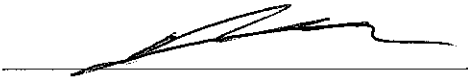


Drainage Services Department

**Agreement No. SPW 07/2019
Shek Wu Hui Effluent Polishing
Plant – Main Works Stage 1**

**Monthly EM&A Report
July 2020**

(Version 1)


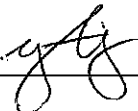
Certified By	 (Environmental Team Leader: Mr. KS Lee)
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REMARKS:

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

CINOTECH accepts no responsibility for changes made to this report by third parties

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Prepared by	Ms. Echo Hung		17 August 2020
Checked by	Mr. Eric Yan		17 August 2020

Ref.: DSDSWHS1EM00_0_0064E.20

14 August 2020

By E-mail and Fax (3922 9797)

AECOM Asia Company Limited
8/F., Grand Central Plaza, Tower 2,
138 Shatin Rural Committee Road
Sha Tin, New Territories, Hong Kong

Attention: Mr CHANG Ping Wah

Dear Mr CHANG,

**Re: Contract No. SPW 08/2019
Independent Environmental Checker for
Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1**

Monthly EM&A Report for July 2020

Reference is made to the Environmental Team's submission of Monthly EM&A Report for July 2020 (Version 1) certified by the ET Leader and provided to us via e-mail on 14 August 2020.

Please be informed that we have no adverse comments on the captioned submission. We write to verify the captioned submission in accordance with Condition 3.4 of FEP-02/474/2013.

Thank you for your attention. Please do not hesitate to contact us should you have any queries.

Yours sincerely,
For and on behalf of
Ramboll Hong Kong Limited



Manson Yeung
Independent Environmental Checker

c.c.

DSD
Cinotech

Attn.: Ms Konica Cheung
Attn.: Mr K. S. Lee

(By Fax: 3104 6420)
(By Fax: 3107 1388)

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EXECUTIVE SUMMARY**Introduction**

1. This is the 7th EM&A Report prepared by the Environmental Team, Cinotech Consultants Ltd., for Agreement No. SPW 07/2019 “Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1”. This report summarized the monitoring results and audits findings of the EM&A programme under the issued further EP No. FEP-02/474/2013 and in accordance with the Updated EM&A Manual during the reporting month of July 2020.

Summary of Main Works Undertaken and Key Measures Implemented

2. The main works undertaken during the reporting period are as follows:

Table I Summary Table for Major Site Activities in the Reporting Month

Contract No.	Contract Title	Site Activities
DC/2018/06	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - Civil Works for Sludge Treatment Facilities and 132kV Primary Substation	<ul style="list-style-type: none"> • Piling installation • Sheet piling installation • Pile loading test • ELS works - excavation
DC/2018/07	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - Civil Works for Sewage Treatment Facilities	<ul style="list-style-type: none"> • Demolition of FST • Sheet piling at inlet • Cable identification and cable diversion at AR3
DE/2018/03	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - Sidestream Treatment Facilities and E&M Works for Sludge Treatment Facilities	<ul style="list-style-type: none"> • Civil work for site office in WA1-B
DE/2018/04	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - E&M Works for Sewage Treatment Facilities	<ul style="list-style-type: none"> • Dismantle and removal of emergency generators in existing power house • Construction of contractor’s site office foundation and site installation of the contractor’s site office accommodations (MiC)

3. Implementation of the key mitigation measures during the reporting period are as follows:

Air Quality

- Stockpiles were covered by impervious sheets.

Water Quality

- Stagnant water was removed, pumped and collected in the sedimentation tank.

Summary of Exceedances, Investigation and Follow-up

4. Exceedance of Action/Limit levels during the reporting month (July 2020) and the investigation results and/or follow-up actions:

Air Quality Monitoring

- No Action/Limit Level exceedance for 1-hour TSP was recorded.
- No Action/Limit Level exceedance for 24-hour TSP was recorded.

Construction Noise Monitoring

- No Action/Limit Level exceedance for day time construction noise monitoring was recorded in the reporting month.

Ecological Monitoring

- No Action Level and no Limit Level exceedance was triggered.

Complaint Handling, Prosecution and Public Engagement

Table II Summary of Complaint/Summons/Prosecution in the Reporting Month

Event	Event Details		Follow-up/ Remedial Actions	Status/ Remarks
	Number	Brief Description		
Complaints Received	0	-	-	-
Notification of Summons and Prosecutions Received	0	-	-	-
Public Engagement Activities	0	-	-	-

Reporting Changes

5. There were no reporting changes during the reporting month.

Future Key Issues

6. The key works or activities will be anticipated in the next reporting period are as follows:

Table III Summary Table for Site Activities in the Next Reporting Period

Contract No.	Contract Title	Site Activities
DC/2018/06	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - Civil Works for Sludge Treatment Facilities and 132kV Primary Substation	<ul style="list-style-type: none"> • Piling installation • Sheet piling installation • Pile loading test • ELS works - excavation
DC/2018/07	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - Civil Works for Sewage Treatment Facilities	<ul style="list-style-type: none"> • Demolition of FST • Sheet piling at inlet • Cable identification and cable diversion at AR3
DE/2018/03	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - Sidestream Treatment Facilities and E&M Works for Sludge Treatment Facilities	<ul style="list-style-type: none"> • Civil work for site office in WA1-B • Paving work in WA3 • E&M work for site office in WA1-B
DE/2018/04	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - E&M Works for Sewage Treatment Facilities	<ul style="list-style-type: none"> • Construction of contractor's site office foundation and site installation of the contractor's site office accommodations (MiC) • Construction of temporary filtrate equalisation tank • Installation of temporary primary sludge thickener and its accessories

1 INTRODUCTION

Background

- 1.1 The Further Expansion of Shek Wu Hui Effluent Polishing Plant (SWHEPP) is a designated Project (DP) under F.1 and F.2 of Part 1, Schedule 2 of Environmental Impact Assessment Ordinance (EIAO). The “North East New Territories New Development Areas” Environmental Impact Assessment (NENT NDAs EIA) Report (Registered No.: AEIAR-175/2013) covered the assessment for the Further Expansion of SWHSTW Phase 1A, 1B and 2, and the associated Environmental Monitoring and Audit (EM&A) Manual was approved on 18 October 2013.
- 1.2 The existing Shek Wu Hui Sewage Treatment Works (SWHSTW) is operated and maintained by the Drainage Services Department (DSD). It provides secondary level treatment to sewage collected from Sheung Shui, Fanling and adjacent areas, SWHSTW was completed in two stages and expanded progressively in the past year. In 2009, the expansion of SWHSTW was completed and its design capacity was 93,000m²/day at average dry weather flow (ADWF). After the Resource Allocation Exercise 2017, the existing SWHSTW is proposed to be upgraded from secondary to tertiary treatment level as the new SWHEPP at 3 stages: Main Works Stage 1, Stage 2 and Stage 3.
- 1.3 A Further Environmental Permit (EP) (Permit No. FEP-02/474/2013) was issued on 15 February 2018 to DSD as the Permit Holder to assume the responsibility for construction and operating the SWHEPP Project up to a capacity of 190,000m³/day. The updated Environmental Monitoring and Audit (EM&A) Manual was prepared in accordance with Condition 2.3 of the Further EP. The site layout plan for the Project is shown in **Figure 1.1**.
- 1.4 Cinotech Consultants Ltd. was designated as the Environmental Team (ET) to undertake the EM&A works for “Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1” (hereinafter called the “Project”).

