. With reference to relevant handling records and trip tickets of this Project, the quantities of different types of waste generated in the reporting month are presented in **Table 5.1**.



#### Contract No: DC/2019/07

#### Outlying Islands Sewerage Stage 2 – Upgrading of Cheung Chau Sewage Treatment and Disposal Facilities

Name of Department : Drainage Services Department Contract No./ Work Order No. : DC/2019/07

Project Title: Outlying Islands Sewerage Stage 2 - Upgrading of Cheung Chau Sewage Treatment and Disposal Facilities

Contractor: Build King Civil Engineering Limited

Trip Ticket Account (Main Account): 7039094
Trip Ticket Account (Vessel Account): 7040870

#### Table 5.1: Monthly Summary Waste Flow Table for 2022 (in Weight)

(All quantities shall be rounded off to 3 decimal places) updated on: 05-Sep-2022

		Actual Quan	tities of Inert C&D Materi	als Generated / Imported	d (in '000 kg)		Actual Quantities of Other C&D Materials / Wastes Generated				
Month	Total Quantities Generated	Broken Concrete (including rock for recycling into aggregates)	Reused in the Contract	Reused in Other Projects	Disposed as Public Fill	Imported C&D Material	Metal	Paper/ Cardboard Packaging (f)	Plastic (g) (bottles/containers, plastic sheets/ foams from package material)	Chemical Waste (h)	Others (i) (e.g. General Refuse etc.)
	[a+b+c+d+c+f+g+h+i)	(a)	(b)	(c)	(d)		(e) (in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)
Jan-2022	42.0400	0.0000	0.0000	0.0000	40.5200	0.0000	0.0000	0.0000	0.0000	0.0000	1.5200
Feb-2022	1.3800	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.3800
Mar-2022	2736.9100	0.0000	0.0000	0.0000	2735.9500	0.0000	0.0000	0.0000	0.0000	0.0000	0.9600
Apr-2022	1357.0800	0.0000	0.0000	0.0000	1353.9000	0.0000	0.0000	0.0000	0.0000	0.0000	3.1800
May-2022	1888.2200	0.0000	0.0000	0.0000	1885.0000	0.0000	0.0000	0.0000	0.0000	0.0000	3.2200
Jun-2022	1319.8900	0.0000	0.0000	0.0000	1313.0000	0.0000	0.0000	0.0000	0.0000	0.0000	6.8900
Half-year total	7345.5200	0.0000	0.0000	0.0000	7328.3700	0.0000	0.0000	0.0000	0.0000	0.0000	17.1500
Jul-2022	3144.6400	0.0000	0.0000	0.0000	3140.0000	0.0000	0.0000	0.0000	0.0000	0.0000	4.6400
Aug-2022	2907.2200	0.0000	0.0000	0.0000	2902.0000	0.0000	0.0000	0.0000	0.0000	0.0000	5.2200
Sep-2022											
Oct-2022				·							
Nov-2022											
Dec-2022							·				
Yearly Total	13397.3800	0.0000	0.0000	0.0000	13370.3700	0.0000	0.0000	0.0000	0.0000	0.0000	27.0100

(All quantities shall be rounded off to 3 decimal places)

(All qualities s	nan be founded off to	(All quantities shall be rounded off to 3 decimal places)							Actual Quantities of Other C&D Materials / Wastes Generated			
		Actual Quantities of Inert C&D Materials Generated / Imported (in '000 kg)						Actual Quantities	of Other C&D Materials /	wastes Generated		
Year	Total Quantities Generated	Broken Concrete (including rock for recycling into aggregates)	Reused in the Contract	Reused in Other Projects	Disposed as Public Fill	Imported C&D Material	Metal	Paper/ Cardboard Packaging	Plastic (bottles/containers, plastic sheets/ foams from package material)	Chemical Waste	Others (c.g. General Refuse etc.)	
	[a+b+c+d+e+f+g+h+i)	(a)	(b)	(c)	(d)		(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
2021	858.3600	0.0000	0.0000	0.0000	786.3000	0.0000	0.0000	0.0000	0.0000	0.0000	72.0600	
2022	13397.3800	0.0000	0.0000	0.0000	13370.3700	0.0000	0.0000	0.0000	0.0000	0.0000	27.0100	
2023	0.0000											
2024	0.0000											
2025	0.0000									·		
2026	0.0000											
Total	14255.7400	0.0000	0.0000	0.0000	14156.6700	0.0000	0.0000	0.0000	0.0000	0.0000	99.0700	

Remark:

1) Density of C&D material to be 2 metric ton/m3 3) Density of Chemical Waste to be 0.88 metric ton/m3
2) Density of General Refuse to be 1.6 metric ton/m3

(1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Sites.

- (2) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.
- (3) The summary table shall be submitted to the Project Manager monthly together with the Waste Flow Table for review and monitoring in accordance with the PS Clause 25.20(8)

Notes:

#### 6. LANDSCAPE & VISUAL

- 6.1. The EIA Report has recommended landscape and visual mitigation measures to be undertaken during construction and operational phases of the upgrading of Cheung Chau STW under this Project. The implementation and maintenance of landscape mitigation measures were checked to ensure that they are fully realised and that potential conflicts between the proposed landscape measures and any other project works and without compromise to the intention of the mitigation measures.
- 6.2. Regular audits were carried out to ensure all the recommended landscape and visual mitigation measures were effectively implemented.
- 6.3. The EM&A Manual proposed mitigation measures were checked on a regular basis to ensure compliance with the intended aims of the EIA.

#### 7. SITE INSPECTION AUDIT

- 7.1. 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, site inspections were carried out on 02, 09, 16, 22 and 30 August 2022. A joint site inspection with IEC was carried out on 22 August 2022.
- 7.2. Environmental deficiencies were observed during weekly site inspection. Key observations during the site inspections and during the reporting period are summarized in **Table 7.1**.

**Table 7.1 Site Observations** 

Date	Environmental Observations	Reminders							
02 August 2022	At SD Building and MBR, sand bags was observed broken and should be cleaned access road.	Rectified	Sandbags were replaced around the storm drain and dusty materials along the access road was cleaned.						
09 August 2022	NIL	N.A.	NIL						
16 August 2022	NIL	N.A.	NIL						
22 August 2022	<ol> <li>Sand bags should be replaced to avoid sewage of muddy from flowing into storm drain of MBR.</li> <li>Broken branch should be cut (T5).</li> </ol>	Rectified	<ol> <li>Sandbags were replaced around the storm drain.</li> <li>Broken branch was cleared.</li> </ol>						

Date	Environmental Observations	Follow-up Status	Reminders
30 August 2022	Water Leakage from a pipe spreading to other equipments was observed at the Sewage Pumping Station.	Rectified	NIL

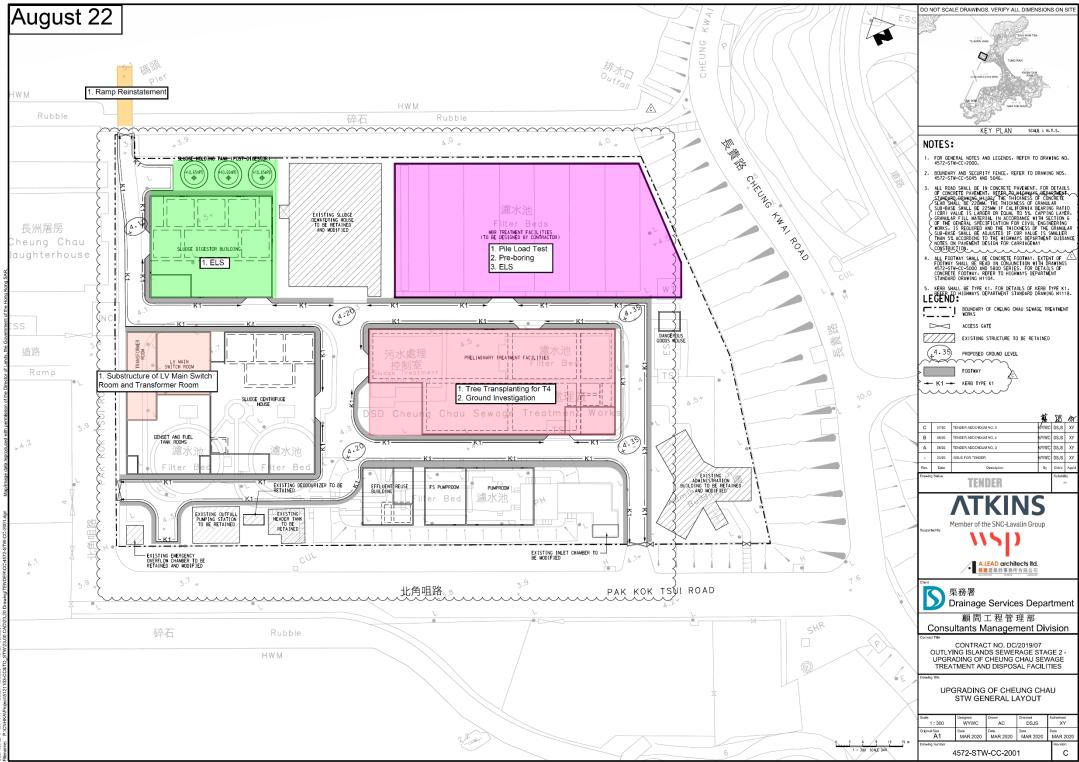
7.3. According to the EIA Study Report, Environmental Permit, contract documents and EM&A Manual, the mitigation measures detailed in the documents should be implemented as much as practical during the reporting period. An updated Implementation Status of Environmental Mitigation Measures (EMIS) is provided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

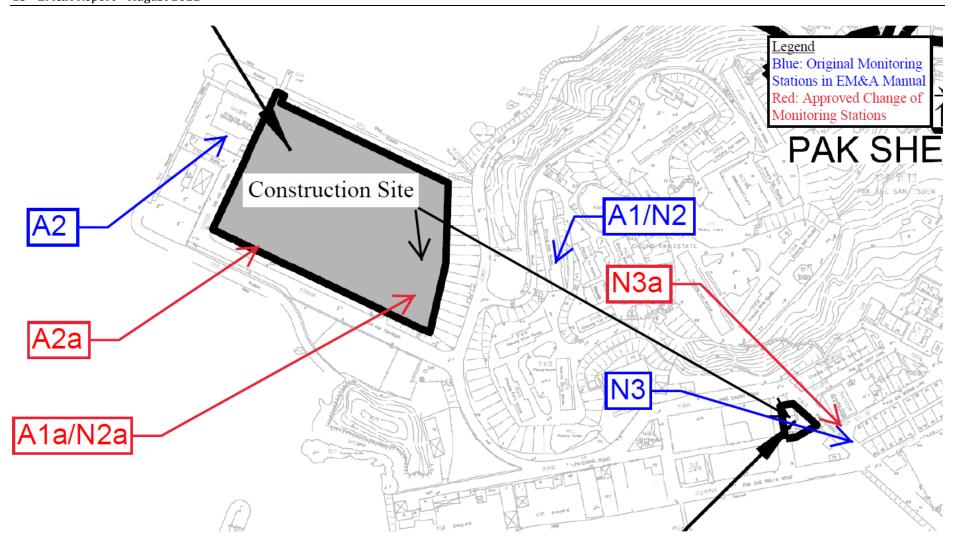
#### 8. Conclusion

- 8.1. This is the 13<sup>th</sup> Monthly EM&A Report for the Project which summarizes the key findings of the programme during the reporting period from 1 August to 31 August 2022, in accordance with the EM&A Manual and the requirement under EP-488/2014/A.
- 8.2. Five (5) sessions of air and five (5) sessions of noise monitoring were carried out at the monitoring locations sited at Cheung Chau in the reporting month.
- 8.3. Site audits were conducted as mitigation measures recommended for water pollution control and landscape and visual impact monitoring in the reporting period. Proper mitigation measures were implemented.
- 8.4. Weekly environmental site inspections were conducted during the reporting period. Only minor deficiencies were observed during site inspections. The environmental performance of the project was therefore considered satisfactory.
- 8.5. No exceedance of Action or Limit Level was recorded in the reporting period.
- 8.6. No environmental complaint was received in the reporting period.
- 8.7. No notification of summons or prosecution was received during the reporting period.

Contract No. DC/2019/07 Environmental Monitoring Works for Upgrading of Cheung Chau Sewage Collection, Treatment and Disposal Facilities 13<sup>th</sup> EM&A Report – August 2022

# APPENDIX A Location Plan and Noise and Dust Monitoring Stations

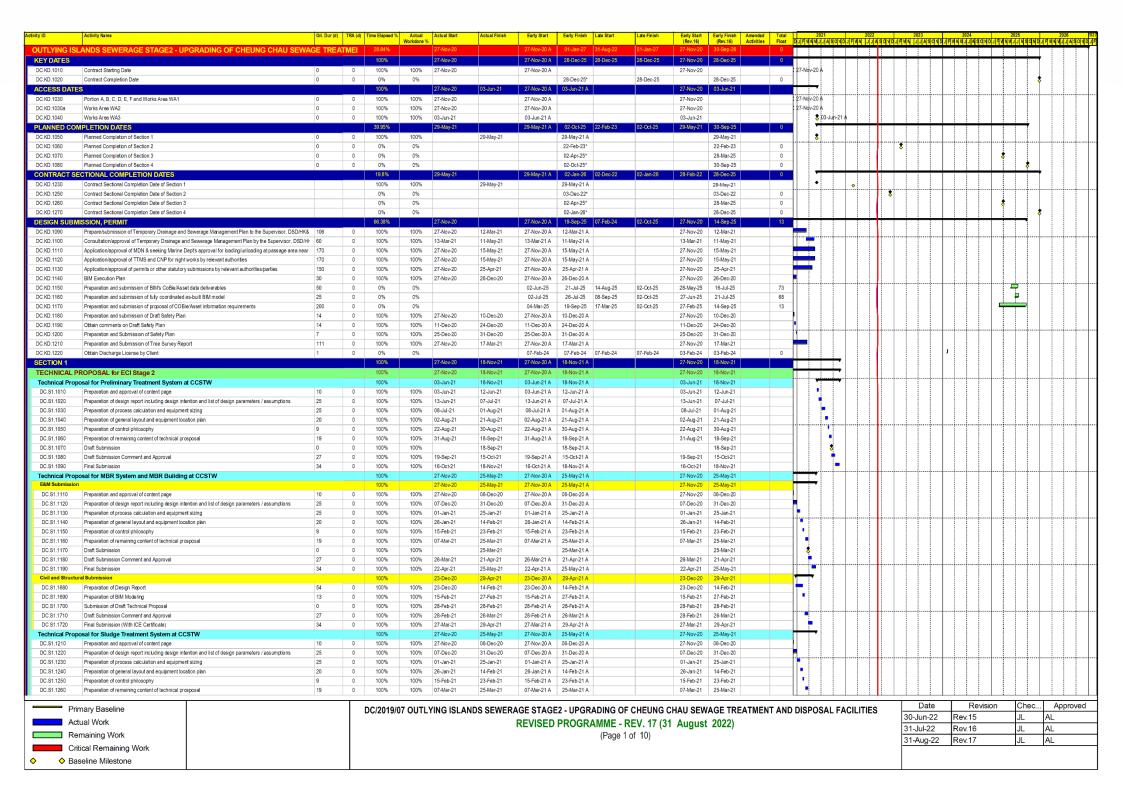


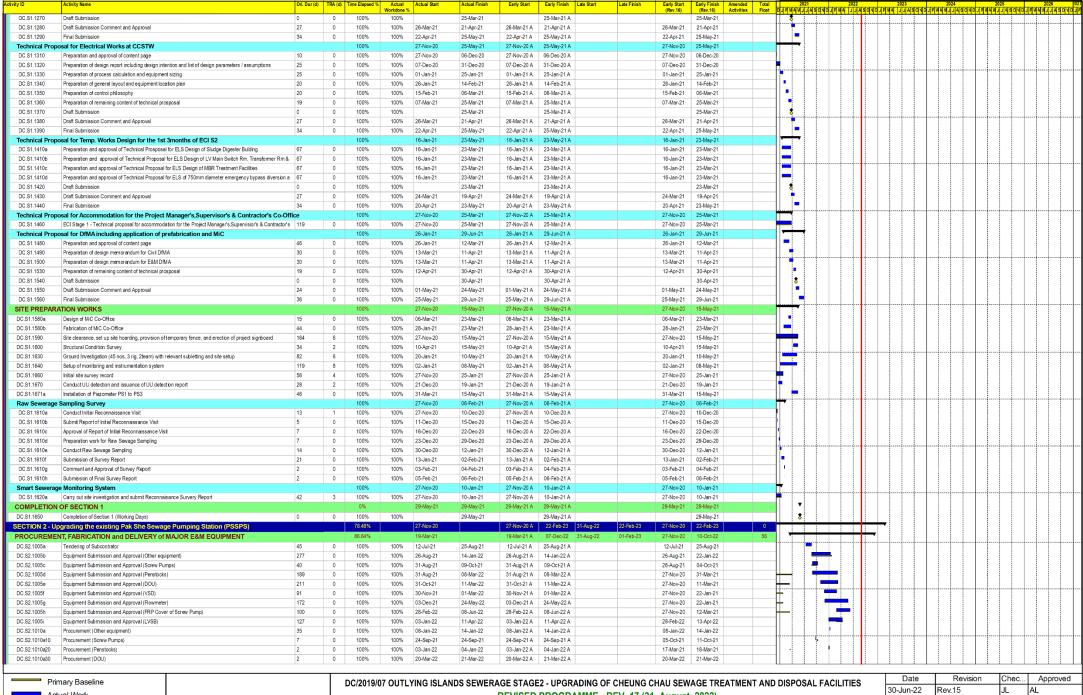


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Contract No. DC/2019/07 Environmental Monitoring Works for Upgrading of Cheung Chau Sewage Collection, Treatment and Disposal Facilities 13<sup>th</sup> EM&A Report – August 2022

# APPENDIX B Construction Programme





Actual Work

Remaining Work

Critical Remaining Work

Baseline Milestone

DC/2019/07 OUTLYING ISLANDS SEWERAGE STAGE2 - UPGRADING OF CHEUNG CHAU SEWAGE TREATMENT AND DISPOSAL FACILITIE

REVISED PROGRAMME - REV. 17 (31 August 2022)

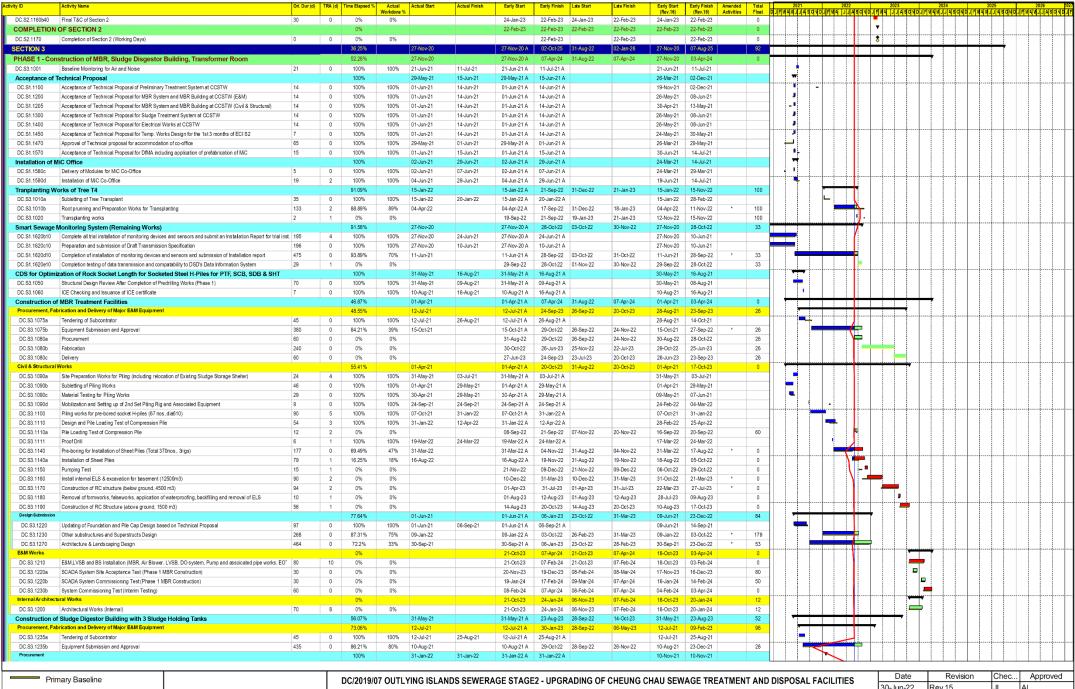
(Page 2 of 10)