Purpose of the Report

- 1.5 This is the 7th Monthly EM&A Report which summarises the impact monitoring results and audit findings for the EM&A programme during the reporting period in July 2020.

Project Organizations

- 1.6 Different Parties with different levels of involvement in the project organization include:
 - Permit Holder – Drainage Services Department (DSD)
 - Supervisor Representative – AECOM Asia Company Limited (AECOM)
 - Environmental Team (ET) – Cinotech Consultants Limited (Cinotech)
 - Independent Environmental Checker (IEC) – Ramboll Hong Kong Limited (Ramboll)
 - Contractors
 - Contract No.: DC/2018/06 - Kwan Lee - Chun Wo Joint Venture (KLCWJV)
 - Contract No.: DC/2018/07 - Kwan Lee - Chun Wo Joint Venture (KLCWJV)
 - Contract No.: DE/2018/03 - Jardine Engineering Corporation Limited (JEC)
 - Contract No.: DE/2018/04 - Bestwise Envirotech Limited (Bestwise)

1.7 The key contacts of the Project are shown in **Table 1.1**.

Table 1.1 Key Project Contacts

Party	Role	Contact Person	Phone No.
DSD	Permit Holder	Ms. Konica Cheung	2594 7463
AECOM	Supervisor Representative	Mr. Henry Tai	3792 0580
Cinotech	Environmental Team	Mr. KS Lee (ETL)	2151 2091
		Ms. Betty Choi	2151 2072
Ramboll	Independent Environmental Checker	Mr. Manson Yeung	3465 2888
KLCWJV	Contractor (DC/2018/06)	Ms. Ruby Hui	6218 6408
KLCWJV	Contractor (DC/2018/07)	Mr. Jimmy Cheng	9606 5916
JEC	Contractor (DE/2018/03)	Mr. Brendan Chan	2807 4264
Bestwise	Contractor (DE/2018/04)	Mr. Albus Cheung	9731 0831

1.8 The Organizational Structure for Environmental Management is shown in **Figure 1.2**.

Construction Activities undertaken during the Reporting Month

1.9 The major site activities undertaken in the reporting month included:

Table 1.2 Summary Table for Major Site Activities in the Reporting Month

Contract No.	Contract Title	Site Activities
DC/2018/06	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - Civil Works for Sludge Treatment Facilities and 132kV Primary Substation	<ul style="list-style-type: none"> • Piling installation • Sheet piling installation • Pile loading test • ELS works - excavation
DC/2018/07	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - Civil Works for Sewage Treatment Facilities	<ul style="list-style-type: none"> • Demolition of FST • Sheet piling at inlet • Cable identification and cable diversion at AR3
DE/2018/03	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - Sidestream Treatment Facilities and E&M Works for Sludge Treatment Facilities	<ul style="list-style-type: none"> • Civil work for site office in WA1-B
DE/2018/04	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - E&M Works for Sewage Treatment Facilities	<ul style="list-style-type: none"> • Dismantle and removal of emergency generators in existing power house • Construction of contractor's site office foundation and site installation of the contractor's site office accommodations (MiC)

Summary of EM&A Requirements

- 1.10 The EM&A programme requires construction noise monitoring, air quality monitoring, water quality monitoring, ecological monitoring and environmental site audit, etc. The EM&A requirements for each parameter are described in the following sections, including:
- All monitoring parameters;
 - Action and Limit levels for all environmental parameters;
 - Event Action Plans;
 - Environmental mitigation measures, as recommended in the Project EIA Report.
- 1.11 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in Section 8 of this report.
- 1.12 This report presents the monitoring results, observations, locations, equipment, period, methodology and QA/QC procedures of the monitoring parameters of the required environmental monitoring works and audit works for the Project in June 2020.

Statues of Environmental Licensing and Permitting

- 1.13 All permits/licenses obtained for the Project are summarized in **Table 1.3**.

Table 1.3 Summary of Environmental License and Permit

Contract No.	Permit / License No.	Valid Period		Status
		From	To	
Environmental Permit (EP)				
All	FEP-02/474/2013	15 Feb 2018	N/A	Valid
Notification of Construction Works under Air Pollution Control Ordinance (APCO)				
DC/2018/06	449210 (Portion A & C)	23 Sep 2019	11 Mar 2024	Valid
DC/2018/06	449211 (WM1)	23 Sep 2019	11 Mar 2024	Valid
DC/2018/07	N/A	11 Nov 2019	31 Dec 2024	Valid
DE/2018/03	455843 (WA3)	6 May 2020	30 Sep 2020	Valid
DE/2018/03	457212 (WA1-B)	15 Jun 2020	30 Aug 2020	Valid
Billing Account for Construction Waste Disposal				
DC/2018/06	7035390	11 Oct 2019	N/A	Valid
DC/2018/07	7035985	9 Dec 2019	N/A	Valid
DE/2018/03	7035700	6 Nov 2019	N/A	Valid
DE/2018/04	703621912	2 Jan 2020	N/A	Valid
Registration of Chemical Waste Producer				
DC/2018/06	5213-624-K3371-01	14 Nov 2019	N/A	Valid
DC/2018/07	5213-624-K3371-02	6 Jan 2020	N/A	Valid
DE/2018/03	5213-624-T3861-01	14 Apr 2020	N/A	Valid
Effluent Discharge License				
DC/2018/06	WT00035431-2019 (Portion C)	27 Jul 2020	31 Jan 2025	Valid
DC/2018/06	WT00035718-2020 (Portion A)	2 Apr 2020	30 Apr 2025	Valid

Contract No.	Permit / License No.	Valid Period		Status
		From	To	
DC/2018/07	WT00035727-2020	1 Apr 2020	30 Apr 2025	Valid
Construction Noise Permit (Water Pump and Concrete Work at Portion C)				
DC/2018/06	GW-RN0301-20	10 May 2020	9 Aug 2020	Valid
Construction Noise Permit (Handtools at Portion A)				
DC/2018/06	GW-RN0380-20	16 Jun 2020	15 Aug 2020	Valid
Admission Ticket for Disposal of Special Waste				
DC/2018/07	15646	27 Apr 2020	26 Jul 2020	Expired on 26 Jul 2020

2 AIR QUALITY

Monitoring Requirement

- 2.1 According to the Updated EM&A Manual of SWHEPP, 1-hour and 24-hour Total Suspended Particulates (TSP) monitoring were conducted to monitor the air quality for this Project. For regular impact monitoring, a sampling frequency of at least once in every six days at all of the monitoring stations for 24-hour TSP monitoring. For 1-hour TSP monitoring, the sampling frequency of at least three times in every six days shall be undertaken when the highest dust impact occurs. **Appendix A** shows the established Action/Limit Levels for the environmental monitoring works.

Monitoring Locations

- 2.2 Four designated monitoring stations were selected for air quality monitoring programme. **Table 2.1** describes the air quality monitoring locations, which are also depicted in **Figure 2**.

Table 2.1 Air Quality Monitoring Locations

Monitoring Stations	Location	Location of Measurement
AM1 ⁽¹⁾	Wai Loi Tsuen	Ground Level
AM2 ⁽¹⁾	Fu Tei Au	Ground Level
AM1a ⁽²⁾	Site Boundary of the Shek Wu Hui STW (East)	Ground Level
AM2a ⁽²⁾	Site Boundary of the Shek Wu Hui STW (North)	Ground Level

Remarks: (1) For 1-hour TSP monitoring; (2) For 24-hour TSP monitoring

Monitoring Parameters and Frequency

- 2.3 **Table 2.2** summarizes the monitoring parameters, monitoring period and frequencies of impact air quality monitoring. The monitoring schedule is shown in **Appendix B**.

Table 2.2 Frequency and Parameters of Air Quality Monitoring

Monitoring Stations	Parameter	Period	Frequency
AM1 & AM2	1-hour TSP	0700 – 1900	3 times/day, once every 6 days
AM1a & AM2a	24-hour TSP	24 hours	Once every 6 days

Monitoring Equipment

- 2.4 High Volume Samplers (HVS) in compliance with the specification stipulated in the EM&A Manual, Section 2.2.2, were used to carry out 24-hour TSP monitoring. Direct reading dust meter were also used to measure 1-hour average TSP levels. The 1-hour sampling was determined by HVS to check the validity and accuracy of the results measured by direct reading method.
- 2.5 Wind data monitoring equipment was set on rooftop (about 4/F) of the SWHSTW control room building for logging wind speed and wind direction such that the wind sensors were clear of obstructions or turbulence caused by building. The wind data monitoring equipment was re-calibrated at least once every six months and the wind directions were divided into 16 sectors of 22.5 degrees each.

- 2.6 **Table 2.3** summarizes the equipment to be used for air quality monitoring. Copies of calibration certificates are attached in **Appendix C**.

Table 2.3 Air Quality Monitoring Equipment

Equipment	Model and Make	Quantity
1-hour TSP Dust Meter	Sibata Model No.: LD-5R	2
HVS Sampler	GMW Model: GS 2310	1
	TISCH Model: TE 5170	1
Calibrator	TISCH Model: TE-5025A	1
Wind Anemometer	Global Water Instrumentation WE800	1

Monitoring Methodology

1-hour TSP Monitoring

Measuring Procedures

- 2.7 The measuring procedures of the 1-hour dust meter are in accordance with the Manufacturer's Instruction Manual as follows:

(Sibata Model No.: LD-5R)

- The 1-hour dust meter is placed at least 1.3 meters above ground.
- Set POWER to "ON" and make sure that the battery level was not flash or in low level.
- Allow the instrument to stand for about 3 minutes and then the cap of the air sampling inlet has been released.
- Push the knob at MEASURE position.
- Set time/mode setting to [BG] by pushing the time setting switch. Then, start the background measurement by pushing the start/stop switch once. It will take 6 sec. to complete the background measurement.
- Push the time setting switch to change the time setting display to [MANUAL] at the bottom left of the liquid crystal display. Finally, push the start/stop switch to stop the measuring after 1 hour sampling.
- Information such as sampling date, time, count value and site condition were recorded during the monitoring period.

Maintenance/Calibration

- 2.8 The following maintenance/calibration is required for the 1-hour dust meter:

- Check and calibrate the meter by HVS to check the validity and accuracy of the results measured by direct reading method at 2-month intervals throughout all stages of the air quality monitoring.

24-hour TSP Monitoring

Instrumentation

- 2.9 High volume samplers (HVS) (TISCH Model: TE-5170) complete with appropriate sampling inlets was employed for 24-hour TSP monitoring. The sampler was composed of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complied with that required by USEPA Standard Title 40, Code of Federation Regulations Chapter 1 (Part 50). Moreover, the HVS also met all the requirements in Section 2.2 of the Annex II Specification.
- 2.10 The positioning of the HVS samplers are as follows:
- A horizontal platform with appropriate support to secure the samplers against gusty wind shall be provided;
 - No two samplers shall be placed less than 2 meter apart;
 - 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;
 - A minimum of 2 metres of separation from walls, parapets and penthouses is required for rooftop samplers;
 - A minimum of 2 metres of separation from any supporting structure, measured horizontally is required;
 - No furnace or incinerator flue is nearby;
 - Airflow around the sampler is unrestricted;
 - The sampler is more than 20 metres from the dripline;
 - Any wire fence and gate, to protect the sampler, shall not cause any obstruction during monitoring;
 - Permission must be obtained to set up the samplers and to obtain access to the monitoring stations; and
 - A secured supply of electricity is needed to operate the samplers.

Operating/analytical procedures for the operation of HVS

- 2.11 Operating/analytical procedures for the air quality monitoring are highlighted as follows:
- Prior to the commencement of the dust sampling, the flow rate of the high volume sampler was properly set (between 1.1 m³/min. and 1.4 m³/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50.
 - For TSP sampling, fiberglass filters with a collection efficiency of > 99% for particles of 0.3µm diameter were used.
 - The power supply was checked to ensure the sampler worked properly. On sampling, the sampler was operated for 5 minutes to establish thermal equilibrium before placing any filter media at the designated air monitoring station.
 - The filter holding frame was then removed by loosening the four nuts and a weighted and conditioned filter was carefully centered with the stamped number upwards, on a supporting screen.
 - The filter was aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter. Then the filter holding frame was tightened to the filter holder with swing bolts. The applied pressure should be sufficient to avoid air leakage at the edges.