Date	1 (0 1101011	01100	, ippiorou
30-Jun-22	Rev.15	JL	AL
31-Jul-22	Rev.16	JL	AL
31-Aug-22	Rev.17	JL	AL

ctivity ID	Activity Name	Ori. Dur (d)	TRA (d)	Time Elapsed %	Actual Workdone %	Actual Start	Actual Finish	Early Start	Early Finish	Late Start	Late Finish	Early Start (Rev.16)	Early Finish (Rev 16)	Amended Activities	Total Float	202	21 14 9 0 4 5	2022    E  v	2023 	2024	2025	2026 4 D J F W 4 W J J A S O N D
DC.S2.1010a40	Procurement (VSD)	1	0	100%	100%	26-Jan-22	26-Jan-22	26-Jan-22 A	26-Jan-22 A			23-Jan-21	23-Jan-21	Activities	Fidat L	1/1/1/1/1/1/1/1/1	44444 <u>0</u>	ALLAN INDINA	MINING IN NAMED IN	National Manager	441144411480	A STANDARD OF THE STANDARD
DC.S2.1010a50	Procurement (Flowmeter)	126	0	100%	100%	26-Jan-22	27-Jan-22	26-Jan-22 A	27-Jan-22 A			26-Jan-22	26-Jan-22					ı				
DC.S2.1010a60	Procurement (FRP Cover of Screw Pump)	1	0	100%	100%	30-May-22	30-May-22	30-May-22 A	30-May-22 A			30-May-22	30-May-22									1 1 1 1 1
DC.S2.1010a70	Procurement (LVSB)	1	0	100%	100%	05-Mar-22	05-Mar-22	05-Mar-22 A	05-Mar-22 A			05-Mar-22	05-Mar-22					<u>'                                    </u>				
DC.S2.1010b	Fabrication (Other equipment)	253	0	72.73%	60%	28-Feb-22		28-Feb-22 A		12-Sep-22	19-Nov-22	28-Feb-22	26-Aug-22		12							
DC.S2.1010b10	Fabrication (Screw Pumps)	253	0	100%	100%	12-Oct-21	29-Apr-22	12-Oct-21 A	29-Apr-22 A			12-Oct-21	29-Apr-22					<u> </u>				
DC.S2.1010b20 DC.S2.1010b30	Fabrication (Penstocks)  Fabrication (DOU)	131	0	100%	100%	19-Mar-21 30-May-22	11-Jun-21	19-Mar-21 A 30-May-22 A	11-Jun-21 A	05-Nov-22	03-Dec-22	19-Mar-21	11-Jun-21		66	<u>-</u>			l	l		
DC.S2.1010b30	Fabrication (VSD)	101	0	76.23% 100%	100%	28-Feb-22	08-Jun-22	28-Feb-22 A	28-Sep-22 08-Jun-22 A	UD-INOV-22	03-Dec-22	30-May-22 28-Feb-22	11-Sep-22 08-Jun-22	-	00							
DC.S2.1010b40	Fabrication (Flowmeter)	122	0	84.43%	84%	20-May-22	00-0011-22	20-May-22 A		01-Dec-22	19-Dec-22	20-May-22	22-Aug-22		92			-				
DC.S2.1010b60	Fabrication (FRP Cover of Screw Pump)	131	0	70.23%	30%	31-May-22		31-May-22 A	08-Oct-22	18-Nov-22	26-Dec-22	31-May-22	03-Sep-22		79							
DC.S2.1010b70	Fabrication (LVSB)	90	0	100%	100%	10-May-22	07-Aug-22	10-May-22 A	07-Aug-22 A			10-May-22	07-Aug-22					<del></del> }				
DC.S2.1010b80	Fabrication (PLC)	142	0	79.58%	80%	10-May-22		10-May-22 A	28-Sep-22	21-Sep-22	19-Oct-22	10-May-22	07-Aug-22	*	21							
DC.S2.1010c	Delivery (Other equipment)	30	0	0%	0%			08-Nov-22	07-Dec-22	20-Nov-22	19-Dec-22	27-Aug-22	25-Sep-22		12			(				
DC.S2.1010c10	Delivery (Screw Pump)	94	0	100%	100%	30-Apr-22	01-Aug-22	30-Apr-22 A	01-Aug-22 A			30-Apr-22	01-Aug-22									
DC.S2.1010c20	Delivery (Penstocks)	37	0	100%	100%	12-Jun-22	18-Jul-22	12-Jun-22 A	18-Jul-22 A			12-Jun-22	18-Jul-22	*				T/L				
DC.S2.1010c30	Delivery (DOU)	17	0	0%	0%	00 1 00	40 1-100	29-Sep-22		04-Dec-22	20-Dec-22	12-Sep-22	28-Sep-22		66				ļ <b>ļļ</b>	ļļ <u>ļ</u> ļ		
DC.S2.1010c40 DC.S2.1010c50	Delivery (VSD) Delivery (Flowmeter)	34	0	100%	100%	09-Jun-22	12-Jul-22	09-Jun-22 A 19-Sep-22	12-Jul-22 A 18-Oct-22	20-Dec-22	18-Jan-23	09-Jun-22	12-Jul-22 21-Sep-22	<u> </u>	92			71/1				
DC.S2.1010c50 DC.S2.1010c60	Delivery (FRP Cover of Screw Pump)	37	0	0%	0%			09-Oct-22		27-Dec-22	01-Feb-23	23-Aug-22 04-Sep-22	10-Oct-22		79			/				
DC.S2.1010c70	Delivery (LVSB)	29	0	79.31%	40%	08-Aug-22		08-Aug-22 A	05-Sep-22	31-Aug-22	05-Sep-22	08-Aug-22	05-Sep-22		0			N N				
DC.S2.1010c80	Delivery (PLC)	30	0	0%	0%	OU Flug EE		29-Sep-22		20-Oct-22	18-Nov-22	08-Aug-22	06-Sep-22		21			<b>/</b> 4 =				
CIVIL AND STE	RUCTURAL WORKS			97.87%		27-Nov-20		27-Nov-20 A	13-Sep-22	16-Sep-22	29-Sep-22	27-Nov-20	19-Aug-22		16			<b>+</b>		liii		
Modification of	emergency by-pass			97.87%		27-Nov-20		27-Nov-20 A	13-Sep-22	16-Sep-22	29-Sep-22	27-Nov-20	19-Aug-22		16			<del>-                                    </del>				
DC.S2.1020		28	2	100%	100%	29-Jun-21	03-Aug-21	29-Jun-21 A	03-Aug-21 A			29-Jun-21	03-Aug-21				•	<b>   </b>				
DC.S2.1021	Delivery of percast concrete pipe and manhole fittings	38	0	100%	100%	27-Nov-20	03-Jan-21	27-Nov-20 A	03-Jan-21 A			27-Nov-20	03-Jan-21			• ! !						
DC.S2.1022	Samples testing for percast concrete pipe and manhole fittings	30	0	100%	100%	04-Jan-21	02-Feb-21	04-Jan-21 A	02-Feb-21 A			04-Jan-21	02-Feb-21			-				l	.lii	
DC.S2.1030	Installation of ELS for TTA Stage 1 and construction of 750 dia. emergency bypass and 3 manholes (BPMH	80	10	100%	100%	04-Aug-21	19-Nov-21	04-Aug-21 A	19-Nov-21 A			04-Aug-21	19-Nov-21									
DC.S2.1031	Backfilling, Removal of Temporary Supports and Reinstatement of Footpath at Ping Chong Road	30	3	100%	100%	20-Nov-21	21-Dec-21	20-Nov-21 A	21-Dec-21 A			20-Nov-21	21-Dec-21									
DC.S2.1040	Implementation of TTA Stage 2 to enclose works area of manhole BPMH03	6	0	100%	100%	20-Nov-21	26-Nov-21	20-Nov-21 A	26-Nov-21 A			20-Nov-21	26-Nov-21					.				
DC.S2.1050 DC.S2.1070	Installation of ELS and construction of 750 dia. emergency bypass for connection to manhole BPMH03	40 28	7	100%	100%	27-Nov-21 25-Jan-22	24-Jan-22 03-Mar-22	27-Nov-21 A 25-Jan-22 A	24-Jan-22 A 03-Mar-22 A			27-Nov-21 25-Jan-22	24-Jan-22 03-Mar-22									
DC.S2.1070 DC.S2.1080	Backfilling, Removal of Temporary Supports and reinstatement of existing road at Ping Chong Road  Pipe CCTV survey, application manhole protective coat, capping and sealing of existing bypass and final co		1	100%	100%	05-May-22	31-May-22	05-May-22 A	31-May-22 A			05-May-22	31-May-22							<del>   </del>		
DC.S2.1150	Submission of as-constructed records after completion of permanent reinstatement of the footpath	14	0	92.78%	88%	04-Mar-22	31-111dy-22	04-Mar-22 A	13-Sep-22	16-Sep-22	29-Sep-22	04-Mar-22	19-Aug-22		16			<u> </u>				
DC.S2.1160	Submission of as-constructed point cloud records after laying of the 750mm diameter precast concrete pipes	14	0	92.78%	88%	04-Mar-22		04-Mar-22 A		16-Sep-22	29-Sep-22	04-Mar-22	19-Aug-22		16							
E&M WORKS	7.4			64.15%		20-Oct-21		20-Oct-21 A	22-Feb-23	03-Sep-22	22-Feb-23	20-Oct-21	22-Feb-23		0		<del>-</del>	<del>-           -                          </del>	<del>-</del>			
DC.S2.1085a	Perparation and Submission of TTA Drawings for Pump Replacement Works	184	0	100%	100%	20-Oct-21	22-Apr-22	20-Oct-21 A	22-Apr-22 A			20-Oct-21	17-Jan-22					<b></b> →   \				
DC.S2.1085b	Obtain Approval of TTA Drawing from relevant parties	30	0	100%	100%	29-Apr-22	28-May-22	29-Apr-22 A	28-May-22 A			29-Apr-22	28-May-22									
DC.S2.1085c	Implementation of TTA for Pump Replacement Works	1	0	100%	100%	24-Jun-22	04-Jul-22	24-Jun-22 A	04-Jul-22 A			24-Jun-22	24-Jun-22									
DC.S2.1090a	Removal of Existing Penstock No.3 and Screw Pump No. 3 and Civil Works for New Installation	23	0	100%	100%	19-Jul-22	13-Aug-22	19-Jul-22 A	13-Aug-22 A			19-Jul-22	13-Aug-22									
DC.S2.1090b	Installation of New Screw Pump No.3	21	0	52.38%	52%	18-Aug-22		18-Aug-22 A		03-Sep-22	15-Sep-22	15-Aug-22	07-Sep-22		3			<b>1</b>				
DC.S2.1090c	Screeding for the screw pump trough for Screw Pump No.3	8	0	0%	0%			13-Sep-22	21-Sep-22	16-Sep-22	24-Sep-22	08-Sep-22	16-Sep-22	*	3					ļļļļ		
DC.S2.1090d	Perparation Works and Carry out Dry Testand Wet Test for Screw Pump No.3	8	0	0%	0%			29-Sep-22		29-Sep-22	06-Oct-22	26-Sep-22	03-Oct-22	,	5			11				
DC.S2.1090d10 DC.S2.1091a	Installation of New Penstock No.3 and Site Acceptance Test  Removal of Existing Penstock No. 2 and Screw Pump No. 2 and Civil Works for New Installation	14	0	0%	0%			13-Sep-22 07-Oct-22	28-Sep-22 20-Oct-22	19-Sep-22 07-Oct-22	06-Oct-22 20-Oct-22	30-Aug-22 05-Oct-22	15-Sep-22 18-Oct-22	-	0			T.				
DC.S2.1091a	Installation of New Screw Pump No. 2	21	0	0%	0%			21-Oct-22		21-Oct-22	14-Nov-22	19-Oct-22	11-Nov-22		0							
DC.S2.1091c	Screeding for the screw pump trough for Screw Pump No.2	8	0	0%	0%		-	15-Nov-22	23-Nov-22	15-Nov-22	23-Nov-22	12-Nov-22	21-Nov-22		0							
DC.S2.1091d	Perparation Works and Carry out Dry Test and Wet Test for Screw Pump No.2	6	0	0%	0%			24-Nov-22		24-Nov-22	29-Nov-22	22-Nov-22	28-Nov-22		0	1					+	
DC.S2.1091d10	Installation of New Penstock No.2 and Site Acceptance Test	14	0	0%	0%			21-Oct-22	05-Nov-22	12-Nov-22	29-Nov-22	19-Oct-22	03-Nov-22		19							
DC.S2.1092a	Removal of Existing Penstock No.1 and Screw Pump No.1 and Civil Works for New Installation	12	0	0%	0%			30-Nov-22	13-Dec-22	30-Nov-22	13-Dec-22	29-Nov-22	12-Dec-22		0			-           •				
DC.S2.1092b	Installation of New Screw Pump No.1 and Penstock No.1	21	0	0%	0%			14-Dec-22	09-Jan-23	14-Dec-22	09-Jan-23	13-Dec-22	07-Jan-23		0			4	•			
DC.S2.1092c	Screeding for the screw pump trough for Screw Pump No.1	6	0	0%	0%			10-Jan-23	16-Jan-23	10-Jan-23	16-Jan-23	09-Jan-23	16-Jan-23		0				<u> </u>			
DC.S2.1092d	Perparation Works and Carry out Dry Test and Wet Test for Screw Pump No.1	7	0	0%	0%		_	17-Jan-23		17-Jan-23	23-Jan-23	17-Jan-23	23-Jan-23		0			<sub> </sub>	'			
DC.S2.1092d10	Installation of New Penstock No.1 and Site Acceptance Test	14	0	0%	0%			14-Dec-22		06-Jan-23	21-Jan-23	13-Dec-22	29-Dec-22		18			<b>                                  </b>				
DC.S2.1100a DC.S2.1100b	Removal of Existing Main Inlet Penstock and Civil Works for New Installation  Replacement of Main Inlet Penstock with Site Acceptance Test & T & C	14	0	0%	0%		-	27-Sep-22 15-Oct-22	14-Oct-22 31-Oct-22	19-Dec-22	05-Jan-23 21-Jan-23	07-Sep-22 24-Sep-22	23-Sep-22 12-Oct-22		68 68							
DC.S2.11000 DC.S2.1120	Replacement of the discharge EM flowmeter and modification of associated pipework	12	0	0%	0%			10-Oct-22		06-Jan-23 09-Jan-23	21-Jan-23	12-Sep-22	24-Sep-22		75			150				
DC.S2.1130	Installation of Deodorization Unit 6 and associated FRP ductowork	24	2	0%	0%		_	08-Dec-22		21-Dec-22	21-Jan-23	07-Dec-22	07-Jan-23		11				<b>,</b>	<del> </del>	- <del>    -</del> -	
DC.S2.1140	Replacement of Existing Portable Emergency Generator Set by Mobile Emergency Generator Set	58	2	0%	0%			29-Oct-22	10-Jan-23	10-Nov-22	21-Jan-23	26-Sep-22	07-Dec-22		10			//				
DC.S2.1141	Replacement of Existing LV Switchboard by New LV Switchboard, PLC Panel and UPS	110	1	23.42%	23%	01-Aug-22		01-Aug-22 A	12-Dec-22	12-Oct-22	21-Jan-23	01-Aug-22	12-Dec-22		33			<b>—</b>				
DC.S2.1142	Installation of Screw Pump Starters and Variable Speed Drivers	110	1	37.84%	10%	13-Jul-22		13-Jul-22 A	22-Nov-22	31-Oct-22	21-Jan-23	13-Jul-22	22-Nov-22		49							
DC.S2.1143	Replacement of Existing Wall Mounted MCB Boards and Miscellaneous Panel in the Screw Pump House	63	1	40.63%	40%	01-Aug-22		01-Aug-22 A	17-Oct-22	20-Oct-22	03-Dec-22	01-Aug-22	17-Oct-22		40			•				
DC.S2.1144	Diversion & Modification of Electrical System for Existing Equipment	38	2	0%	0%			18-Oct-22	03-Dec-22		21-Jan-23		18-Nov-22		40							
DC.S2.1145	Cable Installation for Penstock, Screw Pump, DOU	80	2	31.71%		01-Aug-22		01-Aug-22 A	07-Nov-22		09-Jan-23	01-Aug-22			51				L			
DC.S2.1146	Installation of FRP cover of screw pump	95	0	0%	0%			24-Sep-22	18-Jan-23		21-Jan-23	20-Sep-22			3				7			
DC.S2.1152	Installation of MCPs and related cable termination	20	0	0%	0%	24 14 02		06-Sep-22	29-Sep-22		29-Sep-22	06-Sep-22	_		0							
DC.S2.1160b05	Submission of Draft O&M manual	130	0	23.85%	10%	31-Jul-22		31-Jul-22 A	07-Dec-22		13-Dec-22	31-Jul-22	07-Dec-22		6 7	ļļ		<del>7</del>	<u> </u>	<b>   </b>		
DC.S2.1160b10 DC.S2.1160b20	Submission of Final O&M manual  O&M Training to DSD/ST2	70	0	0%	0%			08-Dec-22 09-Jan-23	15-Feb-23 13-Jan-23		22-Feb-23 22-Feb-23	29-Sep-22 09-Jan-23	26-Jan-23 13-Jan-23	-	40							
DC.S2.1160b20 DC.S2.1160b30	Handover Inspection with DSD/ST2	1	0	0%	0%			20-Feb-23	20-Feb-23		22-Feb-23	20-Feb-23			2							
		1.					1									<u> </u>	:	1 1 11	Date	Dovin	ion Icha	Approved
Prir	nary Baseline			DC/2019/0	7 OUTL	ING ISLANI	DS SEWERA	AGE STAGE	2 - UPGR	ADING OF	CHEUNG C	HAU SEW	AGE TRI	EATMEN	IT AND	DISPOS	SAL FA	CILITIES		Revis	sion Che	
Act	ual Work							REVISED	PROGRA	MME - R	EV. 17 (31	August	2022)						30-Jun-22	Rev.15	JL	AL
	maining Work									(Page 3		,guot							31-Jul-22	Rev.16	JL	AL
	- I									(i aye 3 i	01 10)								31-Aug-22	Rev.17	JL	AL
Crit	ical Remaining Work																					

Baseline Milestone

Date	Revision	CHEC	Approved
30-Jun-22	Rev.15	JL	AL
31-Jul-22	Rev.16	JL	AL
31-Aug-22	Rev.17	JL	AL



Actual Work

Remaining Work

Critical Remaining Work

Baseline Milestone

DC/2019/07 OUTLYING ISLANDS SEWERAGE STAGE2 - UPGRADING OF CHEUNG CHAU SEWAGE TREATMENT AND DISPOSAL FACILITIE

REVISED PROGRAMME - REV. 17 (31 August 2022)

(Page 4 of 10)

Date	Revision	Chec	Approved
30-Jun-22	Rev.15	JL	AL
31-Jul-22	Rev.16	JL	AL
31-Aug-22	Rev.17	JL	AL