- The shelter lid was closed and secured with the aluminum strip.
- The timer was then programmed. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number).
- After sampling, the filter was removed and sent to the HOKLAS laboratory (Wellab Ltd.) for weighing. The elapsed time was also recorded.
- Before weighing, all filters were equilibrated in a conditioning environment for 24 hours. The conditioning environment temperature should be between 25°C and 30°C and not vary by more than $\pm 3^\circ\text{C}$; the relative humidity (RH) should be $< 50\%$ and not vary by more than $\pm 5\%$. A convenient working RH is 40%.

Maintenance/Calibration

2.12 The following maintenance/calibration is required for the HVS:

- The high volume motors and their accessories were properly maintained. Appropriate maintenance such as routine motor brushes replacement and electrical wiring checking were made to ensure that the equipment and necessary power supply are in good working condition.
- High volume samplers were calibrated at bi-monthly intervals using TE-5025A Calibration Kit throughout all stages of the air quality monitoring.

Results and Observations

2.13 Impact air quality monitoring was conducted at four monitoring stations as scheduled. The monitoring schedule is shown in **Appendix B**.

2.14 No Action/Limit Level exceedance was recorded for all 1-hour TSP monitoring in the reporting month.

2.15 No Action/Limit Level exceedance was recorded for all 24-hour TSP monitoring in the reporting month.

2.16 The air temperature, precipitation and the relative humidity data was obtained from daily extract of Ta Kwu Ling Station in Hong Kong Observatory Climate Information Service, where the wind speed and wind direction were recorded by the installed Wind Anemometer at rooftop (about 4/F) of the SWHSTW control room building. This weather information for the reporting month is summarized in **Appendix D**.

2.17 The monitoring data and graphical presentations of 1-hour and 24-hour TSP monitoring results are shown in **Appendix E** and **Appendix F** respectively.

2.18 According to our field observations, the major dust source identified at the designated air quality monitoring stations are as follows:

Table 2.4 Major Dust Source during Air Quality Monitoring

Monitoring Stations	Major Dust Source
AM1 - Wai Loi Tsuen	Road Traffic at Sheung Shui Tung Hing Road
AM2 - Fu Tei Au	N/A
AM1a - Site Boundary of the Shek Wu Hui STW (East)	Vehicle Movement within SWHSTW
AM2a - Site Boundary of the Shek Wu Hui STW (North)	N/A

Comparison of EM&A Result with EIA Prediction

2.19 The air monitoring data was compared with the predictions in the EIA Report (as approved in 2013) as summarised in **Tables 2.5** and **Table 2.6**.

Table 2.5 Comparison of 1-hr TSP Monitoring Data with Predictions in EIA Report (As Approved in 2013)

Monitoring Stations	ASR ID	Predicted 1-hr TSP Concentration in EIA Report (as Approved in 2013), dB(A), $\mu\text{g}/\text{m}^3$	Reporting Month (July 2020), $\mu\text{g}/\text{m}^3$
AM1 - Wai Loi Tsuen	N/A	N/A ⁽¹⁾	23.4 - 52.2
AM2 - Fu Tei Au	FLN-E28	255	15.6 - 66.7

Remarks:

(1) No 1-hr TSP concentration was predicted in EIA Report (As Approved in 2013).

Table 2.6 Comparison of 24-hr TSP Monitoring Data with Predictions in EIA Report (As Approved in 2013)

Monitoring Stations	Predicted 24-hr TSP Concentration in EIA Report (as approved in 2013), dB(A), $\mu\text{g}/\text{m}^3$	Reporting Month (July 2020), $\mu\text{g}/\text{m}^3$
AM1a - Site Boundary of the Shek Wu Hui STW (East)	N/A ⁽¹⁾	23.2 - 39.7
AM2a - Site Boundary of the Shek Wu Hui STW (North)	N/A ⁽¹⁾	24.1 - 46.6

Remarks:

(1) No 24-hr TSP concentration was predicted in EIA Report (as approved in 2013).

2.20 The 1-hour TSP concentration at AM2 in the reporting month was lower than the prediction in the EIA Report (As Approved in 2013). The 1-hour TSP concentrations at AM1 as well as 24-hour TSP concentrations at AM1a and AM2a were not predicted in the EIA Report (As Approved in 2013).

3 NOISE

Monitoring Requirements

- 3.1 According to the Updated EM&A Manual, construction noise monitoring was conducted to monitor the construction noise arising from the construction activities. The regular monitoring frequency for each monitoring station shall be on a weekly basis and conduct one set of measurements between 0700 and 1900 hours on normal weekdays. **Appendix A** shows the established Action and Limit Levels for the environmental monitoring works.

Monitoring Locations

- 3.2 Noise monitoring was conducted at three designated monitoring stations in the reporting period. **Table 3.1** and **Figure 3** show the locations of these stations.

Table 3.1 Noise Monitoring Stations

Monitoring Stations	Location	Location of Measurement
NM1	Wai Loi Tsuen	Ground Level
NM2	Fu Tei Au	Ground Level
NM3	Man Kok Village	Ground Level

Monitoring Parameters, Frequency and Duration

- 3.3 **Table 3.2** summarizes the monitoring parameters, frequency and total duration of monitoring. The noise monitoring schedule is shown in **Appendix B**.

Table 3.2 Frequency and Parameters of Noise Monitoring

Monitoring Stations	Time Period	Duration	Frequency	Parameter	Measurement
NM1	0700-1900 hrs on normal weekdays	30 minutes	Once per week	L ₁₀ (30 min.) dB(A)	Free Field
NM2				L ₉₀ (30 min.) dB(A)	Free Field
NM3				L _{eq} (30 min.) dB(A)	Free Field

Monitoring Equipment

- 3.4 Integrating Sound Level Meter was used for impact noise monitoring. The meters were Type 1 sound level meter capable of giving a continuous readout of the noise level readings including equivalent continuous sound pressure level (L_{eq}) and percentile sound pressure level (L_x) that also complied with International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1) specifications. **Table 3.3** summarizes the noise monitoring equipment being used. Copies of calibration certificates are attached in **Appendix G**.

Table 3.3 Noise Monitoring Equipment

Equipment	Model and Make	Quantity
Integrating Sound Level Meter	BSWA 308	2
	SVAN 957	1
Calibrator	ST-120	1

Monitoring Methodology and QA/QC Procedure

3.5 The monitoring procedures are as follows:

- The monitoring station was normally be at a point 1m from the exterior of the sensitive receivers building façade and be at a position 1.2m above the ground.
- For free field measurement, the meter was positioned away from any nearby reflective surfaces. All records for free field noise levels were adjusted with a correction of +3 dB(A).
- The battery condition was checked to ensure the correct functioning of the meter.
- Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
 - Frequency weighting: A
 - Time weighting: Fast
 - Time measurement: 30 minutes
- Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after measurement was more than 1.0 dB, the measurement would be considered invalid and repeat of noise measurement would be required after re-calibration or repair of the equipment.
- The wind speed was frequently checked with the portable wind meter.
- At the end of the monitoring period, the L_{eq} , L_{90} and L_{10} were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.
- Noise monitoring would be cancelled in the presence of fog, rain, and wind with a steady speed exceeding 5 m/s, or wind with gusts exceeding 10 m/s. Supplementary monitoring would be provided to ensure sufficient data would be obtained.

Maintenance and Calibration

- 3.6 The microphone head of the sound level meter and calibrator were cleaned with a soft cloth at quarterly intervals.
- 3.7 The sound level meter and calibrator were checked and calibrated at yearly intervals.
- 3.8 Immediately prior to and following each noise measurement the accuracy of the sound level meter was checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements were accepted as valid only if the calibration levels from before and after the noise measurement agree to within 1.0 dB.

Results and Observations

- 3.9 No Action/Limit Level exceedance was recorded for all construction noise monitoring in the reporting month.
- 3.10 Noise monitoring results and graphical presentations are shown in **Appendix H**.

3.11 The major noise sources identified at the noise monitoring stations are shown in **Table 3.4**.

Table 3.4 Other Noise Source Identified during Noise Monitoring

Monitoring Stations	Major Noise Source
NM1	Railway Noise and Road Traffic at Sheung Shui Tung Hing Road
NM2	N/A
NM3	Road Traffic at Po Wan Road

3.12 All the Construction Noise Levels (CNLs) reported in this report were adjusted with the corresponding baseline level (i.e. Measured Leq – Baseline Leq = CNL), in order to facilitate the interpretation of the noise exceedance. The baseline noise level and the Noise Limit Level at each designated noise monitoring station are presented in **Table 3.5**.

Table 3.5 Baseline Noise Level and Noise Limit Level for Monitoring Stations

Monitoring Stations	Baseline Noise Level, dB (A) (at 0700 – 1900 hrs on normal weekdays)	Noise Limit Level, dB (A) (at 0700 – 1900 hrs on normal weekdays)
NM1	63.4	75
NM2	58.0	
NM3	63.4	

Comparison of EM&A Result with EIA Prediction

3.13 The noise monitoring data was compared with the predictions in EIA Report (as approved in 2013) as summarised in **Table 3.6**.

Table 3.6 Comparison of Noise Monitoring Data with Predictions in EIA Report (As Approved in 2013)

Monitoring Stations	NSR ID	Predicted Mitigated Construction Noise Levels in EIA Report (as Approved in 2013), dB(A)	Reporting Month (July 2020), Leq (30min) dB(A)
NM1 - Wai Loi Tsuen	N/A	N/A ⁽¹⁾	54.7 – 60.9
NM2 - Fu Tei Au	N/A	N/A ⁽¹⁾	47.8 – 67.3
NM3 – Man Kok Village	FN-18	66-75	54.5 – 60.2

Remarks:

(1) No construction noise level was predicted in EIA Report (As Approved in 2013).

3.14 The results at NM3 were lower than the range of the predicted mitigated construction noise levels in the EIA Report (As Approved in 2013). Construction noise levels at NM1 and NM2 were not predicted in the EIA Report (As Approved in 2013).

4 ECOLOGY

Monitoring Requirements

- 4.1 According to the Updated EM&A Manual, waterbird species which use rivers near the Project Site were identified and recorded. The monitoring requirement in the EM&A Manual is shown in **Table 4.1**. **Appendix A** shows the established Action/Limit Levels for ecological monitoring works.

Table 4.1 Monitoring of Measures to Minimise Disturbance to Waterbirds on Ng Tung, Sheung Yue and Shek Sheung Rivers during Construction Phase

Phase	Methodology
Construction	Weekly transect at both high and low tides to identify and enumerate all bird species utilising the river channels and identify any sources of actual or potential disturbance to birds due to construction activities throughout the construction period.

- 4.2 The monitoring should be conducted by the ET and supervised by a qualified ecologist who will be a member of the ET.

Monitoring Locations

- 4.3 Transect and point count surveys were proposed within the 500m boundary of Ng Tung River, Sheung Yue River and Shek Sheung River of the assessment area. Three transects and seven-point count locations during high and low tides were applied. These locations are shown in **Figure 4** and summarized in **Table 4.2**. The photo of each transect is provided in **Appendix J**.

Table 4.2 Ecological Monitoring Stations

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

Monitoring Parameters, Frequency and Duration

- 4.4 Monitoring surveys were conducted on a weekly basis at both high and low tides (it is considered high tide when tidal levels are above 1.5m and low tide when tidal level are below 1.5m at Tsim Bei Tsui Station). The magnitude of how much above or below 1.5m was subject to tidal conditions of that week as it varied throughout different times of the year. Nonetheless, the high and low tide relative to that week's tidal condition were taken into consideration. The ecological monitoring schedule is shown in **Appendix B**.

Monitoring Methodology

- 4.5 Transect survey was undertaken along the concerned rivers (Ng Tung River, Sheung Yue River and Shek Sheung River) adjacent to proposed construction activities. As the sensitive receivers (large waterbirds) are easily visible and the surveyor has used auxiliary equipment such as camera(s) and binoculars (magnification 7-10x). The transect route only follows one bank of these rivers.
- 4.6 At point count locations, surveyors identified and recorded bird species which were seen or heard along the river channel. For each point count, surveyors quantitatively recorded all species seen and heard for the duration of five minutes up to the distance where birds were still detectable. All avifauna along the walk transect were recorded. Noticeable behaviours (e.g. breeding behaviours such as nesting and presence of recently fledged juveniles, roosting and feeding activities, etc.) were recorded as well.
- 4.7 Ornithological nomenclature used in report should follow *The Avifauna of Hong Kong* (Carey et al. (2001)), *The Birds of Hong Kong and South China* (Viney et al. (2005)) and the most recent updated list from other sources (e.g. Hong Kong Bird Watching Society).
- 4.8 Weather conditions, tidal information at the time of the survey and other noticeable activities occurring within or in the vicinity of the survey areas (e.g. ongoing routine drainage channel maintenance works and other human activities that could create disturbances to birds) were recorded.