vity ID	Activity Name	Orl. Dur (d)	TRA (d)	Time Elapsed	% Actual	Actual Start	Actual Finish	Early Start	Early Finish Late Start	Late Finish	Early Start Early Finish	Amended Total	2021 2022	2023	2024	2025	2026
				1000	Workdone 9	6		211, 221	1		Early Start (Rev.16) (Rev.16)	Activities Float	DIFMAMILIANDINA NITE	MONEMA NINASOMONE	MANJUNASONDUFMAN	MINASONDIFM	d M 1 1 M a d M D
DC.S3.1240a1	Sludge Digester Feed Pump and Digested Sludge Pump	1	0	100%	100%	31-Jan-22 31-Jan-22	31-Jan-22 31-Jan-22	31-Jan-22 A 31-Jan-22 A	31-Jan-22 A 31-Jan-22 A		10-Nov-21 10-Nov-21 10-Nov-21 10-Nov-21						
DC.S3.1240a10	Studge Digester Air Blower Air Diffuser for Studge Digester	1	0	100%	100%	31-Jan-22 31-Jan-22	31-Jan-22	31-Jan-22 A	31-Jan-22 A 31-Jan-22 A		10-Nov-21 10-Nov-21 10-Nov-21 10-Nov-21		1				
DC.S3.1240811 DC.S3.1240a2	Submersible Mixer for Digested Sludge Holding Tank	1	0	100%	100%	31-Jan-22 31-Jan-22	31-Jan-22 31-Jan-22	31-Jan-22 A 31-Jan-22 A	31-Jan-22 A 31-Jan-22 A		10-Nov-21 10-Nov-21 10-Nov-21 10-Nov-21		<del> </del>				
DC.S3.1240a3	Deodorization Unit 4	1	0	100%	100%	31-Jan-22	31-Jan-22	31-Jan-22 A	31-Jan-22 A		10-Nov-21 10-Nov-21		11				
DC.S3.1240a4	LV Switchboards, Motor Control Centers and Associated Components	1	0	100%	100%	31-Jan-22	31-Jan-22	31-Jan-22 A	31-Jan-22 A		10-Nov-21 10-Nov-21		1				
DC.S3.1240a5	Variable Speed Drive (VSD)	1	0	100%	100%	31-Jan-22	31-Jan-22	31-Jan-22 A	31-Jan-22 A		10-Nov-21 10-Nov-21		11				
DC.S3.1240a6	Cable	1	0	100%	100%	31-Jan-22	31-Jan-22	31-Jan-22 A	31-Jan-22 A		10-Nov-21 10-Nov-21		11				
DC.S3.1240a7	Pipe Work/Valve	1	0	100%	100%	31-Jan-22	31-Jan-22	31-Jan-22 A	31-Jan-22 A		10-Nov-21 10-Nov-21		<del> </del>				
DC.S3.1240a8	Instrument	1	0	100%	100%	31-Jan-22	31-Jan-22	31-Jan-22 A	31-Jan-22 A		10-Nov-21 10-Nov-21		1				
DC.S3.1240a9	Lifting Appliance	1	0	100%	100%	31-Jan-22	31-Jan-22	31-Jan-22 A	31-Jan-22 A		10-Nov-21 10-Nov-21						
Fabrication				74.79%		01-Feb-22		01-Feb-22 A	26-Nov-22 08-Nov-22	20-Mar-23	01-Feb-22 09-Feb-23	114		<b>-</b>			
DC.S3.1240b1	Sludge Digester Feed Pump and Digested Sludge Pump	240	0	87.92%	86%	01-Feb-22		01-Feb-22 A	28-Sep-22 07-Feb-23	07-Mar-23	01-Feb-22 28-Aug-22	* 160	1				
DC.S3.1240b10	Sludge Digester Air Blower	169	0	100%	100%	01-Feb-22	20-Jul-22	01-Feb-22 A	20-Jul-22 A		31-Jul-22 09-Feb-23		<u> </u>				
DC.S3.1240b11	Air Diffuser for Sludge Digester	240	0	87.92%	83%	01-Feb-22		01-Feb-22 A	28-Sep-22 20-Feb-23	20-Mar-23	01-Feb-22 01-May-22	* 173					
DC.S3.1240b2	Submersible Mixer for Digested Sludge Holding Tank	164	0	100%	100%	01-Feb-22	15-Jul-22	01-Feb-22 A	15-Jul-22 A		01-Feb-22 13-Aug-22						
DC.S3.1240b3	Deodorization Unit 4	299	0	70.57%	40%	01-Feb-22		01-Feb-22 A	26-Nov-22 08-Nov-22	03-Feb-23	01-Feb-22 26-Nov-22	* 69		<b>-</b>			
DC.S3.1240b4	LV Switchboards, Motor Control Centers and Associated Components	239	0	88.28%	75%	01-Feb-22		01-Feb-22 A	27-Sep-22 26-Jan-23	22-Feb-23	01-Feb-22 27-Sep-22	* 148	1				
DC.S3.1240b5	Variable Speed Drive (VSD)	180	0	100%	100%	01-Feb-22	30-Jul-22	01-Feb-22 A	30-Jul-22 A		01-Feb-22 16-Apr-22						
DC.S3.1240b6	Cable	240	0	87.92%	75%	01-Feb-22		01-Feb-22 A	28-Sep-22 11-Jan-23	08-Feb-23	01-Feb-22 16-May-22	* 133					
DC.S3.1240b7	Pipe Work/Valve	243	0	86.83%	75%	01-Feb-22		01-Feb-22 A	01-Oct-22 08-Jan-23	08-Feb-23	01-Feb-22 27-Sep-22	* 130					
DC.S3.1240b8	Instrument	243	0	86.83%	40%	01-Feb-22		01-Feb-22 A	01-Oct-22 08-Jan-23	08-Feb-23	01-Feb-22 27-Sep-22	* 130	]				
DC.S3.1240b9	Lifting Appliance	243	0	86.83%	40%	01-Feb-22		01-Feb-22 A	01-Oct-22 08-Jan-23	08-Feb-23	01-Feb-22 27-Sep-22	* 130					
Delivery				39.23%		24-May-22		24-May-22 A	30-Jan-23 04-Feb-23	06-May-23	24-May-22 30-Jan-23	96					i TT
DC.S3.1240c1	Sludge Digester Feed Pump and Digested Sludge Pump	33	0	0%	0%			29-Sep-22*	31-Oct-22 08-Mar-23	09-Apr-23	29-Aug-22 30-Sep-22	160	]	'			
DC.S3.1240c10	Sludge Digester Air Blower	26	0	100%	100%	01-Aug-22	26-Aug-22	01-Aug-22 A	26-Aug-22 A		01-Aug-22 26-Aug-22	•	]				
DC.S3.1240c11	Air Diffuser for Sludge Digester	47	0	0%	0%			29-Sep-22	14-Nov-22 21-Mar-23	06-May-23	15-Aug-22 30-Sep-22	173		4			
DC.S3.1240c2	Submersible Mixer for Digested Sludge Holding Tank	60	0	51.67%	50%	31-Jul-22		31-Jul-22 A	28-Sep-22 12-Mar-23	09-Apr-23	31-Jul-22 28-Sep-22	193					<u>ll</u>
DC.S3.1240c3	Deodorization Unit 4	65	0	0%	0%			27-Nov-22	30-Jan-23 04-Feb-23	09-Apr-23	27-Nov-22 30-Jan-23	69	4				
DC.S3.1240c4	LV Switchboards, Motor Control Centers and Associated Components	56	0	0%	0%			28-Sep-22	22-Nov-22 23-Feb-23	19-Apr-23	28-Sep-22 22-Nov-22	148	4                <u>-1</u>	•			
DC.S3.1240c5	Variable Speed Drive (VSD)	44	0	100%	100%	24-May-22	07-Jul-22	24-May-22 A	07-Jul-22 A		24-May-22 07-Jul-22	,		_			
DC.S3.1240c6	Cable	60	0	0%	0%			29-Sep-22	27-Nov-22 09-Feb-23	09-Apr-23	30-May-22 28-Jul-22	* 133		<u>-                                    </u>			
DC.S3.1240c7	Pipe Work/Valve	60	0	0%	0%			02-Oct-22	30-Nov-22 09-Feb-23	09-Apr-23	02-Oct-22 30-Nov-22	130					
DC.S3.1240c8	Instrument	60	0	0%	0%			02-Oct-22	30-Nov-22 09-Feb-23	09-Apr-23	02-Oct-22 30-Nov-22	130	4				
DC.S3.1240c9 Civil & Structural	Lifting Appliance	60	0	73.59%	0%	0.11		02-Oct-22	30-Nov-22 09-Feb-23	09-Apr-23	02-Oct-22 30-Nov-22	130					
DC.S3.1250		36	4	100%	100%	31-May-21	17-Jul-21	31-May-21 A	10-Feb-23 24-Oct-22 17-Jul-21 A	01-Apr-23	31-May-21 11-Jan-23 31-May-21 17-Jul-21	50	<mark>                                     </mark>				
DC.S3.1250 DC.S3.1280a	Site Preparation Works for Piling (including removal of existing Studge Tank)	29	0	100%	100%	31-May-21 01-Aug-21		31-May-21 A	29-Aug-21 A		,		T•				
DC.S3.1280a10	Subletting of Supply and Installation of ELS Preliminary Pile and Pile Load Test	45	3	100%	100%	12-Jul-21	29-Aug-21 06-Sep-21	01-Aug-21 A 12-Jul-21 A	29-Aug-21 A 06-Sep-21 A		01-Aug-21 29-Aug-21 03-Dec-21 04-Feb-22		<del> </del>				
DC.S3.1280a10 DC.S3.1280b	Piling works for pre-bored socket H-piles (37 nos, dia610, 1team)	79	4	100%	100%	23-Jul-21	01-Nov-21	23-Jul-21 A	01-Nov-21 A		15-Dec-21 25-Mar-22		╢┈┈┸╜╢				
DC.S3.1290a	Pre-boring for installation of sheet piles	122	1	100%	100%	01-Nov-21	31-Mar-22	01-Nov-21 A	31-Mar-22 A		01-Nov-21 26-Feb-22						
DC.S3.1290b	Installation of sheet piles (FSPVL)	25	2	100%	100%	01-Apr-22	07-May-22	01-Apr-22 A	07-May-22 A		01-Apr-22 07-May-22		{				
DC.S3.1300	Excavation for basement of Sludge Digestor Building (3425m3 exca, 1 team)	109	2	85.59%	80%	10-May-22	07-May-22	10-May-22 A	19-Sep-22 24-Oct-22	10-Nov-22	10-May-22 20-Aug-22	* 43					
DC.S3.1310a	Subletting of Rebar Fixing	45	0	100%	100%	25-Nov-21	19-Jan-22	25-Nov-21 A	19-Jan-22 A	10 1107 22	25-Nov-21 19-Jan-22	40	<del> </del>		+		<del>,</del>
DC.S3.1310b	Subletting of Formworks, Concretor and Miscellaneous Works	45	0	100%	100%	25-Nov-21	19-Jan-22	25-Nov-21 A	19-Jan-22 A		25-Nov-21 19-Jan-22		{				
DC.S3.1310c	Construction of RC substructures of sludge digestor building (Grid 2-4)	57	2	0%	0%	20110121	10 0011 22	20-Sep-22	30-Nov-22 11-Nov-22	21-Jan-23	22-Aug-22 01-Nov-22	43	<u> </u>	_			
DC.S3.1320	Backfilling to ground level and removal of ELS (Gride 2-4)	5	1	0%	0%			01-Dec-22	07-Dec-22 25-Jan-23	31-Jan-23	02-Nov-22 08-Nov-22	43		.			
DC.S3.1330	Installation of ELS and excavation for pile cap of Sludge Holding Tanks (523m3 exca, 1team)	9	1	0%	0%			08-Nov-22	18-Nov-22 30-Dec-22	11-Jan-23	11-Oct-22 21-Oct-22	43					.
DC.S3.1340	Construction of RC structure of Sludge Holding Tanks (below ground, 226m3)	22	2	0%	0%			19-Nov-22	17-Dec-22 12-Jan-23	10-Feb-23	22-Oct-22 18-Nov-22	43					/********
DC.S3.1350	Backfilling to ground level and removal of ELS (Sludge Holding Tank)	5	1	0%	0%			19-Dec-22	24-Dec-22 11-Feb-23	17-Feb-23	19-Nov-22 25-Nov-22	43		.			
DC.S3.1351	Construction of RC superstructure (Sludge Holding Tank)	35	2	0%	0%			27-Dec-22	10-Feb-23 18-Feb-23	01-Apr-23	28-Nov-22 11-Jan-23	43	1	<b>≠</b>			
DC.S3.1360	Construction of RC Structure (Gride 1-4) (above ground, 856m3)	35	2	0%	0%			27-Dec-22	10-Feb-23 18-Feb-23	01-Apr-23	28-Nov-22 11-Jan-23	43	1	<b>-</b> ₽			
DC.S3.1390	Installation of ELS and excavation for substructures of Sludge Digestor Building (Gride 1-2) (523m3 exca, 1	9	1	0%	0%			08-Nov-22	18-Nov-22 30-Dec-22	11-Jan-23	11-Oct-22 21-Oct-22	43	1	0	1 1 1 1 1		
DC.S3.1400	Construction of RC substructure of sludge digestor building (Grid 1-2)	22	2	0%	0%			19-Nov-22	17-Dec-22 12-Jan-23	10-Feb-23	22-Oct-22 18-Nov-22	43		<b>-</b>			
DC.S3.1410		5	1	0%	0%			19-Dec-22	24-Dec-22 11-Feb-23	17-Feb-23	19-Nov-22 25-Nov-22	43	1	-1			
E&M Works				0%				11-Feb-23	22-Jun-23 03-Apr-23	28-Jul-23	12-Jan-23 22-Jun-23	36		<del></del>			
DC.S3.1380a	Installation of Submersible Mixer, Air Blower, Air Diffuser, Feed Pump, DOU	56	0	0%	0%			27-Feb-23	08-May-23 03-Apr-23	13-Jun-23	27-Feb-23 08-May-23	30	]	-			
DC.S3.1380b	Installation of Cable Containment & Conduit	25	0	0%	0%			11-Feb-23	11-Mar-23 21-Apr-23	20-May-23	12-Jan-23 11-Feb-23	55	<u> </u>				
DC.S3.1380c	Installation of BS Equipment, Cable, Instrument, PLC Panel	43	0	0%	0%			27-Feb-23	21-Apr-23 08-May-23	28-Jun-23	30-Jan-23 20-Mar-23	55					
DC.S3.1390a	SCADA System Site Acceptance Test (Phase 1 Sludge Digestor Building Construction)	30	0	0%	0%			29-Mar-23	27-Apr-23 30-May-23	28-Jun-23	29-Mar-23 27-Apr-23	62	]				
DC.S3.1390b	SCADA System Commissioning Test (Phase 1 Sludge Digestor Building Construction)	30	0	0%	0%			28-Apr-23	27-May-23 29-Jun-23	28-Jul-23	28-Apr-23 27-May-23	62	]	-			
DC.S3.1400b	System Commissioning Test (Interim Testing)	30	0	0%	0%			24-May-23	22-Jun-23 29-Jun-23	28-Jul-23	24-May-23 22-Jun-23	36					
Internal Architect				0%				08-May-23	23-Aug-23 29-Jun-23	14-Oct-23	08-May-23 23-Aug-23	43					<u>lL</u>
DC.S3.1370		84	6	0%	0%			08-May-23	23-Aug-23 29-Jun-23	14-Oct-23	08-May-23 23-Aug-23	43					
	LV Main Swtich Room, Transformer Room			58.37%		12-Jul-21		12-Jul-21 A	22-Jun-23 24-Nov-22	28-Jul-23	12-Jul-21 22-Jun-23	36					
	rication and Delivery of Major E&M Equipment	1		87%		12-Jul-21		12-Jul-21 A	31-Oct-22 09-Feb-23	11-Apr-23	12-Jul-21 27-Nov-22	162		'			
DC.S3.1405a	Tendering of Subcontrator	45	0	100%	100%	12-Jul-21	25-Aug-21	12-Jul-21 A	25-Aug-21 A		12-Jul-21 25-Aug-21		.       <mark></mark>				
DC.S3.1405b	Equipment Submission and Approval	140	0	100%	100%	10-Sep-21	18-Dec-21	10-Sep-21 A	18-Dec-21 A		10-Sep-21 18-Dec-21		<u> </u>		4-4-4-4		
DC.S3.1410a	Procurement	30	0	100%	100%	14-Feb-22	14-Feb-22	14-Feb-22 A	14-Feb-22 A		20-Mar-22 18-Apr-22		.				
DC.S3.1410b	Fabrication	257	0	87.55%	65%	18-Jan-22		18-Jan-22 A	01-Oct-22 09-Feb-23	12-Mar-23	18-Jan-22 01-Oct-22	* 162			<u> </u>		
	nary Baseline			DOIOGAG	(07 CUT)	VINO IOI AT	DC CELVES	ACE CTAC	-1 UDODADINO 0-	CHEUNIC	MALL OF MA OF TO	_ A TRACE! T A ! ! .	DICDOCAL FACULTIES	Date	Revision	Chec	Approved
	· ·			DC/2019	107 0011	YING ISLAN	IDS SEWER					EATMENT AND	DISPOSAL FACILITIES	30-Jun-22	Rev.15	JI AI	
	ial Work								DDOODAMME F	EV 47 /24							

Actual Work

Remaining Work

Critical Remaining Work

Baseline Milestone

DC/2019/07 OUTLYING ISLANDS SEWERAGE STAGE2 - UPGRADING OF CHEUNG CHAU SEWAGE TREATMENT AND DISPOSAL FACILITI
REVISED PROGRAMME - REV. 17 (31 August 2022)

(Page 5 of 10)

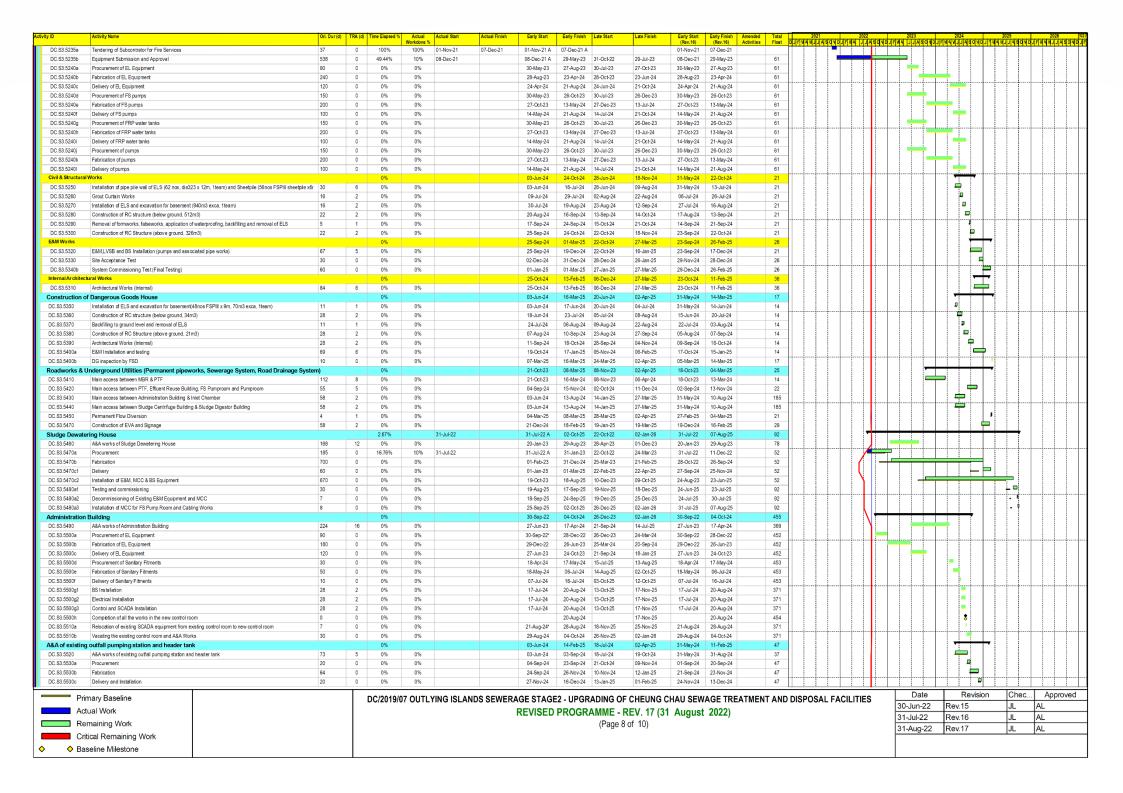
Date	Revision	Chec	Approved
30-Jun-22	Rev.15	JL	AL
31-Jul-22	Rev.16	JL	AL
31-Aug-22	Rev.17	JL	AL

	Activity Name	Oil. Dur (d)	rivi (a)	Time Elapsed %	Workdone %	Actual Start Ac		arly Start	Early Finish Late Start	Late Finish				JEMAMJIASONDJEMA JUJASONDJEMA J	<u>IMAGADALIANANIJAGADALIANAN</u>	114804014M4M11
IC.S3.1410c	Delivery	30	0	0%	0%	04.0.404		02-Oct-22	31-Oct-22 13-Mar-23	11-Apr-23		27-Nov-22	162	<u> </u>		
vil & Structural				81.73%	1000	04-Oct-21		4-Oct-21 A	12-Nov-22 24-Nov-22	16-Feb-23		12-Nov-22	96			
C.S3.1420	Piling works for pre-bored socket H-piles (17 nos, dia610) (1team)	24	5	100%	100%			5-Oct-21 A	18-Nov-21 A			02-Apr-22				
C.S3.1430	Pre-boring of sheet piles & installation of pipe pile wall	56	2	100%	100%			9-Nov-21 A	29-Jan-22 A			18-Jun-22				
IC.S3.1431	Grouting Curtain Works	48	2	100%	100%			1-Jan-22 A	01-Apr-22 A			01-Apr-22				
IC.S3.1450 IC.S3.1460a	Installation of Sheet Piles	8 45	0	100%	100%			1-Oct-21 A	11-Apr-22 A 25-Nov-21 A			11-Apr-22 25-Nov-21				
C.S3.1460b	Subletting of Earthworks  Installation of ELS and excavation for basement of LV Main Switch Room and Transformer Room	54	2	100%	100%			2-Apr-22 A	23-Jun-22 A			30-May-22				
		25	2					-				-				
IC.S3.1470	Construction of RC structure (pile cap)	13	4	100%	100%			5-Jun-22 A	28-Jul-22 A			02-Jul-22 1		<del>   </del>		
IC.S3.1480 IC.S3.1490a	Removal of formworks, falseworks, backfilling/mass filling and removal of ELS  Subletting of Finishing Works	97	0	38.14%	25%	19-Jul-22 03 19-Jul-22		9-Jul-22 A 9-Jul-22 A	03-Aug-22 A 11-Nov-22 24-Nov-22	07-Feb-23		03-Aug-22 08-Sep-22	70			
IC.S3.1490a	Construction of RC Structure (Remaining)	73	2	18.67%	15%	15-Aug-22		5-Aug-22 A	12-Nov-22	16-Feb-23		12-Nov-22	77			
&M Works	and detail at the added a framewills.		-	0%	10.10	10 Tog EL		4-Nov-22	22-Jun-23 23-Feb-23	28-Jul-23		22-Jun-23	36	<del>     </del>		
C.S3.1500	Installation of E&M,LVSB and BS equipments	58	3	0%	0%		14	4-Nov-22	28-Jan-23 13-Mar-23	29-May-23	14-Nov-22 2	28-Jan-23	97			
C.S3.1510	Site Acceptance Test	30	0	0%	0%		29	9-Jan-23	27-Feb-23 30-May-23	28-Jun-23	29-Jan-23 2	27-Feb-23	121			
C.S3.1520	System Commissioning Test (Interim and Final Testing)	30	0	0%	0%		24	4-May-23	22-Jun-23 29-Jun-23	28-Jul-23	24-May-23 2	22-Jun-23	36			
&M Works at Trans	sformer Room			0%			29	9-Nov-22	23-May-23 23-Feb-23	28-Jun-23	03-Dec-22 2	23-May-23	36	<del>     </del>		
DC.S3.1530a	Installation of BS equipment at CLP Transformer Room	34	2	0%	0%		29	9-Nov-22	11-Jan-23 23-Feb-23	06-Apr-23	03-Dec-22 1	16-Jan-23	70			
DC.S3.1530b	Site Acceptance Test	4	0	0%	0%		12	2-Jan-23	15-Jan-23 10-Apr-23	13-Apr-23	17-Jan-23 2	20-Jan-23	88			
DC.S3.1530c	CLP Inspection and Defect Rectification	12	0	0%	0%			6-Jan-23	31-Jan-23 14-Apr-23	27-Apr-23		06-Feb-23	70			
DC.S3.1530d	CLP Re-inspection and Minor Defect Rectification	4	0	0%	0%			11-Feb-23	04-Feb-23 28-Apr-23	03-May-23		10-Feb-23	70			
DC.S3.1530e	Handover to CLP for CLP's Works	45	0	0%	0%			6-Feb-23	29-Mar-23 04-May-23	27-Jun-23		04-Apr-23	70			
DC.S3.1530f	Engerizing	1	0	0%	0%			3-May-23	23-May-23 28-Jun-23	28-Jun-23	,	23-May-23	29			4-4-4-4
ternal Architec		1		0%	611			2-Nov-22	07-Jan-23 08-Feb-23	29-May-23		11-Jan-23	113			
C.S3.1550	Architectural Works (Internal)	40	5	0%	0%			4-Nov-22	07-Jan-23 31-Mar-23	29-May-23		11-Jan-23	113			
C.S3.1560	Architectural Works for CLP Transformer Room (Internal)	12	1	0%	0%			2-Nov-22	28-Nov-22 08-Feb-23	22-Feb-23		02-Dec-22	70	<u> </u>		
	f Underground Utilities and ELA for FSD Inspection (TOP1)	Luini Co		0%	611			11-Mar-23	22-May-23 25-Apr-23	27-Jun-23		22-May-23	36			
C.S3.1600	Construction of Drainage and Sewerage System, Fire Services, Electrical & Plumping Undergound		2	0%	0%			11-Mar-23	13-Apr-23 25-Apr-23	05-Jun-23		11-Mar-23	43			
C.S3.1610	Road Reinstatement (for FSD Inspection TOP1)	6	1	0%	0%			14-Apr-23	21-Apr-23 06-Jun-23	13-Jun-23		20-Mar-23	43			
C.S3.1620	FSD Inspection for CCSTW (TOP1)	14	0	0% 16.87%	0%	24-Jun-22		9-May-23 1-Jun-22 A	22-May-23 14-Jun-23 31-Jul-23 31-Aug-22	27-Jun-23 04-Sep-23	-	22-May-23 31-Jul-23	36 35	<del>           </del>	<b>-</b>	
	dge Digestion System	80	3	68.67%	000/								0			
C.S3.1700 C.S3.1710	Construction of Temporary Sludge Digestion System, T&C  Temporary Flow Diversion and isolate existing aerobic sludge digestor and relevant buildings	8	3	00.07%	68%	24-Jun-22		1-Jun-22 A 13-Oct-22	30-Sep-22 31-Aug-22 13-Oct-22 03-Oct-22	30-Sep-22 13-Oct-22		31-Aug-22 1 12-Sep-22	0			
D.S3.1710	Removal of Temporary Sludge Digestion System	30	2	0%	0%			3-Jun-23	31-Jul-23 29-Jul-23	04-Sep-23	-	31-Jul-23	30	<del>      - </del>		
	Clearance at the area of Proposed Preliminay Treatment Facilities	30	2	39.74%	076	31-Jul-22		1-Jul-22 A	02-Dec-22 02-Oct-22	30-Dec-22	31-Jul-22 (	02-Jan-23	28			
molition wo				39.74%		31-Jul-22		1-Jul-22 A	02-Dec-22 02-Oct-22	30-Dec-22		02-Jan-23	28			
C.S3.2010		42	0	0%	0%	31-301-22		14-Oct-22	02-Dec-22 02-Oct-22 02-Dec-22 14-Oct-22	02-Dec-22		02-Jan-23 02-Nov-22	0			
C.S3.2010	Demoltion of existing Aerobic Sludge Digestor  Demoltion of existing Blower and Pump House	42	0	0%	0%			14-0ct-22	02-Dec-22 14-Oct-22	02-Dec-22		02-Nov-22 02-Nov-22	0			
C.S3.2020		42	0	0%	0%			14-0ct-22	02-Dec-22 14-Oct-22	02-Dec-22	-	02-Nov-22	0			+
C.S3.2031	Demoftion of existing Gens et Room	154	2	42.31%	66%	31-Jul-22				30-Dec-22			32			
C.S3.2040	Ground Investigation (6 nos., 1rig, 1 team)  Disconnecting data link of removed existing equipment from the existing SCADA system	7	0	0%	0%	31-301-22		1-Jul-22 A 14-Oct-22	28-Nov-22* 02-Oct-22 20-Oct-22 26-Nov-22	02-Dec-22		02-Jan-23 19-Sep-22	43			
	nstruction of Preliminary Treatment Facilities	,	0	35.14%	070	12-Jul-21		2-Jul-21 A	04-Oct-24 07-Nov-22	15-Nov-24		04-Oct-24	42		<del></del>	
	f Preliminary Treatment Facilities			39.08%		12-Jul-21		2-Jul-21 A	07-Jun-24 07-Nov-22	16-Oct-24		04-Jun-24	131	<del>                                  </del>	<del></del>	
	brication and Delivery of Major E&M Equipment			49.17%		12-Jul-21		2-Jul-21 A	02-Nov-23 07-Nov-22	09-Jan-24		02-Nov-23	68		<del></del>	+
C.S3.3005a	Tendering of Subcontrator	45	0	100%	100%			2-Jul-21 A	25-Aug-21 A	00 04.11 2.1		25-Aug-21				
C.S3.3005b	Equipment Submission and Approval	330	0	82.12%	30%	03-Dec-21	-	3-Dec-21 A	28-Oct-22 07-Nov-22	04-Jan-23		28-Oct-22	68			
C.S3.3010a	Procurement	90	0	0%	0%			9-Oct-22	26-Jan-23 05-Jan-23	04-Apr-23		26-Jan-23	68			
C.S3.3010b	Fabrication	180	0	0%	0%			7-Jan-23	25-Jul-23 05-Apr-23	01-Oct-23		25-Jul-23	68			
C.S3.3010c	Delivery	100	0	0%	0%			26-Jul-23	02-Nov-23 02-Oct-23	09-Jan-24		02-Nov-23	68		<del></del>	+
vil & Structural	Works			0%				3-Dec-22	09-Jan-24 03-Dec-22	09-Jan-24		05-Jan-24	0		<del></del>	
C.S3.3020	Piling works for pre-bored socket H-piles (30 nos, dia.610 x 21m, 1 teams)	39	2	0%	0%			3-Dec-22	21-Jan-23 03-Dec-22	21-Jan-23		18-Jan-23	0			
C.S3.3040	Pile Loading Test of Compression Pile	12	2	0%	0%			5-Jan-23	09-Feb-23 25-Jan-23	09-Feb-23		06-Feb-23	0			
C.S3.3050	Installation of pipe pile wall of ELS (226 nos, dia610 x 16m, 2 teams)	45	9	0%	0%			5-Jan-23	28-Mar-23 25-Jan-23	28-Mar-23		24-Mar-23	0			
C.S3.3060	Grout Curtain Works	45	2	0%	0%		30	0-Jan-23	24-Mar-23 30-Jan-23	24-Mar-23		21-Mar-23	0			
C.S3.3070	Excavation for basement of Preliminary Treatment Facilities (13835m3 exca, 2 teams)	69	6	0%	0%			5-Mar-23	28-Jun-23 25-Mar-23	28-Jun-23		24-Jun-23	0	<del>   </del>		
C.S3.3080	Construction of RC structure (below ground, 5534m3)	84	6	0%	0%		29	9-Jun-23	14-Oct-23 29-Jun-23	14-Oct-23	26-Jun-23	11-Oct-23	0		<del></del>	
C.S3.3090	Removal of formworks, falseworks, application of waterproofing, backfilling and removal of ELS	9	1	0%	0%		16	16-Oct-23	27-Oct-23 16-Oct-23	27-Oct-23	12-Oct-23	24-Oct-23	0		<b>.</b>	
C.S3.3100	Construction of RC Structure (above ground, 1208m3)	56	4	0%	0%		28	28-Oct-23	09-Jan-24 28-Oct-23	09-Jan-24	25-Oct-23 (	05-Jan-24	0		<b>     </b>	
M Works				0%			10	0-Jan-24	07-Apr-24 10-Jan-24	07-Apr-24	06-Jan-24	04-Apr-24	0			
C.S3.3120	Installation (Mixers, Inlet Pumps and assoicated pipeworks and screens, Grit removal system, DO s	systems 46	2	0%	0%		10	0-Jan-24	08-Mar-24 10-Jan-24	08-Mar-24	06-Jan-24 (	05-Mar-24	0		<b>-</b>	
C.S3.3130a	SCADA System Site Acceptance Test (Phase 3 PTF Construction)	30	0	0%	0%		10	0-Jan-24	08-Feb-24 08-Feb-24	08-Mar-24	06-Jan-24 (	04-Feb-24	29			
C.S3.3130b	SCADA System Commissioning Test (Phase 3 PTF Construction)	30	0	0%	0%		09	19-Feb-24	09-Mar-24 09-Mar-24	07-Apr-24	05-Feb-24 (	05-Mar-24	29			
C.S3.3140b	System Commissioning Test (Interim Testing)	30	0	0%	0%		09	9-Mar-24	07-Apr-24 09-Mar-24	07-Apr-24	06-Mar-24 (		0		•	
ernal Ar chitec				0%				0-Jan-24	07-Jun-24 24-May-24	16-Oct-24		04-Jun-24	107			
C.S3.3110	Architectural Works (Internal)	112	8	0%	0%			0-Jan-24	07-Jun-24 24-May-24	16-Oct-24	06-Jan-24 (		107			
mporary Flo				0%				1-Nov-23	10-Apr-24 05-Dec-23	10-Apr-24		08-Apr-24	0			
C.S3.1550a	Installation of Temporary Sludge Thickening System	92	8	0%	0%			7-Nov-23	28-Mar-24 05-Dec-23	10-Apr-24		25-Mar-24	7			
C.S3.3150	Temporary WAS Pipe Construction from MBR to Sludge Digestor Building with temp pre-thickening	-	2	0%	0%			1-Nov-23	15-Dec-23 13-Jan-24	07-Feb-24		12-Dec-23	43			
C.S3.3160	Temporary sewerage pipe from existing manhole FMH7000149 to manhole FMH21 to isolate Inlet C		3	0%	0%			0-Jan-24	05-Mar-24 13-Jan-24	08-Mar-24		01-Mar-24	3			
C.S3.3170	Temporary Flow Diversion to isolate existing preliminary treatment system	2	1	0%	0%		30	08-Apr-24	10-Apr-24 08-Apr-24	10-Apr-24	05-Apr-24	08-Apr-24	0			
Pri	mary Baseline		T	C/2010/	י ודווס זה	VING ISLANDS	SEWEDAGE	STAGE	2 - HDGRADING OF	CHELING	HAII SEWA	GE TREAT	IENT AND	DISPOSAL FACILITIES	Date Revision	Chec Appr
	· ·		Ι'	JU120 13/1	or OUIL	I II4G IGLANDS							ILNI AND	30-J	un-22 Rev.15	JL AL
Ac	rual Work						RE\	VISED I	PROGRAMME - R	REV. 17 (31	August 2	2022)			ul-22 Rev.16	JL AL
			- 1						/Daga C	of 10)	-	-				
	maining Work		- 1						(Page 6							
Re	maining Work tical Remaining Work								(Page 6	01 10)				31-4	ug-22 Rev.17	JL AL