Analytical Methodology

- 4.9 The number and species of waterbirds utilizing the rivers fluctuate every day naturally. Therefore, the survey data were collectively analysed on a monthly basis to increase the sample size and to reduce random error on one survey day. Since occurrence of waterbirds has distinctive seasonal pattern, the construction phase data for all waterbirds and representative waterbirds were compared with the baseline data for the respective month and season. The representatives of waterbirds are listed in **Table 4.3**.

Table 4.3 Representative Waterbirds

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

- 4.10 When a decline in abundance of all or representative waterbird is identified, one-tailed Student t-test was adopted to statistically analyse whether the drop is significant. If the collected data for the reporting month fails to show no significant difference from that in the baseline phase at 95% confidence level, the action level will be triggered. Likewise, the limit level is set at 99% confidence level.
- 4.11 In addition, if important behaviours such as breeding, brooding, nesting and presence of recently fledged juveniles of species of conservation importance are observed, the Resident Engineer, Contractor and IEC should be notified immediately after the survey. The Contractor should review current construction programme and minimize disturbance due to construction activities.

Results

- 4.12 For this reporting month, the numbers of species and individuals recorded were provided in **Table 4.4**. The photo record of waterbirds can be found in **Appendix J**.

Table 4.4 Total Bird Species and Abundance in the Reporting Month

	Number of Species	Abundance
All Avifauna	35	388
Waterbirds	12	175

- 4.13 **Table 4.5** presents the abundance of representative species.

Table 4.5 Abundance of Representative Waterbirds in the Reporting Month

Species Name	Common Name	Chinese Name	Abundance
<i>Egretta garzetta</i>	Little Egret	小白鷺	66
<i>Ardea cinerea</i>	Grey Heron	蒼鷺	2
<i>Ardeola bacchus</i>	Chinese Pond Heron	池鷺	69
<i>Phalacrocorax carbo</i>	Great Cormorant	普通鷗鷺	0
<i>Ardea alba</i>	Great Egret	大白鷺	22
<i>Bubulcus coromandus</i>	Eastern Cattle Egret	牛背鷺	6

Analysis

4.14 The result of student t-tests for all waterbirds and representative waterbirds are compiled in **Table 4.6** and **4.7** respectively. Further details are provided in **Appendix I**.

Table 4.6 T-test Result for All Waterbirds in the Reporting Month

T-values of Data in Reporting Month			Confidence Level (Critical Value)	
			95% (-2.132)	99% (-3.747)
Abundance	Monthly	-2.364	✗	✓
	Seasonal	-1.772	✓	✓

Remarks

✓ = T-value falls within the confidence level, the impact monitoring data shows no significant difference to the baseline data.

✗ = T-value falls outside the confidence level, the impact monitoring data shows significant difference to the baseline data.

Table 4.7 T-test Result for Representative Waterbirds in the Reporting Month

Common Name of Representative Waterbird	T-value	Confidence Level (Critical Value)		T-value	Confidence Level (Critical Value)		Overall
	Monthly	95% (-2.132)	99% (-3.747)	Seasonal	95% (-2.132)	99% (-3.747)	
Little Egret	-3.609	✗	✓	-2.125	✓	✓	✓
Grey Heron	N/A*						
Chinese Pond Heron	-1.738	✓	✓	-0.815	✓	✓	✓
Great Cormorant	N/A*						
Great Egret	2.339	✓	✓	2.291	✓	✓	✓
Eastern Cattle Egret	-0.943	✓	✓	-3.483	✗	✓	✓

Remarks

* Great Cormorant (*Phalacrocorax carbo*) and Grey Heron (*Ardea cinerea*) were not recognised as representative waterbird species during Summer.

✓ = T-value falls within the confidence level, the impact monitoring data shows no significant difference to the baseline data.

✗ = T-value falls outside the confidence level, the impact monitoring data shows significant difference to the baseline data.

4.15 No Action and Limit Level was triggered for ecological monitoring in the reporting month.

Observations

4.16 Waterbird behaviour observed during ecological monitoring are listed below:

- Flying
- Foraging
- Soaring
- Resting

4.17 The anthropogenic activities observed during ecological monitoring are listed in **Table 4.8**.

Table 4.8 Observations during Ecological Monitoring in the Reporting Month

Location	Observations	
	Project Related	Non-project Related
T1 (PC1, PC2)	Sheet-piling, breaking works, excavation, trucks, vibration hammering	Oil stains, remote boating, mowing
T2 (PC3, PC4)	Sheet-piling, breaking works, excavation, trucks, crane, vibration hammering	N/A
PC5	N/A	Breaking works
T3 (PC6, PC7)	N/A	Mowing

5 WATER QUALITY

Monitoring Requirement

- 5.1 According to the Updated EM&A Manual, no water monitoring is required before the commencement of outfall construction at Ng Tung River.
- 5.2 Site audits were carried out on a weekly basis to monitor and audit the timely implementation of water quality mitigation measures within the site boundaries of this Project. The summaries of site audits are attached in **Appendix K**.

6 WASTE MANAGEMENT

Monitoring Requirement

- 6.1 According to the Updated EM&A Manual, waste management would be the contractor's responsibility to ensure that all wastes produced during the construction works for the Project are handled, stored and disposed of in accordance with good waste management practices, EPD's regulations and requirements. No monitoring for waste management is required for the Project. An environmental management plan (EMP) should be prepared and submitted to the Supervisor for approval. The monitoring and auditing requirements of the EMP should be followed with regard to the management of C&D material.

Waste Management Status

- 6.2 Site audits were carried out on a weekly basis to monitor and audit to ensure that proper storage, transportation and disposal practices of waste materials generated during construction activities, such as construction and demolition (C&D) materials and general refuse are being implemented. The summaries of site audits are attached in **Appendix K**.
- 6.3 The amount of wastes generated by the major site activities of this Project during the reporting month is shown in **Appendix L**.

7 LANDSCAPE AND VISUAL

Audit Requirement

- 7.1 According to the Updated EM&A Manual, site audits would be undertaken during the construction phase of the Project to check that the proposed landscape and visual mitigation measures are properly implemented and maintained as per their intended objectives. Particularly audits would be carried out during site clearance when proposed tree felling and transplantation may occur. Site inspections would be undertaken at least once every two weeks during the construction period.
- 7.2 Site audits were carried out on a weekly basis to monitor and audit the timely implementation of landscape and visual mitigation measures within the site boundaries of this Project. The summaries of site audits are attached in **Appendix K**.

8 ENVIRONMENTAL AUDIT

Site Audits

- 8.1 Site audits were carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site. The summaries of site audits are attached in **Appendix K**.
- 8.2 Site audits were conducted on 9, 14, 21 & 28 July 2020 in the reporting month. Joint site inspection with the representative of IEC was conducted on 28 July 2020. No non-compliance was observed during the site audit.

Implementation Status of Environmental Mitigation Measures

- 8.3 According to Environmental Permits, the approved EIA Report (Register No.: AEIAR-175/2013), and the Updated EM&A Manual of the Project, the mitigation measures detailed in the documents are recommended to be implemented during the construction phase. An Environmental Mitigation Implementation Schedule (EMIS) is provided in **Appendix N**.
- 8.4 The ET weekly site inspections were carried out during the reporting month and the observations and recommendations are summarized in **Tables 8.1 and 8.2**. Refer to **Appendix K** for the site inspection summary reports in the reporting month.

Table 8.1 Observations and Recommendations of Site Audit of Contract No. DC/2018/06

Parameters	Date	Observations and Recommendations	Follow-up
<i>Water Quality</i>	N/A	There was no observation in the reporting period.	N/A
<i>Air Quality</i>	14 Jul 2020	Stockpile should be covered by impervious materials to prevent dust generation at Portion C.	The condition was observed to be improved/rectified by the contractor during the audit session on 21 Jul 2020.
<i>Noise</i>	N/A	There was no observation in the reporting period.	N/A
<i>Waste / Chemical Management</i>	N/A	There was no observation in the reporting period.	N/A
<i>Ecology and Fisheries</i>	N/A	There was no observation in the reporting period.	N/A
<i>Visual and Landscape</i>	N/A	There was no observation in the reporting period.	N/A
<i>Permits /Licences</i>	N/A	There was no observation in the reporting period.	N/A

Table 8.2 Observations and Recommendations of Site Audit of Contract No. DC/2018/07

Parameters	Date	Observations and Recommendations	Follow-up
<i>Water Quality</i>	N/A	There was no observation in the reporting period.	N/A
<i>Air Quality</i>	N/A	There was no observation in the reporting period.	N/A
<i>Noise</i>	N/A	There was no observation in the reporting period.	N/A
<i>Waste / Chemical Management</i>	N/A	There was no observation in the reporting period.	N/A
<i>Ecology and Fisheries</i>	N/A	There was no observation in the reporting period.	N/A
<i>Visual and Landscape</i>	N/A	There was no observation in the reporting period.	N/A
<i>Permits /Licences</i>	N/A	There was no observation in the reporting period.	N/A

Implementation Status of Event and Action Plans

- 8.5 The Event and Action Plans for air quality, construction noise, ecological monitoring and landscape and visual are presented in **Appendix M**.

Air Quality Monitoring

- No Action/Limit Level exceedance for 1-hour TSP was recorded.
- No Action/Limit Level exceedance for 24-hour TSP was recorded.

Construction Noise Monitoring

- No documented complaint on construction noise was received; no Action Level exceedance for day time construction noise monitoring was recorded.
- No Limit Level exceedance for day time construction noise monitoring was recorded in the reporting month.

Ecological Monitoring

- No Action Level and no Limit Level was triggered.

Landscape and Visual Monitoring

- No non-conformity for landscape and visual was recorded.

9 ENVIRONMENTAL NON-CONFORMANCE

Summary of Complaint, Warning, Notification of any Summons and Successful Prosecution

- 9.1 No environmental complaints, warning, notifications of summons and successful prosecutions were received in the reporting month. The summary of environmental complaint, warning, summon and notification of successful prosecution for the Project is presented in **Appendix O**.

Summary of Exceedance

- 9.2 The summary of exceedance record in reporting month is shown in **Appendix P**.

10 FUTURE KEY ISSUES

10.1 Tentative construction programmes for the next three months are provided in **Appendix Q**.

10.2 Major site activities undertaken for the coming months are summarized in **Table 10.1**.

Table 10.1 Summary Table for Site Activities in the Next Reporting Period

Contract No.	Contract Title	Site Activities
DC/2018/06	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - Civil Works for Sludge Treatment Facilities and 132kV Primary Substation	<ul style="list-style-type: none"> • Piling installation • Sheet piling installation • Pile loading test • ELS works - excavation
DC/2018/07	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - Civil Works for Sewage Treatment Facilities	<ul style="list-style-type: none"> • Demolition of FST • Sheet piling at inlet • Cable identification and cable diversion at AR3
DE/2018/03	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - Sidestream Treatment Facilities and E&M Works for Sludge Treatment Facilities	<ul style="list-style-type: none"> • Civil work for site office in WA1-B • Paving work in WA3 • E&M work for site office in WA1-B
DE/2018/04	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - E&M Works for Sewage Treatment Facilities	<ul style="list-style-type: none"> • Construction of contractor's site office foundation and site installation of the contractor's site office accommodations (MiC) • Construction of temporary filtrate equalisation tank • Installation of temporary primary sludge thickener and its accessories

10.3 Key environmental issues in the coming months include:

- Stockpile accumulation on-site;
- Water spraying for dust generating activities and on haul road;
- Wastewater and runoff discharge from site;
- No disposition of slurry at the existing Shek Wu Hui Sewage Treatment Works;
- Coverage of open manholes to avoid dirty runoff to drainage system;
- Appropriate design of drainage system in order to facilitate storm flow;
- Control of sediment runoff after rainstorms;
- Minimization of soil excavation works during rainstorms to prevent dirty runoff flowing into surrounding waters;
- Noise from operation of the equipment, especially for excavation works and machinery onsite;
- Accumulation of general refuse and construction waste on-site;
- Proper storage of construction materials on-site; and
- Storage of chemicals/fuel and chemical waste/waste oil on-site.

Monitoring Schedule

10.4 The tentative environmental monitoring schedule for the next month is shown in **Appendix B**.

11 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

- 11.1 This is the 7th Monthly EM&A Report which presents the EM&A works undertaken during the reporting month in accordance with the Updated EM&A Manual and the requirement under EP.

Air Quality Monitoring

- 11.2 No Action/Limit Level exceedance was recorded for all 1-hour and 24-hour TSP monitoring in the reporting month.

Construction Noise Monitoring

- 11.3 No Action/Limit Level exceedance was recorded for all noise monitoring in the reporting month.

Ecology

- 11.4 No Action and Limit Level exceedance was triggered for all ecological monitoring in the reporting month.

Site Audit

- 11.5 4 ET joint weekly environmental site inspections were conducted in the reporting month.

Complaint, Notification of Summons and Successful Prosecution

- 11.6 No environmental complaints, notifications of summons and successful prosecutions were received in the reporting month.