	Activity Name	Orl. Dur (d)	TRA (d) Ti	ime Elapsed %	Actual Workdone %	Actual Start	Actual Finish	Early Start	Early Finish Late Start	Late Finish	Early Start Early Finish (Rev.16) (Rev.16)	Amended Total Activities Float	DJFWAMJJASONDJFW	A JUNASONDUR	MA JUNEONDURIV	AMUNIARONDURINAMUNIARONDU
	WAS Storage Tank of Sludge Centrifuge House			0%				01-Aug-23	04-Oct-24 05-Sep-23	15-Nov-24	01-Aug-23 04-Oct-24	35				
Civil & Structural				0%				01-Aug-23	04-Oct-24 05-Sep-23	15-Nov-24	01-Aug-23 04-Oct-24	35			<b>-</b>	
DC.S3.3190	Piling works for pre-bored socket H-piles (14 nos, dia.610 x 14m, 1 teams)	26	4	0%	0%			01-Aug-23	04-Sep-23 05-Sep-23	11-Oct-23	01-Aug-23 04-Sep-23	30			-	
DC.S3.3200	Installation of sheet piles and Proof Drill	56	4	0%	0%			05-Sep-23	16-Nov-23 12-Oct-23	21-Dec-23	05-Sep-23 16-Nov-23	30				
OC.S3.3201	Pile Loading Test of Tension Pile	6	1	0%	0%			17-Nov-23	24-Nov-23 22-Dec-23	02-Jan-24	17-Nov-23 24-Nov-23	30			<u> </u>	
DC.S3.3210	Excavation and installation of ELS for WAS Storage Tank	84	6	0%	0%			25-Nov-23	15-Mar-24 03-Jan-24	24-Apr-24	25-Nov-23 15-Mar-24	30				
DC.S3.3220	Construction of RC Structure (below ground)	84	6	0%	0%			16-Mar-24	08-Jul-24 25-Apr-24	12-Aug-24	16-Mar-24 08-Jul-24	30				
DC.S3.3230	Removal of formworks, falseworks, application of waterproofing, backfilling and removal of ELS	12	2	0%	0%			09-Jul-24	24-Jul-24 19-Aug-24	03-Sep-24	09-Jul-24 24-Jul-24	35				
DC.S3.3240	Construction of RC Structure (above ground)	54	6	0%	0%			25-Jul-24	04-Oct-24 04-Sep-24	15-Nov-24	25-Jul-24 04-Oct-24	35				
Construction of	f Underground Utilities and EVA for FSD Inspection (TOP2)			0%				10-Jan-24	22-Mar-24 26-Apr-24	06-Jul-24	06-Jan-24 19-Mar-24	106				1
DC.S3.3250	Construction underground utilities for MBR Treatment Facilities and Perliminary Treatment Facilities	38	2	0%	0%			10-Jan-24	28-Feb-24 26-Apr-24	14-Jun-24	06-Jan-24 24-Feb-24	85				
DC.S3.3260	Road Reinstatement for FSD Inspection (TOP2)	6	1	0%	0%			29-Feb-24	07-Mar-24 15-Jun-24	22-Jun-24	26-Feb-24 04-Mar-24	85			1 1	
DC.S3.3270	FSD Inspection for CCSTW (TOP2)	14	0	0%	0%			09-Mar-24	22-Mar-24 23-Jun-24	06-Jul-24	06-Mar-24 19-Mar-24	106			D .	4
PHASE 4 - Den	nolition of existing Preliminary Treatment System			0%				11-Apr-24	05-Jan-25 11-Apr-24	02-Apr-25	09-Apr-24 03-Jan-25	87				
DC.S3.4010	Demoition of existing inlet pumping station, preliminary treatment facilities & primary sediment tank	40	3	0%	0%			11-Apr-24	01-Jun-24 11-Apr-24	01-Jun-24	09-Apr-24 30-May-24	0				<b>:-</b> :::::::::::::::::::::::::::::::::::
DC.S3.4020	Modification of Inlet Chamber	56	4	0%	0%			13-Apr-24	25-Jun-24 21-May-24	31-Jul-24	11-Apr-24 22-Jun-24	30				
DC.S3.4030	Demoition of existing Transformer House	39	3	0%	0%			11-Apr-24	31-May-24 29-Apr-24	19-Jun-24	09-Apr-24 29-May-24	15				
DC.S3.4031	Ground Investigation (7 nos, 1 rig, 1 team)	22	2	0%	0%			04-May-24	01-Jun-24 04-May-24	01-Jun-24	02-May-24 30-May-24	0				
DC.S3.4040	Disconnecting data link of removed existing equipment from the existing SCADA systm (Phase 4 Demolition		3	0%	0%	1		19-Jun-24	25-Jun-24 25-Jul-24	31-Jul-24	16-Jun-24 22-Jun-24	36	H			
	D-month performance verification (At least 9 months before End of S3)	<u> </u>		0%	7.0			11-Apr-24	05-Jan-25 07-Jul-24	02-Apr-25	09-Apr-24 03-Jan-25	87				<del></del>
DC.S3.3180		270	0	0%	0%			11-Apr-24	05-Jan-25 07-Jul-24	02-Apr-25	09-Apr-24 03-Jan-25	87				
	struction of Remaining Buildings	210		26.88%	J /6	12-Jul-21		12-Jul-21-A	02-Oct-25 06-Oct-22	02-Apr-25	12-Jul-21 07-Aug-25	92				++++++++++++++++++++++++++++++++++++
				31.66%		12-Jul-21		12-Jul-21 A	11-Feb-25 18-Oct-22	27-Mar-25	12-Jul-21 11-Feb-25	44				<del></del>
	Effluent Reuse Building					12-Jul-21			11-Feb-20 18-Oct-22	27-Mar-25 16-Oct-24		100				
		45	0	36.24%	4000/		05 A., 04	12-Jul-21 A	29-Aug-24 18-Oct-22	16-Oct-24	12-Jul-21 29-Aug-24	48				
DC.S3.5125a	Tendering of Subcontrator	45	0	100%	100%	12-Jul-21	25-Aug-21	12-Jul-21 A	25-Aug-21 A		12-Jul-21 25-Aug-21				<u></u>         '	
DC.S3.5125b	Equipment Submission and Approval	650	0	56.92%	30%	26-Aug-21	-	26-Aug-21 A	06-Jun-23 18-Oct-22	24-Jul-23	26-Aug-21 06-Jun-23	48		: : :	<u> </u>	
DC.S3.5130a	Procurement	90	0	0%	0%			07-Jun-23	04-Sep-23 25-Jul-23	22-Oct-23	07-Jun-23 04-Sep-23	48				
DC.S3.5130b	Fabrication	240	0	0%	0%			05-Sep-23	01-May-24 23-Oct-23	18-Jun-24	05-Sep-23 01-May-24	48				
DC.83.5130c	Delivery	120	0	0%	0%			02-May-24	29-Aug-24 19-Jun-24	16-Oct-24	02-May-24 29-Aug-24	48				
Civil & Structural				0%				03-Jun-24	27-Sep-24 19-Jul-24	13-Nov-24	31-May-24 25-Sep-24	38				
DC.S3.5140a	Installation of pipe pile wall of ELS (55 nos, dia323 x 8m, 1 team)	12	8	0%	0%			03-Jun-24	26-Jun-24 19-Jul-24	10-Aug-24	31-May-24 24-Jun-24	38				=
DC.S3.5140b	Proof Drill	7	5	0%	0%			27-Jun-24	11-Jul-24 12-Aug-24	24-Aug-24	25-Jun-24 09-Jul-24	38				
DC.S3.5150	Grout Curtain Works	11	1	0%	0%			27-Jun-24	11-Jul-24 12-Aug-24	24-Aug-24	25-Jun-24 09-Jul-24	38				, P
DC.S3.5160	Installation of ELS and Excavation for basement(970m3 exca, 1team)	11	1	0%	0%			12-Jul-24	25-Jul-24 26-Aug-24	07-Sep-24	10-Jul-24 23-Jul-24	38				
DC.S3.5170	Construction of RC structure (below ground, 437m3)	22	2	0%	0%			26-Jul-24	22-Aug-24 09-Sep-24	08-Oct-24	24-Jul-24 20-Aug-24	38				
DC.S3.5180	Removal of formworks, falseworks, application of waterproofing, backfilling and removal of ELS	5	1	0%	0%			23-Aug-24	29-Aug-24 09-Oct-24	16-Oct-24	21-Aug-24 27-Aug-24	38				
DC.S3.5190	Construction of RC Structure (above ground, 213m3)	22	2	0%	0%			30-Aug-24	27-Sep-24 17-Oct-24	13-Nov-24	28-Aug-24 25-Sep-24	38				4
E&M Works				0%				30-Aug-24	11-Feb-25 17-Oct-24	27-Mar-25	30-Aug-24 11-Feb-25	44				<del>     </del>
DC.S3.5210	E&M,LVSB and BS Installation (UV system, Chemical tanks and dosing system and etc.)	67	5	0%	0%			30-Aug-24	25-Nov-24 17-Oct-24	11-Jan-25	30-Aug-24 25-Nov-24	38				
DC.S3.5220a	SCADA System Site Acceptance Test (Phase 5 Effluent Reuse Construction)	60	0	0%	0%			15-Oct-24	13-Dec-24 28-Nov-24	26-Jan-25	15-Oct-24 13-Dec-24	44				
DC.S3.5220b	SCADA System Commissioning Test (Phase 5 Effluent Reuse Construction)	60	0	0%	0%			14-Dec-24	11-Feb-25 27-Jan-25	27-Mar-25	14-Dec-24 11-Feb-25	44				/     <del> </del>
DC.83.5230b	System Commissioning Test (Interim Testing)	60	0	0%	0%			14-Dec-24	11-Feb-25 27-Jan-25	27-Mar-25	14-Dec-24 11-Feb-25	44				⊨
Internal Architect		1.5	-	0%				28-Sep-24	16-Jan-25 06-Dec-24	27-Mar-25	26-Sep-24 14-Jan-25	57				<del>     </del>
DC S3 5200	Architectural Works (Internal)	84	6	0%	0%			28-Sep-24	16-Jan-25 06-Dec-24	27-Mar-25	26-Sep-24 14-Jan-25	57			+	
	Sludge Centrifuge Building & Genset and Fuel Tank Rooms			30.49%	3.4	12-Jul-21		12-Jul-21 A	02-Apr-25 07-Nov-22	02-Apr-25	12-Jul-21 28-Mar-25	0			+++-	<del></del>
	prication and Delivery of Major E&M Equipment			35.93%		12-Jul-21		12-Jul-21 A	08-Sep-24 07-Nov-22	15-Nov-24	12-Jul-21 08-Sep-24	68				<del></del>
DC.S3.5005a	Tendering of Subcontrator	45	0	100%	100%	12-Jul-21	25_Aug 24	12-Jul-21 A	25-Aug-21 A	10-1407-24	12-Jul-21 08-Sep-24	- 00				
DC.S3.5005a DC.S3.5005b	•	660	0	56.06%	30%		25-Aug-21	26-Aug-21 A	25-Aug-21 A 16-Jun-23 07-Nov-22	23-Aug-23		68			<u></u>       '	
DC.S3.50056 DC.S3.5010a	Equipment Submission and Approval  Procurement	45	0	0%	0%	26-Aug-21		20-Aug-21 A 17-Jun-23	31-Jul-23 07-Nov-22 31-Jul-23 24-Aug-23	23-Aug-23 07-Oct-23	26-Aug-21 16-Jun-23 17-Jun-23 31-Jul-23	68			<b>=</b>	<del> </del>
			-			-										
DC.S3.5010b	Fabrication	225	0	0%	0%			01-Aug-23	12-Mar-24 08-Oct-23	19-May-24	01-Aug-23 12-Mar-24	68				
DC.83.5010c	Delivery	180	0	0%	0%			13-Mar-24	08-Sep-24 20-May-24	15-Nov-24	13-Mar-24 08-Sep-24	68				
Civil & Structural		1		0%				03-Jun-24	15-Nov-24 03-Jun-24	15-Nov-24	31-May-24 13-Nov-24	0				
DC.S3.5020a	Piling works for pre-bored socket H-piles (24 nos, dia610 x 15m, 1team)	23	4	0%	0%			03-Jun-24	05-Jul-24 03-Jun-24	05-Jul-24	31-May-24 03-Jul-24	0				<u> </u>
DC.S3.5030	Installation of pipe pile wall of ELS (80 nos, dia323 x 6m, 1 teams)	18	6	0%	0%			24-Jun-24	22-Jul-24 24-Jun-24	22-Jul-24	21-Jun-24 19-Jul-24	0				T_
DC.S3.5040	Grout Curtain Works	16	2	0%	0%			23-Jul-24	12-Aug-24 23-Jul-24	12-Aug-24	20-Jul-24 09-Aug-24	0				
DC.S3.5050	Excavation for pumping tank (130m3 exca, 1team)	11	1	0%	0%			13-Aug-24	26-Aug-24 13-Aug-24	26-Aug-24	10-Aug-24 23-Aug-24	0				
DC.S3.5060	Construction of RC structure (below ground, 887 m3)	22	2	0%	0%			27-Aug-24	24-Sep-24 27-Aug-24	24-Sep-24	24-Aug-24 21-Sep-24	0				=
DC.S3.5070	Removal of formworks, falseworks, application of waterproofing, backfilling and removal of ELS	5	2	0%	0%			25-Sep-24	03-Oct-24 25-Sep-24	03-Oct-24	23-Sep-24 30-Sep-24	0				1   1
DC.S3.5080	Construction of RC Structure (above ground, 1310 m3)	34	2	0%	0%			04-Oct-24	15-Nov-24 04-Oct-24	15-Nov-24	02-Oct-24 13-Nov-24	0				-
E&M Works				0%				16-Nov-24	02-Apr-25 16-Nov-24	02-Apr-25	14-Nov-24 28-Mar-25	0				<del>     </del>
DC.S3.5100	E&M,LVSB and BS Installation (centrifuges and its auxillary equipment and Polymer preparation system)	56	5	0%	0%			16-Nov-24	01-Feb-25 16-Nov-24	01-Feb-25	14-Nov-24 27-Jan-25	0				📫
DC.S3.5110a	SCADA System Site Acceptance Test (Phase 5 Sludge Centrifuge Construction)	30	0	0%	0%			16-Nov-24	15-Dec-24 03-Jan-25	01-Feb-25	14-Nov-24 13-Dec-24	48				
DC.S3.5110b	SCADA System Commissioning Test (Phase 5 Studge Centrifuge Construction)	30	0	0%	0%			16-Dec-24	14-Jan-25 02-Feb-25	03-Mar-25	14-Dec-24 12-Jan-25	48				
DC.S3.5120b	System Commissioning Test (Interim Testing)	30	0	0%	0%	-		02-Feb-25	03-Mar-25 02-Feb-25	03-Mar-25	28-Jan-25 26-Feb-25	0	<del>      </del>			<del>             -</del>
DC.S3.51200 DC.S3.5120c	Final System Commissioning Test	30	0	0%	0%	-	-	04-Mar-25	02-Apr-25 04-Mar-25	02-Apr-25	27-Feb-25 28-Mar-25	0				
Internal Architect		30		0.00	U /0			16-Nov-24	07-Mar-25 12-Dec-24	02-Apr-25	14-Nov-24 05-Mar-25	22				
Ormett		84	6	0%	0%			16-Nov-24	07-Mar-25 12-Dec-24 07-Mar-25 12-Dec-24	02-Apr-25	14-Nov-24 05-Mar-25	22				
DC 92 5000	Profitedular voice (illertial)	04	0		U76							22				<u> </u>
DC.S3.5090	I CC Dimension and Dimension															
Construction o	FS Pumproom and Pumproom prication and Delivery of Major E&M Equipment			24.9% 29.56%		01-Nov-21 01-Nov-21		01-Nov-21 A 01-Nov-21 A	01-Mar-25 31-Oct-22 21-Aug-24 31-Oct-22	27-Mar-25 21-Oct-24	01-Nov-21 26-Feb-25 01-Nov-21 21-Aug-24	61				

Primary Baseline	DC/2019/07 OUTLYING	ISLANDS SEWERAGE STAGE2 - UPGRADING OF CHEUNG CHAU SEWAGE TREATMENT AND DISPOSAL FACILITIES
Actual Work		REVISED PROGRAMME - REV. 17 (31 August 2022)
Remaining Work		(Page 7 of 10)
Critical Remaining Work		
♦ Baseline Milestone		

Date	Revision	Chec	Approved
30-Jun-22	Rev.15	JL	AL
31-Jul-22	Rev.16	JL	AL
31-Aug-22	Rev.17	JL	AL
1			



	Activity Name	Ori. Dur (d)	(3)	Zapacu	Workdone %		Actual Finish	Early Start	Early Finish Late Start	Late Finish	Early Start Early Finish (Rev.16) (Rev.16)	Amended Total Activities Float	JFWAMJJASC	JEMA J	JASQNDJEV	A NASAMONE	FM4MJJASQNDJFM	MINAROND	FMAMJJASC
OC.S3.5540	Testing and commissioning	60	0	0%	0%			17-Dec-24	14-Feb-25 02-Feb-25	02-Apr-25	14-Dec-24 11-Feb-25	47							
	Emergency overflow chamber			0%				01-May-24	24-Feb-25 07-Jun-24	02-Apr-25	28-Apr-24 21-Feb-25	37							
.S3.5550a	Procurement of E&M Equipment	30	0	0%	0%			01-May-24	30-May-24 07-Jun-24	06-Jul-24	28-Apr-24 27-May-24	37					-		
.S3.5550b	Fabrication of E&M Equipment	180	0	0%	0%			31-May-24	26-Nov-24 07-Jul-24	02-Jan-25	28-May-24 23-Nov-24	37	ļļļļ.			ļļ <b>ļ</b> ļ			
C.S3.5550c C.S3.5550d	Delivery and Installation of E&M Equipment	30	0	0%	0%			27-Nov-24	26-Dec-24 03-Jan-25	01-Feb-25	24-Nov-24 23-Dec-24	37 37							
0.83.5550d <b>&amp;M Submiss</b> i	Testing and Commissioning	30	0	0% 25.54%	0%	14-Oct-21		26-Jan-25 14-Oct-21 A	24-Feb-25 04-Mar-25 23-Mar-25 06-Oct-22	02-Apr-25 02-Apr-25	23-Jan-25 21-Feb-25 14-Oct-21 23-Mar-25	10							
C.S3.5560	on and inspection for permanent water supply, power supply and fire services works  Preparation and approval of WWO 542 submission (FS system)	295	0	89.06%	0%	07-Jan-22		07-Jan-22 A	28-Sep-22 05-Nov-22	03-Dec-22	07-Jan-22 28-Sep-22	* 66							
C.83.5570		380	0	100%	100%	14-Oct-21	20-Jul-22	14-Oct-21 A	20-Jul-22 A	03-Dec-22	14-Oct-21 28-Sep-22	* 00							
C.S3.5570 C.S3.5580	Preparation and approval of WWO 542 submission (Plumbing system)  Preparation and approval of WWO 46 submission (FS system)	120	0	0%	0%	14*00121	20-301-22	29-Sep-22	26-Jan-23 04-Dec-22	02-Apr-23	29-Sep-22 26-Jan-23	66	<del>    </del>			<del> </del>  -			
C.S3.5590	Preparation and approval of WWO 46 submission (Plumbing system)	120	0	0%	0%			31-Aug-22	28-Dec-22 04-Dec-22	02-Apr-23	29-Sep-22 26-Jan-23	95							
C.S3.5600	WSD Inspection (FS system)	10	0	0%	0%			28-Jan-25*	06-Feb-25 08-Feb-25	17-Feb-25	28-Jan-25 06-Feb-25	11			/				
C.S3.5610	WSD Inspection (Plumbing system)	10	0	0%	0%			07-Feb-25	16-Feb-25 14-Mar-25	23-Mar-25	07-Feb-25 16-Feb-25	35							
C.S3.5630	Preparation and approval of GBP submission for CCSTW (with Phasing Plan)	325	0	81.85%	60%	08-Dec-21		08-Dec-21 A	28-Oct-22 06-Oct-22	03-Dec-22	08-Dec-21 28-Oct-22	* 36		1 1	i				
C.S3.5640	Preparation and approval of DG submission (Upon GBP submission)	120	0	0%	0%	00-060-21		29-Oct-22	25-Feb-23 04-Dec-22	02-Apr-23	29-Oct-22 25-Feb-23	36	<del>    </del>			<del> </del>			
C.S3.5650	Preparation and approval of FSI314 for VAC (Upon GBP submission)	120	0	0%	0%			29-Oct-22	25-Feb-23 04-Dec-22	02-Apr-23	29-Oct-22 25-Feb-23	36							
C.S3.5680	Submission of Form 314, 501 and 501a for CCSTW	30	0	0%	0%			08-Feb-25*	09-Mar-25 18-Feb-25	19-Mar-25	08-Feb-25 09-Mar-25	10							
OC S3 5692	FSD Inspection of CCSTW (Final Inspection)	14	0	0%	0%			10-Mar-25	23-Mar-25 20-Mar-25	02-Apr-25	10-Mar-25 23-Mar-25	10							
C.S3.5700	DG Inspection by FSD	10	0	0%	0%			07-Mar-25	16-Mar-25 24-Mar-25	02-Apr-25	05-Mar-25 14-Mar-25	17							
CADA System	Do impossor by 1 ob	10		22.39%	0.0	15-Dec-21		15-Dec-21 A	13-Feb-25 10-Nov-22	02-Apr-25	15-Dec-21 22-Mar-25	48	<del> </del>	-	-				
CADA System C.S3.5705	SCADA Equipment Submission and Approval	228	0	100%	100%	15-Dec-21	30-Jul-22	15-Dec-21 A	30-Jul-22 A	02.01.20	15-Dec-21 22-Wal-23	40		-					
C.S3.5710	Procurement	15	0	0%	0%	.0 500 21	00 00.22	31-Aug-22*	14-Sep-22 10-Nov-22	24-Nov-22	14-Jan-22 28-Jan-22	71			6				
C.S3.5720	Fabrication	126	0	0%	0%			15-Sep-22	18-Jan-23 25-Nov-22	30-Mar-23	29-Jan-22 28-Oct-22	* 71			<u> </u>				
C.S3.5730	Delivery	30	0	0%	0%			19-Jan-23	17-Feb-23 25-Jan-24	23-Feb-24	29-Oct-22 27-Nov-22	371		<b>   </b>					
C.S3.5770	Preparation and cable Installation works by communication company	245	0	35.92%	25%	04-Jun-22		04-Jun-22 A	03-Feb-23 23-Jan-23	28-Jun-23	04-Jun-22 30-Nov-22	* 145			-	<del> </del>			
C.S3.5775b1	SCADA equipment installation (Phase 1 Sludge Digestor Building Construction)	30	0	0%	0%			27-Feb-23	28-Mar-23 30-Apr-23	29-May-23	27-Feb-23 28-Mar-23	62			\				
C.S3.5775b2	SCADA equipment installation (Phase 3 PTF Construction)	30	0	0%	0%			02-Dec-23	31-Dec-23 08-Jan-24	06-Feb-24	29-Nov-23 28-Dec-23	37							
C.S3.5775b3	SCADA equipment installation (Phase 1 MBR Construction)	30	0	0%	0%			21-Oct-23	19-Nov-23 10-Dec-23	08-Jan-24	18-Oct-23 16-Nov-23	50							
C.S3.5775b4	SCADA equipment installation (Phase 5 Effluent Reuse Construction)	30	0	0%	0%			15-Sep-24	14-Oct-24 28-Dec-24	26-Jan-25	15-Sep-24 14-Oct-24	104							
C.S3.5775b5	SCADA equipment installation (Phase 5 Sludge Centrifuge Construction)	30	0	0%	0%			16-Nov-24	15-Dec-24 04-Dec-24	02-Jan-25	14-Nov-24 13-Dec-24	18	<del> </del>			<del>  </del>			
C.S3.5775b6	SCADA equipment installation (Phase 5 Sludge Dewatering System)	30	0	0%	0%			13-Oct-24	11-Nov-24 04-Dec-24	02-Jan-25	27-Sep-24 26-Oct-24	52					<u> </u>		
C.S3.5775b7	SCADA equipment installation (Section 2 at PSSPS)	30	0	0%	0%			18-Feb-23	19-Mar-23 16-Feb-25	17-Mar-25	05-Feb-25 06-Mar-25	729							
C.S3.5775c1	SCADA System Site Acceptance Test (Phase 1 Sludge Digestor Building Construction)	30	0	0%	0%			29-Mar-23	27-Apr-23 30-May-23	28-Jun-23	29-Mar-23 27-Apr-23	62							
C.83.5775c2	Disconnecting data link of removed existing equipment from the existing SCADA systm (Phase 2 Site Clean	7	0	0%	0%			19-Jan-23	25-Jan-23 01-Feb-24	07-Feb-24	29-Oct-22 04-Nov-22	378							
C.S3.5775c3	SCADA System Site Acceptance Test (Phase 3 PTF Construction)	30	0	0%	0%			10-Jan-24	08-Feb-24 08-Feb-24	08-Mar-24	06-Jan-24 04-Feb-24	29	<del>    -</del>		<b>\</b>				
C.S3.5775c4	SCADA System Site Acceptance Test (Phase 1 MBR Construction)	30	0	0%	0%			20-Nov-23	19-Dec-23 09-Jan-24	07-Feb-24	17-Nov-23 16-Dec-23	50							
C.S3.5775c5	Disconnecting data link of removed existing equipment from the existing SCADA systm (Phase 4 Demolitor	7	0	0%	0%			19-Jun-24	25-Jun-24 25-Jul-24	31-Jul-24	16-Jun-24 22-Jun-24	36							
C.S3.5775c6	SCADA System Site Acceptance Test (Phase 5 Effluent Reuse Construction)	30	0	0%	0%			15-Oct-24	13-Nov-24 27-Jan-25	25-Feb-25	15-Oct-24 13-Nov-24	104							
DC.S3.5775c7	SCADA System Site Acceptance Test (Phase 5 Sludge Centrifuge Construction)	30	0	0%	0%			16-Dec-24	14-Jan-25 03-Jan-25	01-Feb-25	14-Dec-24 12-Jan-25	18							
OC.83.5775c8	SCADA System Site Acceptance Test (Phase 5 Sludge Dewatering System)	30	0	0%	0%			12-Nov-24	11-Dec-24 03-Jan-25	01-Feb-25	27-Oct-24 25-Nov-24	52	1		- <u>L</u> :	<del>  </del>			
DC.S3.5775c9	SCADA System Site Acceptance Test (Section 2 at PSSPS)	30	0	0%	0%			06-Mar-23	04-Apr-23 04-Mar-25	02-Apr-25	21-Feb-25 22-Mar-25	729					<del></del>		
DC.S3.5775d1	SCADA System Commissioning Test (Phase 1 Sludge Digestor Building Construction)	30	0	0%	0%			28-Apr-23	27-May-23 29-Jun-23	28-Jul-23	28-Apr-23 27-May-23	62				-			
DC.S3.5775d2	SCADA System Commissioning Test (Phase 3 PTF Construction)	30	0	0%	0%			09-Feb-24	09-Mar-24 09-Mar-24	07-Apr-24	05-Feb-24 05-Mar-24	29				1			
DC.S3.5775d3	SCADA System Commissioning Test (Phase 1 MBR Construction)	30	0	0%	0%			20-Dec-23	18-Jan-24 08-Feb-24	08-Mar-24	17-Dec-23 15-Jan-24	50							
OC.83.5775d4	SCADA System Commissioning Test (Phase 5 Effluent Reuse Construction)	30	0	0%	0%			14-Dec-24	12-Jan-25 26-Feb-25	27-Mar-25	14-Dec-24 12-Jan-25	74	1						
DC.S3.5775d5	SCADA System Commissioning Test (Phase 5 Sludge Centrifuge Construction)	30	0	0%	0%			15-Jan-25	13-Feb-25 02-Feb-25	03-Mar-25	13-Jan-25 11-Feb-25	18							
OC.S3.5775d6	SCADA System Commissioning Test (Phase 5 Sludge Dewatering System)	30	0	0%	0%			12-Dec-24	10-Jan-25 02-Feb-25	03-Mar-25	26-Nov-24 25-Dec-24	52							
DC.S3.5775d7	SCADA System Commissioning Test (Section 2 at PSSPS)	30	0	0%	0%			06-Mar-23	04-Apr-23 04-Mar-25	02-Apr-25	21-Feb-25 22-Mar-25	729			_		<del></del>		
C.S3.5780	SCADA equipment installation at SHWSTW	30	0	0%	0%			13-Oct-24	11-Nov-24 04-Dec-24	02-Jan-25	27-Sep-24 26-Oct-24	52			-				
LV System (C	CTV, ACS, Intercom, Radio)			0%				25-May-24	20-Dec-24 06-Aug-24	03-Mar-25	25-May-24 20-Dec-24	73	1		<b>*</b>				
C.S3.5735	Equipment Submission and Approval	30	0	0%	0%			25-May-24*	23-Jun-24 06-Aug-24	04-Sep-24	25-May-24 23-Jun-24	73							
C.S3.5740	Procurement	90	0	0%	0%			24-Jun-24	21-Sep-24 05-Sep-24	03-Dec-24	24-Jun-24 21-Sep-24	73							
C.S3.5750	Fabrication	15	0	0%	0%			22-Sep-24	06-Oct-24 04-Dec-24	18-Dec-24	22-Sep-24 06-Oct-24	73					1 1 1 1		
C.S3.5760	Delivery	15	0	0%	0%			07-Oct-24	21-Oct-24 19-Dec-24	02-Jan-25	07-Oct-24 21-Oct-24	73							
C.S3.5790	E&M Installation Works	60	0	0%	0%			22-Oct-24	20-Dec-24 03-Jan-25	03-Mar-25	22-Oct-24 20-Dec-24	73							
& M Manual	& Training			0%				01-Aug-24	12-Dec-24 24-Nov-24	06-Apr-25	01-Aug-24 12-Dec-24	115							
C.S3.5765a	Submission of draft O&M Manual	60	0	0%	0%			01-Aug-24*	29-Sep-24 24-Nov-24	22-Jan-25	01-Aug-24 29-Sep-24	115							
C.S3.5765b	Training to Client's Staffs	14	0	0%	0%			30-Sep-24	13-Oct-24 23-Jan-25	05-Feb-25	30-Sep-24 13-Oct-24	115					1 1 1 1		
C.S3.5765c	Submission of interim O&M Manual	60	0	0%	0%			14-Oct-24	12-Dec-24* 06-Feb-25	06-Apr-25	14-Oct-24 12-Dec-24	115							
HER WOR	S DUE TO CEs			80.36%		18-Jan-22		18-Jan-22 A	24-Oct-22 07-Sep-22	31-Oct-22	18-Jan-22 14-Oct-22	7		•					
.S3.6010	CE-015, Abandonement Works for Existing 900mm Diameter Pipe Connection to Manhole SHM7003180 ar	6	1	100%	100%	13-May-22	20-May-22	13-May-22 A	20-May-22 A		13-May-22 20-May-22	•							
S3.6020	CE-024, Pilot Trial Leak Detection for Existing Manholes in Cheung Chau	145	4	90.6%	93%	17-Mar-22		17-Mar-22 A	16-Sep-22* 15-Oct-22	31-Oct-22	17-Mar-22 16-Sep-22	* 36		<u> </u>	<b>-</b>				
S3.6030	CE-033, Repair Works of Existing Sludge Ramp	220	6	80.53%	80%	18-Jan-22			24-Oct-22* 07-Sep-22	31-Oct-22	18-Jan-22 28-Sep-22	* 6			<del>(</del>				
.S3.6040	CE-044, Point Cloud Survey at Cheung Chau	72	3	100%	100%	15-Mar-22	17-Jun-22		17-Jun-22 A		15-Mar-22 17-Jun-22			-	<b>\</b>				
:83.6050	CE-050, Underground Utilities Survey and Water Intrusion Identification in Cheung Chau	132	2	95.74%	38%	16-May-22		16-May-22 A	03-Sep-22* 27-Oct-22	31-Oct-22	16-May-22 03-Sep-22	* 46	1-1-1-1		-	!			
S3.6060	CE-065, Additional Drillholes for Preliminary Treatment Facilities in CCSTW (Total 15 nos.)	77	0	100%	100%	31-Jul-22	30-Aug-22		30-Aug-22 A		31-Jul-22 14-Oct-22				<b>+</b>				
	OF SECTION 3			0%				02-Apr-25	02-Apr-25 02-Apr-25	02-Apr-25	28-Mar-25 28-Mar-25	0							
C.S3.6000	Completion of Section 3 (Working Days)	0	0		0%			7	02-Apr-25	02-Apr-25	28-Mar-25	0							
CTION 4				0%				06-Jan-25	02-Oct-25 07-Apr-25		04-Jan-25 30-Sep-25	92						<del></del>	
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	many Baselina			DC/2040	07 01171	VINC IOL AND	De enven	ACE 07405	2 LIDODADINO O	CUEUNO A	CHAIL CENTAGE TO	ATMENT AND	DICDOCAL	EACH ITIE		Date	Revision	Chec	Appro
	mary Baseline			DC/2019/	U/ OUIL	TING ISLAN	DS SEWER				CHAU SEWAGE TRE	AIMENIAND	DISPUSAL	FACILITIE	:o  -	30-Jun-22	Rev.15	JL	AL
Ac	tual Work							REVISED	PROGRAMME -	REV. 17 (3)	1 August 2022)				-		<del></del>		
Pe	maining Work		- 1						(Page 9						I-	31-Jul-22	Rev.16	JL	AL
									(i age s	01 10)					:	31-Aug-22	Rev.17	JL	AL

Critical Remaining Work

Baseline Milestone

tivity ID	Activity Name	Orl. Dur (d)	TRA (d) T	ime Elapsed %	Actual	Actual Start	Actual Finish	Early Start	Early Finish	Late Start	Late Finish	Early Start	Early Finish	Amended	Total	2	021	2	022		2023		2024		2025		2026	102
					Workdone %							(Rev.16)	(Rev.16)	Activities	Float	DJFW4M	JJASOV	DJFM4.	JASON	DJFWA	JJAS	ONDJEV	V M J J	ASOND.	FMAMJJ	ASONDJ	MAMINA	MDI
DC.S4.1010	The remaining architectural and landscaping works at roof floor and external face	97	7	0%	0%			08-Mar-25	14-Jul-25	28-Aug-25	02-Jan-26	06-Mar-25	11-Jul-25		142													$\top$
DC.S4.1020	The site-wide landscaping works	97	7	0%	0%			03-Apr-25	08-Aug-25	28-Aug-25	02-Jan-26	29-Mar-25	04-Aug-25		120										-			
DC.S4.1030	Constuction of permanent boundary fences	97	7	0%	0%			03-Apr-25	08-Aug-25	28-Aug-25	02-Jan-26	29-Mar-25	04-Aug-25		120										-			
30-month Per	formance Verification (At least 18 months End of S4)			0%				06-Jan-25	02-Oct-25	07-Apr-25	01-Jan-26	04-Jan-25	30-Sep-25		91									1	o	→		
DC.S4.1040	30-month performance verification (At least 18 months before End of S4)	270	0	0%	0%			06-Jan-25	02-Oct-25	07-Apr-25	01-Jan-26	04-Jan-25	30-Sep-25		91									1 1	=	<b>≓</b>		
Completion o	f Section 4 (Working Day)			0%				02-Oct-25	02-Oct-25	02-Jan-26	02-Jan-26	30-Sep-25	30-Sep-25		92											Ÿ		
DC.S4.1050	Completion of Section 4	0	0	0%	0%				02-Oct-25*		02-Jan-26		30-Sep-25		92											*		
30-month perf	ormance verification (remaining 12 months after S4)			0%				03-Oct-25	01-Jan-27	02-Jan-26	01-Jan-27	01-Oct-25	30-Sep-26		0											<del></del>		$\neg$
DC.PV.1010	30-month performance vertification (remaining 12 months after S4)	365	0	0%	0%			03-Oct-25	02-Oct-26	02-Jan-26	01-Jan-27	01-Oct-25	30-Sep-26		91											<b>—</b>	$\overline{}$	
DC.PV.1020	Date of 12 months after S4			0%	0%				01-Jan-27*		01-Jan-27				0													+
DC.S3.5765d10	Submission of final O&M Manual	60	0	0%	0%			13-Dec-25	10-Feb-26	02-Nov-26	31-Dec-26	13-Dec-25	10-Feb-26		324		TT	T	1 1							-	TIT	

	Primary Baseline
	Actual Work
	Remaining Work
	Critical Remaining Work
<b>♦</b>	Baseline Milestone

DC/2019/07 OUTLYING ISLANDS SEWERAGE STAGE2 - UPGRADING OF CHEUNG CHAU SEWAGE TREATMENT AND DISPOSAL FACILITIES REVISED PROGRAMME - REV. 17 (31 August 2022) (Page 10 of 10)

Date	Revision	Chec	Approved
30-Jun-22	Rev.15	JL	AL
31-Jul-22	Rev.16	JL	AL
31-Aug-22	Rev.17	JL	AL

# APPENDIX C Calibration Certificates (Air Monitoring)







Unit C, 11/F, Ford Glory Plaza Nos. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon.

Tel.: (852) 2698 6835 Fax.: (852) 2698 9583

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

Verification Test Date: 12-Sep-21 to 19-Sep-21

Next Verification Test Date: 20-Sep-22
Unit-under-Test- Model No. Sibata LD-5R
Unit-under-Test Serial No. 851816
Our Report Refrence No. RPT-21-HVS-0014

Standard Equipment Information	Standard Equipment Information										
Verification Equipment Type		Tisch's TSP	Tish HVS								
Vernication Equipment Type		HVS	Calibrator								
Standard Equipment Model No.		TE-5170X	TE-5028								
Equipment serial no.	MFC	1049	1050								
Last Calibration Date		4-Sep-21	24-Sep-20								
Next Calibration Date		4-Nov-21	24-Sep-21								

Verification	Date		Time		K-Factor	Counts/ Minute (R)	Total Counts	TSP Sample	Dust Concentration (ug/m3), (C)
Test No.		Start-time	End-time	Elapsed Time (in min)	K-Factor (K=C/R)	x-axis	(TC)	ID No.	y axis
1	12/9/2021	4012.12	4014.84	163.20	0.00243	40.33	6582.4	R211363/1	98
2	12/9/2021	4014.84	4018.16	199.20	0.00278	41.67	8300	R211363/2	116
3	12/9/2021	4018.16	4021.16	180.00	0.00226	39.67	7140	R211363/3	89
4	19/9/2021	4046.44	4049.65	192.60	0.00077	33.33	6420	R211364/1	26
5	19/9/2021	4049.65	4052.95	198.00	0.00079	34.00	6732	R211364/2	27
6	19/9/2021	4052.95	4055.56	156.60	0.00101	38.67	6055.2	R211364/3	39
					0.00167				

K-Factor to be inputted in LD-5R (corrected 1 decimal point):

1.7

By Linear Regression of y on x:

slope, mh= 10.4180 intercept,ch= -329.4714 \*Correlation Coefficient,R= 0.9029

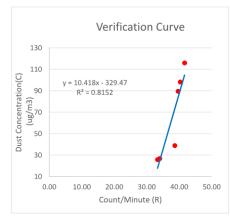
Verification Test Result: <u>Strong Correlation, Results were accepted.</u>

\* If the Correlation Coefficient, R is <0.5. Checking and Reverification are required.

Verified By:

Technical Manager

Date: 09-10-2021











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

Verification Test Date: 12-Sep-21 to 19-Sep-21

 Next Verification Test Date:
 20-Sep-22

 Unit-under-Test- Model No.
 Sibata LD-5R

 Unit-under-Test Serial No.
 992821

 Our Report Refrence No.
 RPT-21-HVS-0012

Standard Equipment Information	Standard Equipment Information											
Verification Equipment Type		Tisch's TSP	Tish HVS									
Vernication Equipment Type		HVS	Calibrator									
Standard Equipment Model No.		TE-5170X	TE-5028									
Equipment serial no.	MFC	1049	1050									
Last Calibration Date		4-Sep-21	24-Sep-20									
Next Calibration Date		4-Nov-21	24-Sep-21									

Verification Test No.	Date		Time		K-Factor	Counts/ Minute (R)	Total Counts	TSP Sample	Dust Concentration (ug/m3), (C)
		Start-time	End-time	Elapsed Time (in min)	K-Factor (K=C/R)	x-axis	(TC)	ID No.	y axis
1	12/9/2021	4012.12	4014.84	163.20	0.00115	85.67	13981	R211363/1	98
2	12/9/2021	4014.84	4018.16	199.20	0.00125	93.00	18526	R211363/2	116
3	12/9/2021	4018.16	4021.16	180.00	0.00101	89.00	16020	R211363/3	89
4	19/9/2021	4046.44	4049.65	192.60	0.00040	63.67	12262	R211364/1	26
5	19/9/2021	4049.65	4052.95	198.00	0.00041	65.33	12936	R211364/2	27
6	19/9/2021	4052.95	4055.56	156.60	0.00066	59.33	9291.6	R211364/3	39
					0.00001				

K-Factor to be inputted in LD-5R (corrected 1 decimal point):

0.8

By Linear Regression of y on x:

slope, mh= 2.5858 intercept,ch= -130.6851 \*Correlation Coefficient,R= 0.9584

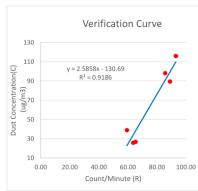
Verification Test Result: Strong Correlation, Results were accepted.

 $\mbox{\ensuremath{^{\ast}}}$  If the Correlation Coefficient, R is <0.5. Checking and Reverification are required.

Verified By:

Technical Manager

Date: 09-10-2021









Tel.: (852) 2698 6833 Fax: (852) 2698 9383

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

Verification Test Date: 10-Jul-22 to 17-Jul-22

Next Verification Test Date:18-Jul-23Unit-under-Test- Model No.Aerocet 831Unit-under-Test Serial No.A14256

Our Report Refrence No. RPT-22-HVS-0010

Standard Equipment Information	Standard Equipment Information											
Verification Equipment Type		Tisch's TSP HVS	Tish HVS Calibrator									
Standard Equipment Model No.		TE-5170X	TE-5025A									
Equipment serial no.	MFC	1049	3465									
Last Calibration Date		2-Jun-22	28-Jun-22									
Next Calibration Date		1-Sep-22	29-Jun-23									

Verification	Date		Time		K-Factor	Counts/ Minute (R)	Total Counts	TSP Sample	Dust Concentration (ug/m3), (C)
Test No.		Start-time	End-time	Elapsed Time (in min)	K-Factor (K=C/R)	x-axis	(TC)	ID No.	y axis
1	10/7/2022	5653.00	5656.00	180.00	0.00010	56	10080	R221113/1	6
2	10/7/2022	5656.00	5659.00	180.00	0.00026	57	9900	R221113/2	15
3	10/7/2022	5659.00	5663.00	240.00	0.00008	55	13760	R221113/3	5
4	17/7/2022	5715.00	5719.00	240.00	0.00044	72	17200	R221114/1	32
5	17/7/2022	5719.00	5722.00	180.00	0.00043	66	12960	R221114/2	31
6	17/7/2022	5722.00	5725.00	180.00	0.00052	72	11820	R221114/3	34
					0.00031				

K-Factor to be inputted in LD-5R (corrected 1 decimal point):

0.3

By Linear Regression of y on x:

slope, mh= 1.6515 intercept,ch= -83.7538 \*Correlation Coefficient,R= 0.9592

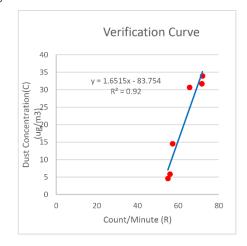
Verification Test Result: Strong Correlation, Results were accepted.

\* If the Correlation Coefficient, R is <0.5. Checking and Reverification are required.

Verified By:

Field Supervisor

Date: 16-08-2022









Tel.: (852) 2698 6833 Fax: (852) 2698 9383

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

Verification Test Date: 10-Jul-22 to 17-Jul-22

Next Verification Test Date:18-Jul-23Unit-under-Test- Model No.Aerocet 831Unit-under-Test Serial No.A14258

Our Report Refrence No. RPT-22-HVS-0009

Standard Equipment Information	Standard Equipment Information											
Verification Equipment Type		Tisch' s	Tish HVS									
verification Equipment Type		TSP HVS	Calibrator									
Standard Equipment Model No.		TE-5170X	TE-5025A									
Equipment serial no.	MFC	1049	3465									
Last Calibration Date		2-Jun-22	28-Jun-22									
Next Calibration Date		1-Sep-22	29-Jun-23									

Verification Test No.	Date		Time		K-Factor	Counts/ Minute (R)	Total Counts	TSP Sample	Dust Concentration (ug/m3), (C)
		Start-time	End-time	Elapsed Time (in min)	K-Factor (K=C/R)	x-axis	(TC)	ID No.	y axis
1	10/7/2022	5653.00	5656.00	180.00	0.00011	51	9180	R221113/1	6
2	10/7/2022	5656.00	5659.00	180.00	0.00029	60	9060	R221113/2	15
3	10/7/2022	5659.00	5663.00	240.00	0.00008	50	14480	R221113/3	5
4	17/7/2022	5715.00	5719.00	240.00	0.00049	72	15600	R221114/1	32
5	17/7/2022	5719.00	5722.00	180.00	0.00041	65	13560	R221114/2	31
6	17/7/2022	5722.00	5725.00	180.00	0.00047	75	12960	R221114/3	34
					0.00031				

K-Factor to be inputted in LD-5R (corrected 1 decimal point):

0.3

By Linear Regression of y on x:

slope, mh= 1.2447 intercept,ch= -57.3918 \*Correlation Coefficient,R= 0.9621

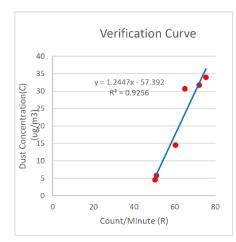
Verification Test Result: Strong Correlation, Results were accepted.

\* If the Correlation Coefficient, R is <0.5. Checking and Reverification are required.

Verified By:

Field Supervisor

Date: 16-08-2022





证书编号: CERTIFICATE №: NO.HD1e-2021-10-10116711

第1页共3页 PAGE 1 OF 3 PAGES

# 校准证书

#### CALIBRATION CERTIFICATE

委托方 CLIENT

名称:

Acuity Sustainability Consulting Limited

NAME:

地 址: ADDRESS: No. 37-39 Wing Hong Street, Unit E, 12/F, Ford Glory Plaza, Kowloon, HK

#### 计量器具 MEASURING INSTRUMENTS

名称: TSP 全尘浓度检测仪

型号: PC-3A (E)

NAME:

青岛精诚仪器仪表有限公司

TYPE: 编号: JC-2110284

发证机构(专用章)

制造者: MANUFACTURER:

No:

校准人:

核验人:

10

10

月

MONTH

月

MONTH

月

MONTH

OPERATOR:

接收日期:

校准日期:

CAL. DATE:

RECEIVED DATE:

建议下次校准日期:

NEXT TIME TO CALIBRAT:

INSPECTOR:

2021

2021

2022

APPROVED SIGNATORY



DAY

本结果仅对所校准样品有效,证书未经本实验室批准,不得部分复印。

These results apply only to the calibrated sample, this certificate can't be partly copied without authorization

年

YEAR

年

YEAR

YEAR

年

地址: 中国北京市丰台区东高地南大红门路1号

通讯: 北京 9200 信箱 24 分箱 邮政编码: 100076 电话: 86-10-68383637, 86-10-68383657

传真: 86-10-88522409 网址: http://www.102.com.cn Address: No. 1 South Dahongmen Road, Beijing, China. P.O.Box: 9200-24, Beijing , China. Zip:100076

Tel.:86-10-68383637, 86-10-68383657

Fax:86-10-88522409

E-mail:jiliang102@163.com



### ▲ 北京航天计量测试技术研究所

中国航天 Beijing Aerospace Institute for Metrology and Measurement Technology

证书编号: CERTIFICATE No: NO.HD1e-2021-10-10116711

140.11010-2021-10-101

第2页共3页 PAGE 2 OF 3 PAGES

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This body is an institute of legal verification (including authorized body)

授权单位: 国家国防科技工业局

Authorized by: State Administration of Science Technology and Industry for National Defence

授权证书号: 国防军工-JLJG-1-003

Authorization certificate № 国防军工-JLJG-1-003

本实验室的质量管理体系符合 ISO/IEC17025 标准的要求,并经中国合格评定国家认可委员会认可,认可证书号: CNAS L0283

This body is a CNAS accredited laboratory with a qualified quality management system in compliance with the ISO/IEC17025 standard, Accreditation certificate № CNAS L0283

本实验室通过国家认证认可监督管理委员会的资质认定,认定证书编号: 170020180155

This body is accredited by Certification and Accreditation administration of the People's Republic of China

Accreditation Certificate №170020180155 测量溯源性的说明: 国家计量基准

A statement of Measurement traceability: National Metrology Standards

校准所使用的计量标准及主要测量设备

STANDARD AND EQUIPMENT USED IN THE CALIBRATION

名称/编号 NAME/NO.	测量范围 MEASURING RANGE	扩展不确定度 /准确度等级 /最大允许误差 EXPANDED UNCERTAINTY /ACCURACY CLASS /MAX.PERMISSIBLE ERROR	证书编号 CERTIFICATE NO.	证书有效期至 DUE DATE
低浓度粉尘发生装置	(0-10) mg/m <sup>3</sup>	±5%	CDxl2021-20087	2022-06-07
高浓度粉尘发生装置	(0-1000) mg/m <sup>3</sup>	±5%	CDx12021-20088	2022-06-07

#### 校准所依据的技术文件(编号、名称)

BASIS OF CALIBRATION (CODE、NAME) JJG 846-2015 粉尘浓度测量仪检定规程

校准的环境条件、地点,限制使用条件和测量范围

ENVIROMENTAL CONDITION IN THE CALIBRATION, LOCATION, LIMITED USING CONDITION AND MEASURING RANGE

温度 Temperature:

19.8

湿度 Moisture:

46 %RH

地点 Location: 北京市丰台区南大红门路一号

限制使用条件和测量范围 Limited using condition and measuring range:

#### 北京航天计量测试技术研究所 Beijing Aerospace Institute for Metrology and Measurement Technology 证书编号: NO.HD1e-2021-10-10116711 第3页共3页 CERTIFICATE №: PAGE 3 OF 3 PAGES 校准结果 RESULTS OF CALIBRATION 一、外观及各部分相互作用:符合要求 二、示值误差: 相对误差 相对扩展不确定度 Urel; 校准点 技术要求 1% (k=2) $/ mg/m^3$ (%) 10 12.8 7.8 30 $\pm 20$ 7.8 11.0 50 13.2 7.8 示值重复性 ≤10 4.5 说明: 所校项目符合规程技术要求。 以下空白 **Blank Below**



Beijing Aerospace Institute for Metrology and Measurement Technology

证书编号: CERTIFICATE №: NO.HD1e-2021-10-10116716

第1页共3页 PAGE 1 OF 3 PAGES

## 校准证书

#### CALIBRATION CERTIFICATE

委托方 CLIENT

名称:

Acuity Sustainability Consulting Limited

NAME:

地 址:

No. 37-39 Wing Hong Street, Unit E, 12/F, Ford Glory Plaza, Kowloon, HK

ADDRESS:

#### 计量器具 MEASURING INSTRUMENTS

名称: TSP 全尘浓度检测仪

PC-3A (E)

NAME: 制造者:

青岛精诚仪器仪表有限公司

TYPE: 编号: No:

JC-2110289

发证机构(专用章) ISSUED BY(STAMP)

MANUFACTURER:

校准人:





签发人:

OPERATOR:

接收日期:

INSPECTOR:

2021

APPROVED SIGNATORY

H 27 DAY

RECEIVED DATE: 校准日期: 2021 CAL. DATE: 建议下次校准日期: 2022 NEXT TIME TO CALIBRAT:

YEAR 年 YEAR 年 YEAR

年

MONTH 10 F MONTH 月

MONTH

H

27 DAY 日 26

DAY

本结果仅对所校准样品有效,证书未经本实验室批准,不得部分复印。

These results apply only to the calibrated sample, this certificate can't be partly copied without authorization.

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通讯: 北京 9200 信箱 24 分箱 邮政编码: 100076

电话: 86-10-68383637, 86-10-68383657

传真: 86-10-88522409 网址: http://www.102.com.cn Address: No. 1 South Dahongmen Road , Beijing , China.

P.O.Box: 9200-24, Beijing , China. Zip: 100076

Tel.:86-10-68383637, 86-10-68383657 Fax:86-10-88522409

E-mail:jiliang102@163.com



# 北京航天计量测试技术研究所 Beijing Aerospace Institute for Metrology and Measurement Technology

证书编号: CERTIFICATE №: NO.HD1e-2021-10-10116716

第2页共3页 PAGE 2 OF 3 PAGES

本实验室是法定计量检定机构(包括被授权的计量检定机构)

This body is an institute of legal verification (including authorized body)

授权单位: 国家国防科技工业局

Authorized by: State Administration of Science Technology and Industry for National Defence 授权证书号: 国防军工-JLJG-1-003

Authorization certificate № 国防军工-JLJG-1-003

本实验室的质量管理体系符合 ISO/IEC17025 标准的要求,并经中国合格评定国家认可委员会认可,认可证 书号: CNAS L0283

This body is a CNAS accredited laboratory with a qualified quality management system in compliance with the ISO/IEC17025 standard, Accreditation certificate № CNAS L0283

本实验室通过国家认证认可监督管理委员会的资质认定,认定证书编号:170020180155

This body is accredited by Certification and Accreditation administration of the People's Republic of China Accreditation Certificate №170020180155

测量溯源性的说明: 国家计量基准

A statement of Measurement traceability: National Metrology Standards

校准所使用的计量标准及主要测量设备 STANDARD AND EQUIPMENT USED IN THE CALIBRATION

名称/编号 NAME/NO.	测量范围 MEASURING RANGE	扩展不确定度 /推确度等级 /最大允许误差 EXPANDED UNCERTAINTY /ACCURACY CLASS /MAX.PERMISSIBLE ERROR	证书编号 CERTIFICATE NO.	证书有效期至 DUE DATE
低浓度粉尘发生装置	(0-10) mg/m <sup>3</sup>	±5%	CDxl2021-20087	2022-06-07
高浓度粉尘发生装置	(0-1000) mg/m <sup>3</sup>	±5%	CDxl2021-20088	2022-06-07

#### 校准所依据的技术文件(编号、名称)

BASIS OF CALIBRATION (CODE, NAME) JJG 846-2015 粉尘浓度测量仪检定规程

校准的环境条件、地点,限制使用条件和测量范围

ENVIROMENTAL CONDITION IN THE CALIBRATION, LOCATION, LIMITED USING CONDITION AND MEASURING RANGE 19.8

温度 Temperature:

湿度 Moisture:

46 %RH

地点 Location: 北京市丰台区南大红门路一号

限制使用条件和测量范围 Limited using condition and measuring range:

#### 北京航天计量测试技术研究所 Beijing Aerospace Institute for Metrology and Measurement Technology 证书编号: NO.HD1e-2021-10-10116716 第3页共3页 CERTIFICATE M₂: PAGE 3 OF 3 PAGES 校准结果 RESULTS OF CALIBRATION 一、外观及各部分相互作用:符合要求 二、示值误差: 相对误差 相对扩展不确定度 Urel; 校准点 技术要求 1% (k=2) $/ mg/m^3$ 1% (%) 10 12.2 7.8 30 $\pm 20$ 14.4 7.8 50 15.1 7.8 示值重复性 ≤10 1 5.5 说明: 所校项目符合规程技术要求。 以下空白 Blank Below



TE-5025A

RECALIBRATION
DUE DATE:

June 28, 2023

# Certificate of Calibration

Calibration Certification Information

Cal. Date: June 28, 2022 Rootsmeter S/N: 438320

Ta: 296 Pa: 755.1 °K

Operator: Jim Tisch
Calibration Model #:

Calibrator S/N: 3465

.1 mm Hg

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4290	3.2	2.00
2	3	4	1	1.0130	6.4	4.00
3	5	6	1	0.9050	7.9	5.00
4	7	8	1	0.8590	8.8	5.50
5	9	10	1	0.7110	12.8	8.00

		Data Tabula	tion		
Vstd	Qstd	$\sqrt{\Delta H \left( \frac{Pa}{Pstd} \right) \left( \frac{Tstd}{Ta} \right)}$		Qa	√∆H(Ta/Pa)
(m3)	(x-axis)	(y-axis)	Va	(x-axis)	(y-axis)
0.9961	0.6970	1.4144	0.9958	0.6968	0.8854
0.9918	0.9791	2.0003	0.9915	0.9788	1.2522
0.9899	1.0938	2.2364	0.9895	1.0934	1.4000
0.9887	1.1509	2.3456	0.9883	1.1506	1.4683
0.9834	1.3831	2.8289	0.9830	1.3826	1.7708
	m=	2.05924		m=	1.28946
<b>QSTD</b>	b=	-0.01929	QA	b=	-0.01207
	r=	0.99998	~.	r=	0.99998

	Calculation	ns	
Vstd=	ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta)	Va=	ΔVol((Pa-ΔP)/Pa)
Qstd= Vstd/∆Time		Qa= Va/ΔTime	
	For subsequent flow rat	e calculatio	ns:
Qstd=	$1/m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right)-b\right)$	Qa=	$1/m\left(\left(\sqrt{\Delta H\left(Ta/Pa\right)}\right)-b\right)$

	Standard Conditions
Tstd:	298.15 °K
Pstd:	760 mm Hg
	Key
ΔH: calibrator	manometer reading (in H2O)
ΔP: rootsmete	er manometer reading (mm Hg)
Ta: actual abs	olute temperature (°K)
Pa: actual bar	ometric pressure (mm Hg)
b: intercept	
m: slope	

#### RECALIBRATION

US EPA recommends annual recalibration per 1998 40 Code of Federal Regulations Part 50 to 51, Appendix B to Part 50, Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere, 9.2.17, page 30

Tisch Environmental, Inc. 145 South Miami Avenue Village of Cleves, OH 45002

www.tisch-env.com

TOLL FREE: (877)263-7610 FAX: (513)467-9009

#### InnoTech Instrumentation Co. Ltd.

創新科儀有限公司

#### HIVOL SAMPLER CALIBRATION DATA SHEET (TSP)

#### Site Information

Location:	The admin building inside the construction	Site ID:	A1a	Date:	01-Aug-2022
Location.	site	Site iD.	Ala	Date.	01-Aug-2022
Serial No:	1048	Model:	TE-5170X	Operator:	Kelvin Lau

#### Ambient Condition

Corrected Pressure (mm Hg):	754.5	Temperature (deg K):	304.6
-----------------------------	-------	----------------------	-------

#### Calibration Orifice

Model:	TE-5025A	Slope:	1.28946
Serial No.:	3465	Intercept:	-0.01207
Calibration Due Date:	28-Jun-23	Corr. Coeff:	0.99998

#### Calibration Data

Plate or	In,H2O	Qa, X-Axis	I, CFM	IC, Y-Axis
Test #	(in)	(m3/min)	(chart)	(corrected)
1	1.34	0.894	30.9	30.41
2	1.97	1.082	36.7	36.19
3	2.26	1.158	38.9	38.34
4	2.59	1.239	41.3	40.75
5	3.19	1.376	45.0	44.31

Sampler Calibtation Relationship (Qa on x-axis, IC on y-axis)

m=	28.9600	b=	4.7020	Corr. Coeff=	0.9993
Sar	mpler set point(SSP)	40	CFM		

m = sampler slope

b = sampler interceptl = chart response

Pav = average pressure

Tav = average temperature

#### Calculations

Qstd = 1/m[Sqrt(H2O(Pa/Pstd)(Tstd/Ta))-b] IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart response
I = actual chart response
m = calibrator Qstd slope

b = calibrator Qstd intercept
Ta = actual temperature during calibrati

Ta = actual temperature during calibration (deg K)
Pa = actual pressure during calibration (mm Hg)

Tstd = 298 deg K Pstd = 760 mm Hg

Checked by: \_\_\_\_

For subsequent calculation of sampler flow: (1.21\*m+b)/[Sqrt(298/Tav)(Pav/760)]

Date:

01-Aug-2022

#### InnoTech Instrumentation Co. Ltd.

創新科儀有限公司

#### HIVOL SAMPLER CALIBRATION DATA SHEET (TSP)

		Site	e Information			
_ocation:	The existing outfall pumping station inside the construction site	Site ID:	A2a	Date:	01-Aug	-2022
Serial No:	1085	Model:	TE-5170X	Operator:	Kelvir	ı Lau
		Amb	ient Conditio	n		
Corrected Pro	essure (mm Hg):	754.5	Temperature	(deg K):	304	.6
		Calil	bration Orifice	Э		
Model:			TE-5025A	Slope:	1.289	946
Serial No.:			3465	Intercept:	-0.01	207
Calibration D	ue Date:		28-Jun-23	Corr. Coeff:	0.99	998
Plate or	In,H2O		ibration Data Qa, X-Axis	I, CFM	IC, Y	-Axis
Test #	(in)	(	(m3/min)	(chart)	(corre	cted)
1	1.18		0.839	34.0	33.	
2	1.59		0.973	36.6	36.0	
3	2.28		1.163	39.6	39.0	
<u>4</u> 5	2.58 3.79		1.497	40.8 45.6	40.2	
Sampler Calibt	ation Relationship (Qa on x-a:	kis, IC on y-	axis) 19.1663	_	Corr. Coeff=	0.9994
San	npler set point(SSP)	40	CFM	_		
	rt(H2O(Pa/Pstd)(Tstd/Ta))-b] Pstd)(Tstd/Ta)]	(	Calculations  m = sampler s  b = sampler in  I = chart respon	itercept		

b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pa = actual pressure during calibration (mm Hg)

Tstd = 298 deg K

Pstd = 760 mm Hg

Qstd = standard flow rate

I = actual chart response m = calibrator Qstd slope

IC = corrected chart response

For subsequent calculation of sampler flow: (1.21\*m+b)/[Sqrt(298/Tav)(Pav/760)]

Checked by: Date: 01-Aug-2022

Tav = average temperature

Pav = average pressure

# APPENDIX D Monitoring Data (Air)

Location: A1a

Monitoring Period: August 2022

Parameter: TSP 1-hour

Major Dust Source Construction activities and daily operation of the

sewerage treatment plant

Date	Weather	Start Time	1st Hour (μg/m³)	2 <sup>nd</sup> Hour (μg/m³)	3 <sup>rd</sup> Hour (μg/m³)
2022/08/01	Cloudy	13:44	66	65	59
2022/08/08	Fine	11:57	64	61	54
2022/08/15	Sunny	13:29	60	68	66
2022/08/22	Sunny	13:10	72	75	70
2022/08/29	Fine	13:37	58	62	56
		Average		64	
		Range		54 - 75	

Location: A2a

Monitoring Period: August 2022

Parameter: TSP 1-hour

Major Dust Source Construction activities and daily operation of the sewerage

treatment plant

Date	Weather	Start Time	1 <sup>st</sup> Hour (µg/m³)	2 <sup>nd</sup> Hour (μg/m³)	3 <sup>rd</sup> Hour (μg/m³)
2022/08/01	Cloudy	13:56	72	62	74
2022/08/08	Fine	11:49	71	64	69
2022/08/15	Sunny	13:12	66	68	73
2022/08/22	Sunny	13:00	64	63	67
2022/08/29	Fine	13:48	68	62	68
		Average		65	
		Range		62 - 74	

Figure D.1 Measured 1-Hour TSP at the admin building inside the construction site (A1a)

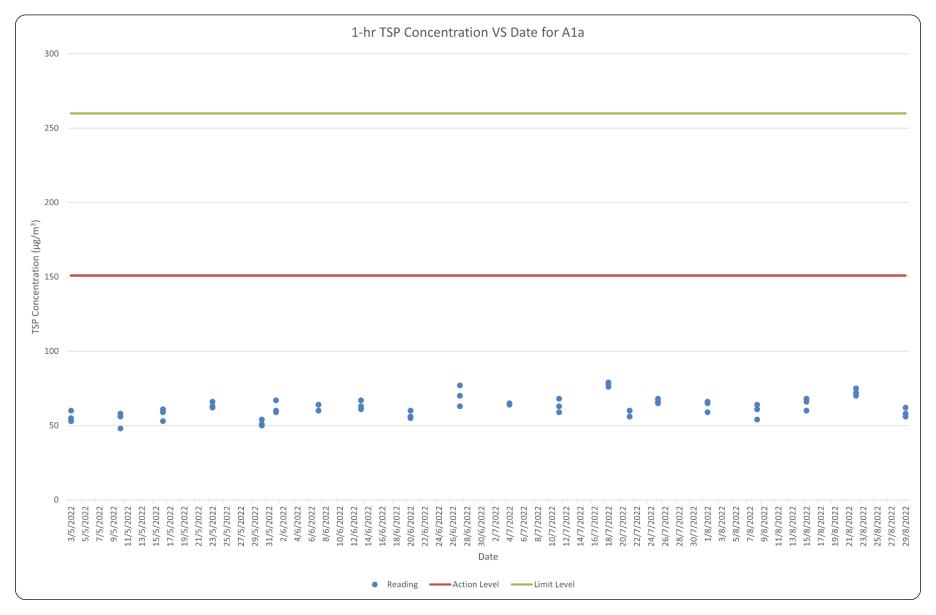
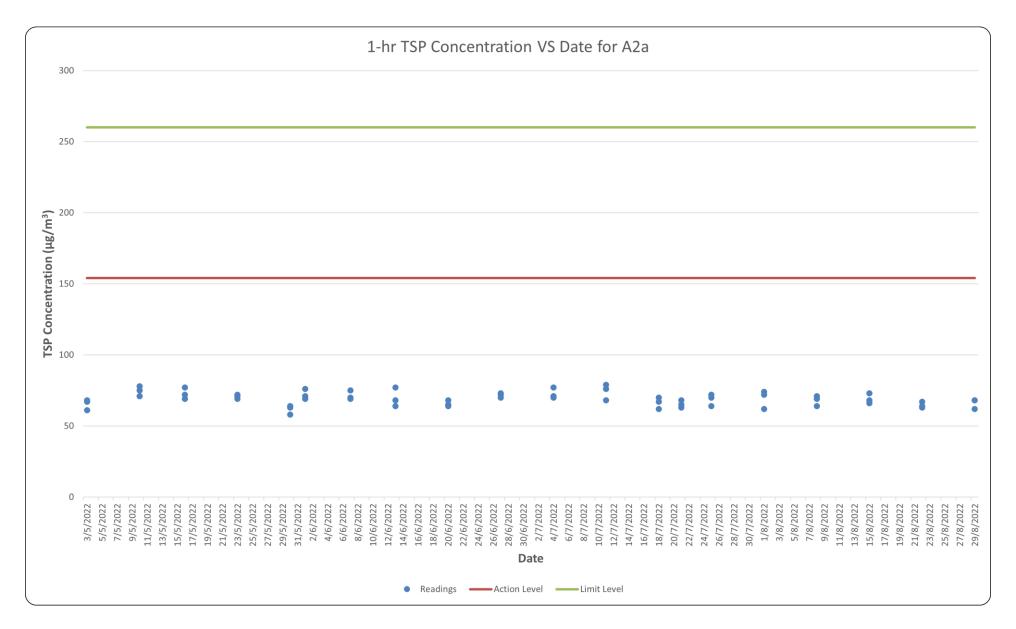


Figure D.2 Measured 1-Hour TSP at the existing outfall pumping station inside the construction site (A2a)



Location: A1a

Parameter: TSP 24-hour

Major dust source Construction activities and daily operation of the sewerage treatment plant

Start Date	Avg Air Temp	Avg Atmos pheric Pressu re	Weather Condition	Elapse Time		Sampling Time	Flow Rate	Standard Air Volume	Filter Weigh	t (g)	Particulate weight	Conc.
	(°C)	(mm Hg)		Initial (min)	Final (min)	Actual (min)	(m³/min)	(m³)	Initial	Final	(g)	(μg/m³)
01/08/2022	31.3	1006.5	Cloudy	212845	214402	1557	1.09	1703	2.7636	2.8923	0.1287	76
08/08/2022	27.5	1005.0	Fine	214402	215890	1488	1.13	1687	2.7809	2.8144	0.0335	20
15/08/2022	29.7	1005.9	Sunny	215890	217337	1447	1.15	1660	2.7550	2.7819	0.0269	16
22/08/2022	30.6	1006.0	Sunny	217337	218840	1503	1.09	1645	2.7471	2.7999	0.0528	32
29/08/2022	29.8	1009.5	Fine	218840	220290	1450	1.07	1546	2.7544	2.7915	0.0371	24
											Average	34
											Range	16 - 76

Location: A2a

Parameter: TSP 24-hour

Major Site Activities Construction activities and daily operation of the sewerage treatment plant

Major dust source Routine operation of the Sewage Treatment Plant

Start Date	Avg Air Temp	Avg Atmos pheric Pressu re	Weather Condition	Elapse Time		Sampling Time	Flow Rate	Standard Air Volume	Filter Weig	ght (g)	Particulate weight	Conc.
	(°C)	(mm Hg)		Initial (min)	Final (min)	Actual (min)	(m³/min)	(m³)	Initial	Final	(g)	(μg/m³)
01/08/2022	31.3	1006.5	Cloudy	425645	427203	1558	1.18	1831	2.7553	2.8140	0.0587	32
08/08/2022	27.5	1005.0	Fine	427203	428686	1483	1.19	1765	2.7593	2.7834	0.0241	14
15/08/2022	29.7	1005.9	Sunny	428686	430166	1480	1.12	1624	2.7491	2.7867	0.0376	23
22/08/2022	30.6	1006.0	Sunny	430166	431701	1535	1.00	1542	2.7579	2.8219	0.0640	42
29/08/2022	29.8	1009.5	Fine	431701	433197	1496	1.13	1691	2.7472	2.8077	0.0605	36
											Average	29
											Range	14 - 42

Figure D.3 Measured 24-Hour TSP at the admin building inside the construction site (A1a)

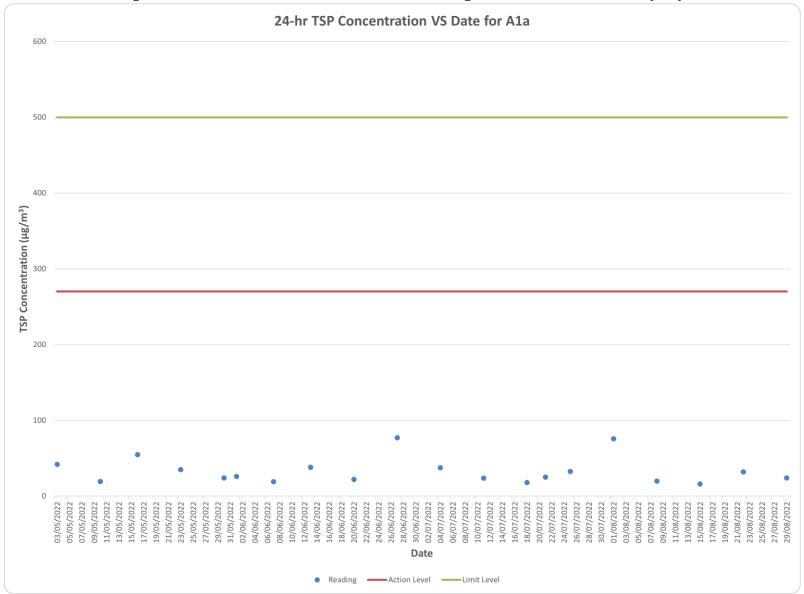
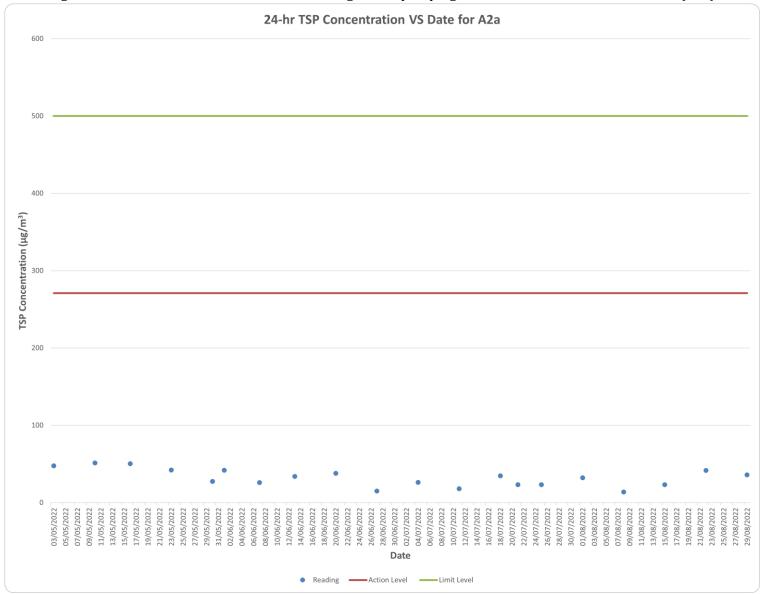


Figure D.4 Measured 24-Hour TSP at the existing outfall pumping station inside the construction site (A2a)



# APPENDIX E Calibration Certificates (Noise)



### Certificate of Calibration

for

Description: Sound Level Meter

Manufacturer: SVANTEK

Type No.: 971 (Serial No.: 96062)

Microphone: ACO 7052 E (Serial No.:79778)

Preamplifier: SVANTEK SV 18 (Serial No.:97276)

#### 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 (31.5 Hz to 4k Hz)

☐ 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: 21 June 2022

Date of calibration: 27 June 2022

Date of NEXT calibration: 26 June 2023

Calibrated by:

Calibration Technician

Certified by:

Mr. Tang Cheuk Hang Quality Manager

Date of issue: 27 June 2022

Certificate No.: APJ22-029-CC002

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



#### 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.

#### 1. Calibration Conditions:

 Air Temperature:
 24.2 °C

 Air Pressure:
 1004 hPa

 Relative Humidity:
 60.8 %

#### 2. Calibration Equipment:

	Type	Serial No.	Calibration Report Number	Traceable to
Multifunction Calibrator	B&K 4226	2288467	AV200041	HOKLAS

#### 3. Calibration Results

Sound Pressure Level

Reference Sound Pressure Level

Sett	Setting of Unit-under-test (UUT)				lied value	UUT Reading,	IEC 61672 Class	
Range, dB Freq. Weighting Time Weighting		Level, dB	Frequency, Hz	dB	Specification, dB			
25-124.5	dBA	SPL	Fast	94	1000	94.0	±0.4	

#### Linearity

Sett	ing of Ui	nit-under-t	est (UUT)	Арр	lied value	UUT Reading,	IEC 61672 Class 1
Range, dB	Freq. \	Veighting	Time Weighting	Level, dB	Frequency, Hz	dB	Specification, dB
				94		94.0	Ref
25-124.5	dBA	SPL	Fast	104	1000	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. W	eighting	Time Weighting	Level, dB	Frequency, Hz	dB	Specification, dB
25-124.5	JD A	CDI	Fast	94	1000	94.0	Ref
23-124.5	dBA	SPL	Slow	94	1000	94.0	±0.3

Certificate No.: APJ22-029-CC002

(A+A) \*L

Page 2 of 4



Frequency Response

#### Linear Response

Setting of Unit-under-test (UUT)				Appl	ied value	UUT Reading,	IEC 61672 Class 1
Range, dB	Freq. W	eighting	Time Weighting	Level, dB	Frequency, Hz	dB	Specification, dB
					31.5	94.3	±2.0
					63	94.2	±1.5
			125	94.1	±1.5		
25-124.5	dB	SPL	Fast	94	250	94.1	±1.4
23-124.3	UD	SFL	rast	94	500	94.0	±1.4
					1000	94.0	Ref
					2000	93.7	±1.6
				4000	93.1	±1.6	

#### A-weighting

Sett	ing of Uni	t-under-t	est (UUT)	App	lied value	UUT Reading,	IEC 61672 Class 1
Range, dB	Freq. W	eighting	Time Weighting	Level, dB	Frequency, Hz	dB	Specification, dB
					31.5	54.9	-39.4 ±2.0
			*		63	68.0	-26.2 ±1.5
			125	78.0	-16.1 ±1.5		
25-124.5	dBA	SPL	Foot	0.4	250	85.4	-8.6 ±1.4
23-124.5	dbA	SPL	Fast	94	500	90.8	-3.2 ±1.4
					1000	94.0	Ref
				2000	94.9	+1.2±1.6	
				4000	94.2	+1.0 ±1.6	

#### C-weighting

Sett	ing of U	nit-under-t	est (UUT)	App	lied value	UUT Reading,	IEC 61672 Class 1
Range, dB	Freq.	Weighting	Time Weighting	Level, dB	Frequency, Hz	dB	Specification, dB
					31.5	91.3	-3.0 ±2.0
					63	93.4	-0.8 ±1.5
				125	93.9	-0.2 ±1.5	
25-124.5	dBC	SPL	Foot	East 250	250	94.1	-0.0 ±1.4
23-124.3	ubc	SFL	Fast	94	500	94.1	-0.0 ±1.4
					1000	94.0	Ref
					2000	93.6	-0.2 ±1.6
				4000	92.4	-0.8 ±1.6	

Certificate No.: APJ22-029-CC002



Page 3 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-ma

E-mail: inquiry@aa-lab.com



#### 4. 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	± 0.15
	63 Hz	± 0.05
	125 Hz	± 0.05
	250 Hz	± 0.05
	500 Hz	± 0.05
	1000 Hz	± 0.05
	2000 Hz	± 0.05
	4000 Hz	± 0.10
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.: APJ22-029-CC002



Page 4 of 4



3-20-41 Higashimotomachi Kokubunji Tokyo 185-8533 Phone:042(359)7888, Facsimile:042(359)7442

#### **Certificate of Calibration**

Name : Sound Level Meter, Class 1

Model : NL-52 S/No. : 01010876

Date of Calibration: April, 19, 2022

We hereby certify that the above product was tested and calibrated according to the prescribed Rion procedures, and that it fulfills specification requirements.

The measuring equipment and reference devices used for testing and calibrating this unit are managed under the Rion traceability system and are traceable according to official Japanese standards and official standards of countries belonging to the International Committee of Weights and Measures.

RION CO., LTD.

Manager, Quality Control Department

Hawamura

Model	NL-52	Supplied A	Sound	1 / 1	
	If	Ensure all the items belo		Level Meter, Class 1 kage.	
Type Description			ase contact your supplier.		
NL-52	Main unit		Quantity	Note	
NL-42-025			1		
	Storage case		1		
VS-10	Windscreen		1		
IL-42-033	Windscroon fall				
M-63-017		prevention rubber	1	attached to the main unit	
	Hand strap		1		
R6	Size AA alkaline batteries		4		
	CD-ROM (Instruction				
	reclifical notes, Program option manual)		1		
	Description for IEC 61672-1		1		
	SD memory card	(512 MBvte)	1	Only when NY 1071	
	Inspection certificate  Document for China RoHS			only when NX-42EX is pre- installed	
			1	1 This sheet	
marks:			1	only to China	
SPECTOR	Ir	spection C	ertifica	ite	
	J. Hawa	mura			

Tokyo 185-8533,

Sound and Vibration Measuring Instrument Section Product information and software downloads can be Japan

found on our web-site: https://rion-sv.com/

Please check it out.

NºC11030502



#### **CALIBRATION CERTIFICATE**

Certificate Information  Date of Issue  27-Apr-2022  Certificate Number  M  Customer Information  Company Name Address  Acuity Sustainability Consulting Limited Unit C, 11/F., Ford Glory Plaza, Nos. 37-39 Wing Hing Street,	MLCN220926S
Company Name Acuity Sustainability Consulting Limited Address Unit C, 11/F., Ford Glory Plaza,	
Address Unit C, 11/F., Ford Glory Plaza,	
Nos. 37-39 Wing Hing Street,	
Chauna Sha Wan Kandara HV	
Cheung Sha Wan, Kowloon, HK	
Equipment-under-Test (EUT)	
Description Sound Calibrator	
Manufacturer Svantek	
Model Number SV 33B	
Serial Number 83042 Equipment Number	
300 • 03 • 03 00 00 00 00 00 00 00 00 00 00 00 00	
Calibration Particular	
Date of Calibration 27-Apr-2022 Calibration Equipment 4231(MLTE008) / AV200063 / 23-Jun-23	
Calibration Equipment   4231(MLTE008) / AV200063 / 23-Jun-23   1357(MLTE190) / MLEC21/05/02 / 26-May-22	
100 (MB12170) / MBBC21703/02 / 20-May-22	
Calibration Procedure MLCG00, MLCG15	
Calibration Conditions Laboratory Temperature 23 °C ± 5 °C	
Relative Humidity 55% ± 25%	
EUT Stabilizing Time Over 3 hours	
Warm-up Time Not applicable Internal battery	
Calibration Results  Calibration data were detailed in the continuation pages.	
All calibration results were within EUT specification.	
Specification.	
Approved By & Date	
K.O. Lo	27-Apr-2022
Statements	27 11pr-2022
* Calibration equipment used for this calibration are traceable to national / international standards.	
* The results on this Calibration Certificate only relate to the values measured at the time of the calibration and the uncertant include allowance for the EUT long term drift, variation with environmental changes, vibration and shock during transfer or the EUT long term drift, variation with environmental changes, vibration and shock during transfer or the EUT long term drift, variation with environmental changes.	ainties quoted will
overloading, mishandling, misuse, and the capacity of any other laboratory to repeat the measurement	insportation,
<ul> <li>MaxLab Calibration Centre Limited shall not be liable for any loss or damage resulting from the use of the EUT.</li> <li>The copy of this Certificate is owned by MaxLab Calibration Centre Limited. No part of this Certificate may be reproduced.</li> </ul>	and the state of
prior written approval of MaxLab Calibration Centre Limited. No part of this Certificate may be reprodu	uced without the

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Certificate No. MLCN220926S

alibration Data		医标准系统		
EUT Setting	Standard Reading	EUT Error	Calibration Uncertainty	EUT Specification
114 dB	114.0 dB	0.0 dB	0.15 dB	± 0.3 dB

- END -

Calibrated By: Date:

Dan 27-Apr-22

Checked By: Date:

K.O. Lo 27-Apr-22

Page 2 of 2

萬 儀 校 正 中 心 有 限 公 司 MaxLab Calibration Centre Limited 香港新界要涌華星街 16-18 號保盈工業大廈 9 樓 B 室 Unit B, 9/F., Boldwin Industrial Bldg., 16-18 Wah Sing Street, Kwai Chung, N.T., Hong Kong Tel: (852) 2116 1380 Fax: (852) 2264 6480 Email: info@maxlab.com.hk

Page 1 of 2

Certificate No. D224269E



#### CALIBRATION CERTIFICATE

Product : SOUND CALIBRATOR

Type NC-75 Serial number : 34524163

: RION CO., LTD. Manufacturer

Calibration quantities : Sound pressure level (with reference standard microphone) Calibration method : Measured by specified secondary standard microphone

according to JCSS calibration procedure specified by RION.

Ambient conditions : Temperature 23.4 °C, Relative humidity 48 %,

Static pressure 100.9 kPa

Calibration date : 09/05/2022 (DD/MM/YYYY)

Calibration location : 3-20-41 Higashimotomachi, Kokubunji, Tokyo 185-8533, Japan

RION CO., LTD. Calibration Room

We hereby certify that the results of this calibration were as follows.

Issue date: 12/05/2022 (DD/MM/YYYY)

Junichi Kawamura Manager Quality Assurance Section, Quality Assurance Department, Environmental Instrument Division,

RION CO., LTD. 3-20-41 Higashimotomachi, Kokubunji,

Tokyo 185-8533, Japan

This certificate is based on article 144 of the Measurement Law and indicates the result of calibration in accordance with measurement standards traceable to Primary Measurement Standards (National Standards) which realizes the physical units of measurement according to the International System of Units (SI).

The accreditation symbol is attestation of which the result of calibration is traceable to Primary Measurement Standards (National Standards).

The certificate shall not be reproduced except in full, without the written approval of the issuing laboratory.

The calibration laboratory who issued this calibration certificate conforms to ISO/IEC 17025:2017

This calibration certificate was issued by the calibration laboratory accredited by IAJapan who is a signatory to the Mutual Recognition Arrangement (MRA) of International Laboratory Accreditation Cooperation (ILAC) and Asia Pacific Accreditation Cooperation (APAC). This (These) calibration result(s) may be accepted internationally through ILAC/APAC MRA



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Certificate No. D224269E

### CALIBRATION RESULT

1. Sound pressure level (with reference standard microphone)

Measured	Expanded
value	uncertainty *1
93.98 dB	0.09 dB

Specified secondary standard microphone:

Type : 4160 Serial number : 2973341

Reference Sound pressure: 2×10.5 Pa

 $^{*1}$  Defines an interval estimated to have a level of confidence of approximately 95 %. Coverage factor k=2

Calibration result is the calibration value in ambient conditions during calibration.

### BE OUT OF JCSS CALIBRATION

1. Frequency

Measured	Measuremen
value	uncertainty (k=2)
1000.0 Hz	$3.9 \times 10^{-4} \mathrm{Hz}$

Working measurement standard universal counter:

Type : 53132A Serial number : MY40005574

(JCSS Calibration Certificate No. 21081499079575510)

2. Total distortion

Measured	
value	
0.3 %	

Working measurement standard distortion meter:

: VA-2230A Serial number : 11076061

(A2LA Calibration Certificate No. 1501-03080)

- closing -



## APPENDIX F Monitoring Data (Noise)

Location: N2a

Monitoring Period: August 2022

Parameter: Noise

Major Noise Source: Construction activities and daily operation of the sewerage

treatment plant

Other Factors NA

Date	Weather	Start Time	$\mathbf{L}_{\mathbf{eq}}$	L <sub>10</sub>	L <sub>90</sub>
02/08/2022	Cloudy	14:02	67.0	69.1	65.0
09/08/2022	Cloudy	11:06	68.9	71.6	66.9
16/08/2022	Fine	16:58	68.8	72.3	67.5
23/08/2022	Sunny	16:26	68.3	69.9	65.9
30/08/2022	Sunny	13:55	67.8	69.2	65.6
		Average		69.2	
		Range		67.0 - 68.9	

Location: N3a

Monitoring Period: August 2022

Parameter: Noise

Major Noise Source: Construction activities and daily operation of the sewerage

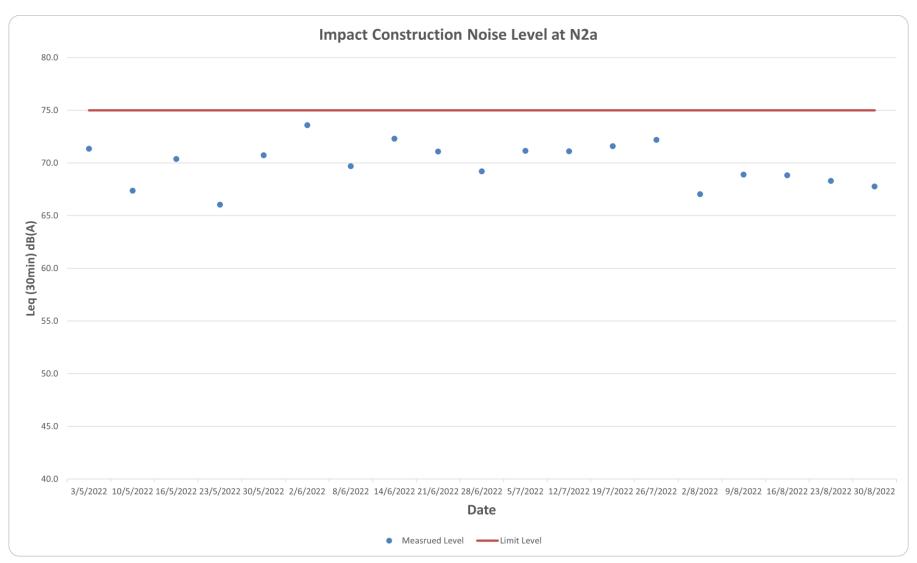
treatment plant

Other Factors NA

Date	Weather	Start Time	$\mathbf{L}_{\mathbf{eq}}$	L <sub>10</sub>	L <sub>90</sub>
02/08/2022	Cloudy	13:17	64.2	67.2	62.6
09/08/2022	Cloudy	11:53	62.7	65.1	60.1
16/08/2022	Fine	16:14	65.7	67.6	65.0
23/08/2022	Sunny	15:49	65.0	66.4	64.1
30/08/2022	Sunny	13:04	69.0	71.5	66.1
	I	Average		66.8	
		Range		62.7 – 69.0	

Remarks: +3 dB(A) free-field corrections have been made to N3a.

Figure F.1 Measured daytime (0700-1900) noise level at the admin building inside the construction site (N2a)



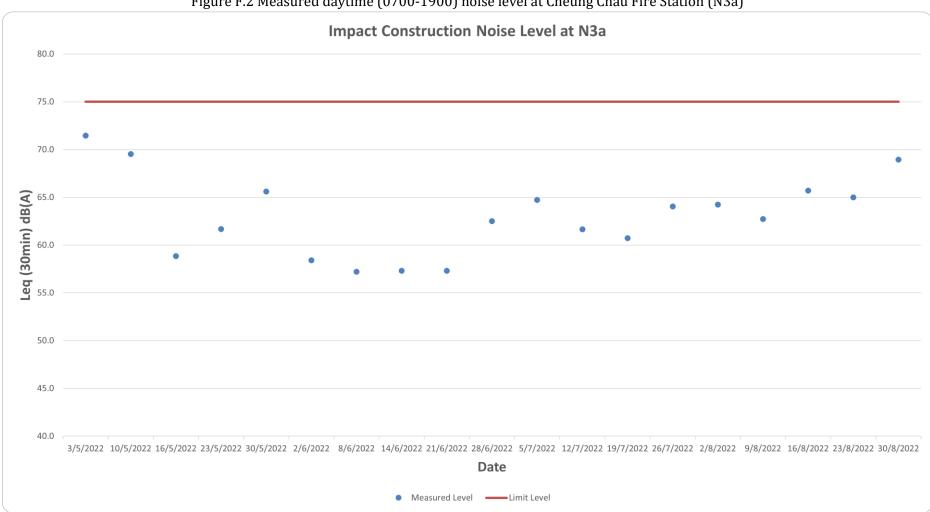


Figure F.2 Measured daytime (0700-1900) noise level at Cheung Chau Fire Station (N3a)

s: +3 dB(A) free-field corrections have been made to the data in the graph.

## APPENDIX G Implementation Schedule

EIA Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the	Location / Timing of implementation of Measures		on of	What requirements or standards for the measures to achieve?
			measures?	D	С	0	
Construction Phase	(Upgrading Works of Cheung Chau STW and Pak She SPS	(DP Component))				•	
S.3.5.5	Appropriate dust control measures should be implemented during the construction stage in accordance with the requirements in the Air Pollution Control (Construction Dust) Regulation. Dust control techniques should be considered to control dust to a level not exceeding the AQOs as well as the 1-hour TSP guideline level of 500 µg/m³. These measures include, but are not limited to, the following:  • Adoption of good site practices; • Avoid practices likely to raise dust level; • Frequent cleaning and damping down of stockpiles and dusty areas of the site; • Covering the exposed areas with tarpaulin; • Reducing drop height during material handling; • Provision of wheel-washing facilities for site vehicles leaving the site; • Regular plant maintenance to minimize exhaust emission; and • Sweep up dust and debris at the end of each shift.	Air Quality (fugitive dust) Control during Construction Phase	Contractors		<b>√</b>		Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation
S.3.10.1	All the dust control measures as recommended in the Air Pollution Control (Construction Dust) Regulation, where applicable, should be implemented. Typical dust control measures include:	Air Quality (fugitive dust) Control during Construction Phase	Contractors		1		Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation

EIA Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures		on of	What requirements or standards for the measures to achieve?
			measures?	D	С	0	
S.3.10.1	Watering every 1.5 hours on active works areas and paved haul roads to reduce dust emissions by 90.9% (e.g. watering intensity at 0.5 litres/m². Actual application shall depend on the site condition and weather conditions).	Air Quality (fugitive dust) Control during Construction Phase	Contractors		√		EIA, Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation
S.3.10.1	Watering every hour on unpaved areas and stockpiles of dusty materials (if no tarpaulin is provided) to reduce dust emissions by 90% (e.g. watering intensity at 1.5 litre/m² during the first hour, subsequent application at 0.2 litre/m². Actual application shall depend on the site condition and weather conditions).	Air Quality (fugitive dust) Control during Construction Phase	Contractors		1		EIA, Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation
S.3.10.1	Use of regular watering, with complete coverage, to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather	Air Quality (fugitive dust) Control during Construction Phase	Contractors		√		Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation
S.3.10.1	Use of frequent watering for particularly dusty construction areas and areas close to ASRs	Air Quality (fugitive dust) Control during Construction Phase	Contractors		<b>V</b>		Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation
S.3.10.1	Vehicle washing facilities should be provided at every vehicle exit point	Air Quality (fugitive dust) Control during Construction Phase	Contractors		√		Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation

EIA Ref.	,	recommended measures &	implement the	Location / Timing of implementation of Measures			What requirements or standards for the measures to achieve?
		measures?	D	С	0		
S.3.10.1	Where a site boundary adjoins a road, streets or other areas accessible to the public, hoarding of not less than 2.4 m high from ground level should be provided along the entire length except for a site entrance or exit	Air Quality (fugitive dust) Control during Construction Phase	Contractors		V		Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation
S.3.10.1	Stockpiles of imported material kept on site shall be contained within hoarding, dampened and/or covered during dry and windy weather	Air Quality (fugitive dust) Control during Construction Phase	Contractors		√		Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation
S.3.10.1	Material stockpiled alongside trenches should be covered with tarpaulins	Air Quality (fugitive dust) Control during Construction Phase	Contractors		V		Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation
S.3.10.1	Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs	Air Quality (fugitive dust) Control during Construction Phase	Contractors		V		Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation

EIA Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	impl	ion / Tim ementati Measures	on of	What requirements or standards for the measures to achieve?
			measures:	D	С	0	
S.3.10.1	Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or spayed with water to maintain the entire surface wet during the non-working hours	Air Quality (fugitive dust) Control during Construction Phase	Contractors		1		Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation
S.3.10.1	All dusty materials shall be sprayed with water prior to any loading, unloading or transfer operation so as to keep the dusty materials wet	Air Quality (fugitive dust) Control during Construction Phase	Contractors		√		Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation
S.3.10.1	Water sprays shall be used during the delivery and handling of sands aggregates and the like	Air Quality (fugitive dust) Control during Construction Phase	Contractors		V		Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation
S.3.10.1	All demolished items that may emit dust particles should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides within a day of demolition	Air Quality (fugitive dust) Control during Construction Phase	Contractors		V		Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation

EIA Ref.	Mitigation Measures recommended measures & implement main concerns to address t	recommended measures &		imple	ion / Tim ementati Measures	on of	What requirements or standards for the measures to achieve?
		measures:	D	С	0		
S.3.10.1	Good site practices for concrete batching plant  Every stock of more than 20 bags of cement or dry pulverized fuel ash(PFA) should be cover entirely by impervious sheeting or placed in an area sheltered on the top and the sides.  Cement or dry PFA delivered in bulk should stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed.  Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with effective fabric filter or equivalent air pollution control system (Maximum TSP emission factor of Silos and Mising Tower: 50mg/m³)	Air Quality (fugitive dust) Control during Construction Phase	Contractors		V		Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation Best Practical Means for Cement Works (Concrete Batching Plant) BPM 3/2(93)

EIA Ref.	Recommended Environmental Protection Measures / Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?					
Construction Phase (Upgrading Works of Cheung Chau STW and Pak She SPS (DP Component))										
S.4.4.12	Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	Noise control during construction	Contractors	At all construction areas of the site during the entire construction period	EIA, Contractual requirements					
S.4.4.12	Machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	Noise control during construction	Contractors	At all construction areas of the site during the entire construction period	EIA, Contractual requirements					
S.4.4.12	Plant known to emit noise strongly in one direction should, where possible, be orientated to direct noise away from the NSRs.	Noise control during construction	Contractors	At all construction areas of the site during the entire construction period	EIA, Contractual requirements					
S.4.4.12	Mobile plant should be sited as far away from NSRs as possible.	Noise control during construction	Contractors	At all construction areas of the site during the entire construction period	EIA, Contractual requirements					
S.4.4.12	Material stockpiles and other structures should be effectively utilized, where practicable, to screen noise from on-site construction activities.	Noise control during construction	Contractors	At all construction areas of the site during the entire construction period	EIA, Contractual requirements					

EIA Ref.	Recommended Environmental Protection Measures / Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
S.4.4.13	Use of quiet plant (PME):  Generator Poker, vibratory, hand-held Breaker, excavator mounted (hydraulic) Excavator Tracked Mobile Crane Vibratory Compactor Dumper Air compressor Concrete Pump Pilling Rig	Noise control during construction	Contractors	At all construction areas of the site during the entire construction period	EIA, Contractual requirements
S.4.4.14	Temporary site hoardings of 2.4 m high are recommended for the works at the Pak She SPS. The hoardings will be erected along the works boundary facing the NSRs. The PME involved in the works would be screened by the erected site hoardings. Without direct line of sight from the affected NSRs, a noise reduction of 10 dB(A) could be achieved provided that the hoardings have no openings or gaps and have a surface mass of at least 7 kg/m². Nonetheless, a -5 dB(A) screening correction for site hoardings has been applied as a more conservative approach.	Noise control during construction	Contractors	At Pak She SPS during the entire construction period	EIA
S.4.4.23	For NSRs which would be affected by more than one Works Types, good scheduling works is recommended to minimize the cumulative construction noise impacts due to different Works Types.	Noise control during construction	Contractors	Construction areas near the specified locations during the construction period	EIA, Contractual requirements

EIA Ref.	Recommended Environmental Protection Measures / Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
S.4.4.29	In order to prevent potential cumulative construction noise impacts to NSRs, the works at Tai Kwai Wan San Tsuen are recommended to be scheduled to avoid concurrent works at the areas near Tai Kwai Wan of the Improvement of Fresh Water Supply to Cheung Chau project.	Noise control during construction	DSD and Contractors	Construction areas near the specified locations during the construction period	EIA, Contractual requirements
S.4.4.30	The contractor shall liaise with "Replacement and Rehabilitation of Water Mains Stage 4, Mains on Hong Kong and Islands – Investigation, Design and Construction" contractors so as to avoid undertaking works concurrently with the works when they are in the close proximity as far as practicable.	Noise control during construction	DSD and Contractors	Construction areas near the specified locations during the construction period	EIA, Contractual requirements
S.4.4.31	The contractor shall liaise with Improvement to Existing Roads and Drains in Cheung Chau Old Town, Remaining Engineering Works Stage 3 works contractors so as to avoid undertaking works concurrently with the works when they are in the close proximity as far as practicable.	Noise control during construction	DSD and Contractors	Construction areas near the specified locations during the construction period	EIA, Contractual requirements

EIA Ref.	Mitigation Measures recommended implem	Mitigation Measures recommended implement the	recommended im			to impl measu		What requirements or standards for the
		concerns to address	measures :	D	С	0	measures to achieve?	
Construction Phase (Up	ograding Works of Cheung Chau STW and Pak She SPS (DP Com	ponent) and Sewers Work	ks (non-DP Compo	nent))	•	•		
S.5.7.1	Practices outlined in ProPECC PN 1/94 Construction Site Drainage are recommended, as highlighted below:  • Perimeter channels are to be installed in works areas to intercept runoff at the site boundary prior to the commencement of any earthworks. Surface runoff should be discharged into storm drains via sand/ silt removal facilities with an adequate capacity;  • Works programme should be designed to minimize works areas to reduce soil exposure and site runoff;  • Silt removal facilities, channels and manholes should be maintained and cleaned regularly to ensure their proper functions;  • Works programme should be carefully planned to minimize the scale of soil excavation during the rainy season;  • Earthworks surfaces should be well compacted and subsequent permanent works or surface protection measures should be carried out immediately;  • All vehicles should be washed before they leave the construction site to avoid earth, mud, and debris being carried	Water Quality Control	Contractors		1		WPCO;     TM –Effluent     Standards for     Effluents     Discharged into     Drainage and     Sewerage     Systems, Inland     and Coastal     Water	

EIA Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main	Who to implement the measures?	When to implement the measures?			What requirements or standards for the
		concerns to address	measures?	D	С	0	measures to achieve?
(cont)	<ul> <li>Open stockpiles of construction materials on site should be covered with tarpaulin or similar fabric materials during storms;</li> <li>For sections of pipes that need to be laid underneath water courses with the open cut method, site works should be carried out during the dry season with a temporary drainage diversion; and;</li> <li>Any construction works along Hak Pai Road immediately by the Kwun Yam beach and Cheung Chau Tung Wan beach should be avoided during the swimming season.</li> </ul>	Water Quality Control	Contractors		<b>V</b>		WPCO;      TM –Effluent     Standards for     Effluents     Discharged into     Drainage and     Sewerage     Systems, Inland     and Coastal     Water
S.5.7.2 and S.5.7.3	Mitigations Measures for General Construction Activities:  Good site practices should be adopted to regularly clean the construction sites to avoid rubbish, debris and litter from entering to nearby water bodies; and  Good construction and site management practices should be implemented to ensure that litter, fuels, and solvents would not enter the public drainage systems.	Water Quality Control	Contractors		1		WPCO;      TM –Effluent     Standards for     Effluents     Discharged into     Drainage and     Sewerage     Systems, Inland     and Coastal     Water

EIA Ref.	Recommended Environmental Protection Measures/ Mitigation Measures  Objectives of the recommended implement the measures?  When to implement the measures?					What requirements or standards for the	
		concerns to address	illeasures:	D	С	0	measures to achieve?
S.5.7.4	Domestic sewage generated by workforce would be collected and discharged to the STW for proper treatment. Portable toilets should be provided by the Contractor, where necessary, to handle sewage from the workforce. The Contractor should also be responsible for waste disposal.	Water Quality Control	Contractors		1		WPCO;      TM –Effluent     Standards for     Effluents     Discharged into     Drainage and     Sewerage     Systems, Inland     and Coastal     Water
S.5.7.5 and S.5.7.6	Mitigations Measures for Spillage of Chemicals:     Registration to EPD as a Chemical Waste Producer if chemical wastes are generated and need to be disposed of;     Illegal disposal of chemicals should be strictly prohibited; and     Oils and fuels should only be used and stored in the designated area which has polluting prevention facilities.	Water Quality Control	Contractors		√		WPCO;      TM –Effluent     Standards for     Effluents     Discharged into     Drainage and     Sewerage     Systems, Inland     and Coastal     Water

EIA Ref.			implement the	When to implement the measures?			What requirements or standards for the
		concerns to address	measures?	D	С	0	measures to achieve?
Construction Phase	(Upgrading Works of Cheung Chau STW and Pak She SPS (DP Comp	oonent) and Sewers Work	s (non-DP Compor	nent))		•	•
S.6.6.1	The Contractor shall prepare a Waste Management Plan in accordance with the requirements set out in the ETWB TCW No. 19/2005, Waste Management on Construction Site, for the ER's approval. The WMP shall include monthly and yearly Waste Flow Tables that indicate the amounts of waste generated, recycled and disposed of (including final disposal site).	Waste management during construction	Contractors		1		ETWB TCW No. 19/2005, Waste Management on Construction Sites
S.6.6.1	The Contractor's waste management practices and effectiveness shall be audited by the Engineer's Representative on regular basis.	Waste management during construction	DSD		√		Waste Disposal Ordinance
S.6.6.1	The Contractor shall provide training for site staff concept of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycling.	Waste management during construction	Contractors		1		Waste Disposal Ordinance
S.6.6.1	Sufficient waste disposal points and regular collection of waste shall be provided.	Waste management during construction	Contractors		√		Waste Disposal Ordinance
S.6.6.1	Trucks with covering for the open-box bed and enclosed container shall be used to minimise windblown litter and dust during transportation of waste.	Waste management during construction	Contractors		1		Waste Disposal Ordinance
S.6.6.1	Regular cleaning and maintenance programme for drainage systems, pumps and oil interceptors.	Waste management during construction	Contractors		√		Waste Disposal Ordinance

EIA Ref.	Recommended Environmental Protection Measures/ Mitigation Measures			When to implement the measures?			What requirements or standards for the
		concerns to address	measures?	D	С	0	measures to achieve?
S.6.6.1	Separation of chemical wastes for special handling and appropriate treatment at a Chemical Waste Treatment Facility (CWTF).	Waste management during construction	Contractors		√		Waste Disposal (Chemical Waste) (General) Regulation
S.6.6.1	Encourage collection of aluminium cans, paper and plastic bottles by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the workforce.	Waste management during construction	Contractors		√		Waste Disposal Ordinance
S.6.6.1	Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal.	Waste management during construction	Contractors		√		Waste Disposal Ordinance
S.6.6.1	A recording system for the amount of wastes generated, recycled and disposed (including disposal sites) should be proposed.	Waste management during construction	Contractors		<b>V</b>		Waste Disposal Ordinance
S.6.6.1	Plan and stock construction materials to minimise amount of waste generated and avoid unnecessary generation of waste.	Waste management during construction	Contractors		<b>V</b>		Waste Disposal Ordinance
S.6.6.2	Alternatives C&D materials such as steel frameworks and plastic fencing can be considered to increase the chances for reuse.	Waste management during construction	Contractors		<b>V</b>		Waste Disposal Ordinance
S.6.6.3	In order to minimise the potential environmental impacts resulting from collection and transportation of C&D materials for off-site disposal, the excavated materials comprising fill materials should be reused on-site as backfilling materials as far as practicable.	Waste management during construction	Contractors		√		Waste Disposal Ordinance

EIA Ref.	Recommended Environmental Protection Measures/ Mitigation Measures  Objectives of the recommended measures & main		Who to implement the measures?	When to implement the measures?			What requirements or standards for the
		concerns to address	modeares.	D	С	0	measures to achieve?
S.6.6.4	C&D waste, such as wood, plastic, steel and other metals should be reused or recycled and, as a last resort, disposed of to landfill sites. A suitable area should be designated within the site for temporary stockpiling of C&D materials and to facilitate the sorting process. In order to monitor the disposal of C&D materials at the designated public fill reception facility and landfill and to control fly-tipping, a trip ticket system should be included. Reference can be made to Development Bureau Technical Circular (Works) (TC(W)) No. 6/2010 for details.	Waste management during construction	Contractors		٧		Development Bureau Technical Circular (Works) (TC(W)) No. 6/2010, Waste Disposal Ordinance
S.6.6.5	The C&D materials to be disposed of at public filling reception facilities shall be only materials consist of brick, concrete, cement plaster, soil and inert building debris. The materials shall be free from plastics, chemical waste, industrial metals and other materials that are considered unsuitable at the facility.	Waste management during construction	Contractors		1		Waste Disposal Ordinance
S.6.6.6	General refuse should be stored in enclosed bins or compaction units separate from C&D materials. A reputable waste collector should be employed by the contractor to remove general refuse from the site regularly, separately from C&D materials. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light materials. In addition, a sufficient number of enclosed bins shall be provided on site for containment of general refuse to prevent visual impacts and nuisance to the sensitive surrounding.	Waste management during construction	Contractors		1		Waste Disposal Ordinance

EIA Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main	Who to implement the measures?		to impl measur		What requirements or standards for the measures to achieve?	
		concerns to address	illeasules :	D	С	0		
S.6.6.7	For the disposal of chemical wastes produced at the construction site, the Contractor is required to register with the EPD as a Chemical Waste Producer and to follow the requirements 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. Appropriate labels should be securely attached on each chemical waste container indicating the chemical characteristics of the chemical waste, such as explosives, flammable oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor shall also use a licensed waste collector engaged to transport and dispose of the chemical wastes in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	Waste management during construction	Contractors		V		Waste Disposal (Chemical Waste) (General) Regulation	
S.6.6.8	Chemical toilets to be provided on-site shall be regularly cleaned and the night-soil collected and transported by a licensed contractor to a Government Sewage Treatment Works facility for disposal.	Waste management during construction	Contractors		√		Waste Disposal Ordinance	
EIA Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measure & main concerns to address	Who to implement the measures?		n to impe measu	olement ures?	What requirements or standards for the measures to achieve?	
Construction Phase	e (Upgrading Works of Cheung Chau STW (DP Component))							
Table 11.8	Visual Screen/Hoarding  Decorative hoarding or boundary fence for construction sites shall be considered, and designed to be compatible to the surroundings.	To minimise the potential visual impacts	Contractors		1		N/A	

EIA Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?		to impl measur	What requirements or standards for the measures to achieve?
Table 11.8	Protection to Existing Trees within Works Areas  All existing trees which are not in direct conflict with the proposed works will be retained. The existing trees proposed to be retained shall be properly maintained and protected by means of fencing to prevent vehicular or pedestrian intrusion that may potentially damage tree canopies, trunks and root zones. Detailed tree protection specifications shall be allowed and included in the Contract Specification, which specifying the tree protection requirement, submission and approval system, and tree monitoring system. For trees with high preservation value, individual tree assessments and continuous tree monitoring reports shall be provided by a certified Arborist, Landscape Architect or related professional during construction. All retained trees shall be recorded photographically at the commencement of contract.  Root pruning to the retained trees should be prohibited. Retained trees should be well-preserved by setting up a tree protection zone throughout the construction period for protecting the retained trees from damages.  To maximize protection to existing trees and ground vegetation, construction contracts may designate "No-intrusion Zone" to various areas within the site boundary with rigid and durable fencing for each individual no-intrusion zone. The contractor should close monitor and restrict the site working staff not to enter the "no-intrusion zone", even for non-direct construction activities and storage of equipment.	Landscape mitigation measures	DSD and Contractors	√	√ ·	EIA, Annex 10 and Annex 18 of EIAO- TM

EIA Ref.	EIA Ref.  Recommended Environmental Protection Measures/ Mitigation Measures  Measures  Mobjectives of the recommended measures implement & main concerns to		implement		to impl measu		What requirements or standards for the
		address	measures?	D	С	0	measures to achieve?
Table 11.8	Tree Transplanting  Existing trees to be affected shall be directly transplanted to the proposed tree receiving sites, or to temporary tree nurseries alternatively. Temporary tree nurseries may be set up for the transplanted tree and proposed trees at an early stage to allow small trees to grow during the construction stage. By the time when planting area becomes available, trees have been mature and required minimal pruning and suffer much less damage during transplanting. The construction programme should also allow sufficient time for root pruning and root ball preparation prior to transplanting, if necessary, and transplanting operations to be carried out in planting season.  Tree pruning such as topping, lion tailing would be prohibited as far as possible. Also, frequent keep watering would be necessary for transplanting trees. The proposed tree preservation measures during construction would be carried out and approved by the competent persons.	Landscape mitigation measures	DSD and Contractors	~	<b>V</b>		EIA, Annex 10 and Annex 18 of EIAO- TM
Table 11.8	Construction Light  Security floodlight for construction areas shall be controlled, such as equipped with adjustable shield, frosted diffusers and reflective covers, at night to avoid excessive glare to the nearby areas and residents.  Other security measures shall also be considered to minimize the visual impacts by construction light.	To reduce the night-time glare effect to the surrounding environs.	Contractors		V		EIA, Annex 10 and Annex 18 of EIAO- TM

EIA Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	to impl measur C	What requirements or standards for the measures to achieve?
Table 11.8	Dust and Erosion Control for Exposed Soil  Excavation works and demolition of existing building blocks shall be well planned with precautions to suppress dust. Exposed soil shall be covered or watered often. Areas that are expected to be left with bare soul for a long period of time after excavation shall be properly covered with suitable protective fabric. Suitable drainage shall be provided around construction sites to avoid discharge of contaminants and sediments into sensitive water-based habitats.	To minimise the disturbance to existing landscape resources and minimise the impacts on the visual amenity of the area	Contractors	√	EIA, Annex 10 and Annex 18 of EIAO- TM
Table 11.8	Reinstatement of Works Areas  The affected works areas shall be properly reinstated to the satisfaction of relevant government departments.	Landscape mitigation measures	Contractors	√	EIA, Annex 10 and Annex 18 of EIAO- TM

APPENDIX H
Summary of All Complaints Received,
Notification of Summons and Successful
Prosecutions

### Statistical Summary of Environmental Complaints

	Environmental Complaint Statistics						
Reporting Period	Frequency	Nature	Follow-up Actions				
1 August 2022 -	0	NI/A	N/A				
31 August 2022	U	N/A	N/A				
Cumulative	0	N/A	N/A				

### Statistical Summary of Environmental Summons

	Environmental Summons Statistics			
Reporting Period	Frequency	Frequency Nature Follow		
1 August 2022 -	0	NI/A	NI/A	
31 August 2022	0	N/A	N/A	
Cumulative	0	N/A	N/A	

## Statistical Summary of Environmental Prosecution

	Environmental Prosecution Statistics			
Reporting Period	Frequency	Nature	Follow-up Actions	
1 August 2022 -	0	N/A	N/A	
31 August 2022	0			
Cumulative	0	N/A	N/A	

# APPENDIX I EM&A Monitoring Schedules in the Reporting Period and the Next Reporting Period (Tentative)

	impact Wolf	torning outleasure for oppression	Aug-22	ollection, Treatment and Disp		
Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2	3	4	5	6
	24-hour TSP monitoring for A1a & A2a 1-hour TSP monitoring for A1a & A2a	Daytime Noise monitoring for N2a & N3a				
7	8	9	10	11	12	13
	24-hour TSP monitoring for A1a & A2a 1-hour TSP monitoring for A1a & A2a	Daytime Noise monitoring for N2a & N3a				
14	15	16	17	18	19	20
	24-hour TSP monitoring for A1a & A2a 1-hour TSP monitoring for A1a & A2a	Daytime Noise monitoring for N2a & N3a				
21	22	23	24	25	26	27
	24-hour TSP monitoring for A1a & A2a 1-hour TSP monitoring for A1a & A2a	Daytime Noise monitoring for N2a & N3a				
28	29	30	31			
	24-hour TSP monitoring for A1a & A2a 1-hour TSP monitoring for A1a & A2a	Daytime Noise monitoring for N2a & N3a		24-hour TSP monitoring for A1a & A2a 1-hour TSP monitoring for A1a & A2a		
	24-hour TSP monitoring for A1a & A2a 1-hour TSP monitoring for A1a & A2a	Daytime Noise monitoring for N2a & N3a				

1. Daytime Noise Monitoring (07:00-1900)

	Impact Monitoring Schedule for Upgrading of Cheung Chau Sewage Collection, Treatment and Disposal Facilities						
Sep-22							
Sun	Mon	Tue	Wed	Thu 1	Fri 2	Sat 3	
		Daytime Noise monitoring for N2a & N3a		24-hour TSP monitoring for A1a & A2a 1-hour TSP monitoring for A1a & A2a			
4	5	6	7	8	9	10	
	24-hour TSP monitoring for A1a & A2a 1-hour TSP monitoring for A1a & A2a	Daytime Noise monitoring for N2a & N3a					
11	12	13	14	15	16	17	
		24-hour TSP monitoring for Ala & A2a 1-hour TSP monitoring for Ala & A2a	Daytime Noise monitoring for N2a & N3a				
18	19	20	21	22	23	24	
	24-hour TSP monitoring for A1a & A2a 1-hour TSP monitoring for A1a & A2a	Daytime Noise monitoring for N2a & N3a					
25	26	27	28	29	30		
	24-hour TSP monitoring for A1a & A2a 1-hour TSP monitoring for A1a & A2a	Daytime Noise monitoring for N2a & N3a					
	24-hour TSP monitoring for A1a & A2a 1-hour TSP monitoring for A1a & A2a	Daytime Noise monitoring for N2a & N3a					
Domorko							

1. Daytime Noise Monitoring (07:00-1900)