Recommendations

- 11.7 According to the environmental audit performed in the reporting month, the following recommendations were made:

Air Quality

- Regular water spraying on haul road and dry surfaces should be applied to minimize dust generation.
- Stockpiles should be covered by impervious materials.

Water Quality

- Stagnant water should be removed and pumped through the sedimentation tank.
- Muddy water should not be discharged into the surrounding rivers.
- No slurry should be disposed of at the existing Shek Wu Hui Sewage Treatment Works.

Waste Management

- General refuse and construction waste accumulation should be avoided.
- Chemicals should be stored in drip trays properly.

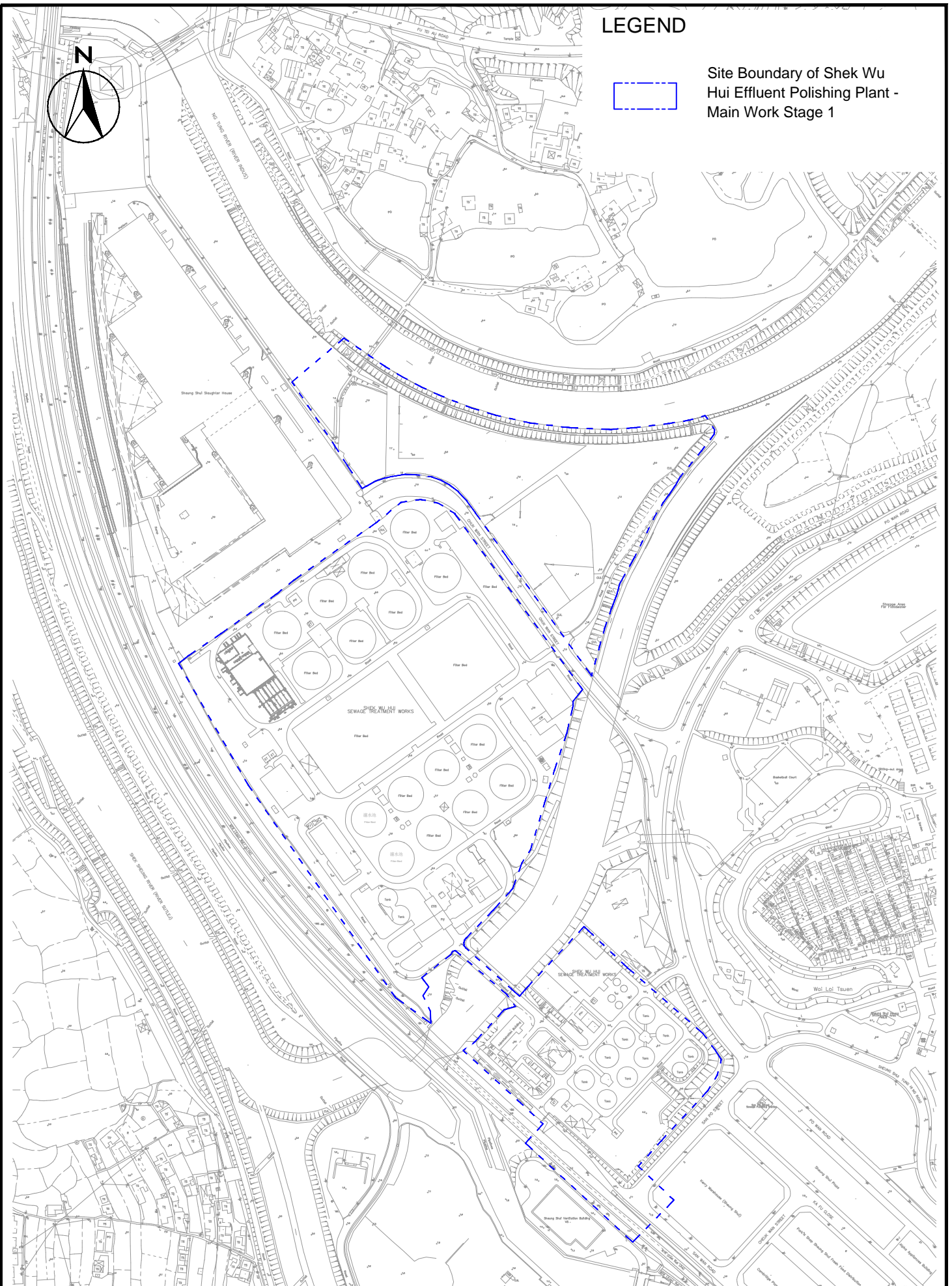
FIGURES



LEGEND



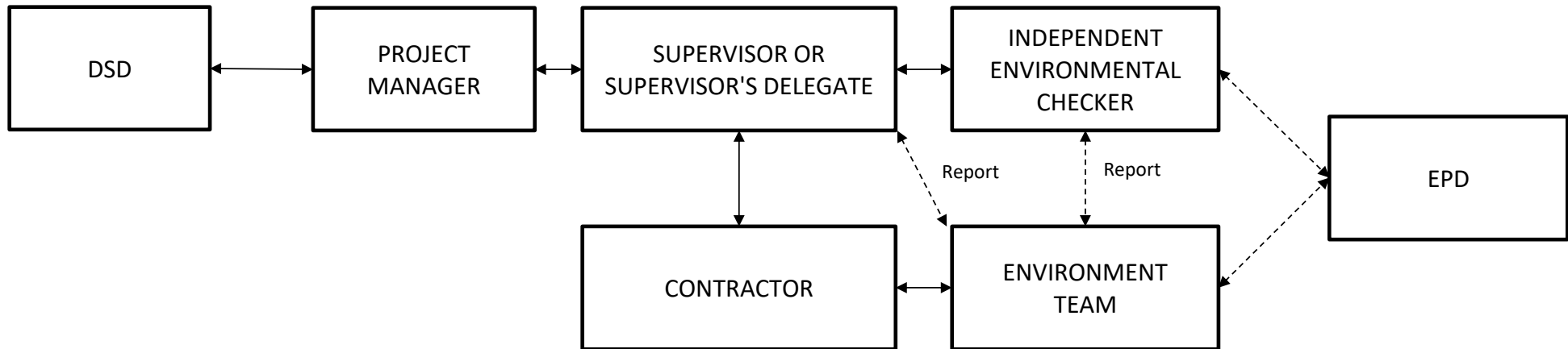
Site Boundary of Shek Wu Hui Effluent Polishing Plant - Main Work Stage 1



Agreement No. SPW07/2019
 Shek Wu Hui Effluent Polishing Plant -
 Main Works Stage 1

Site Layout

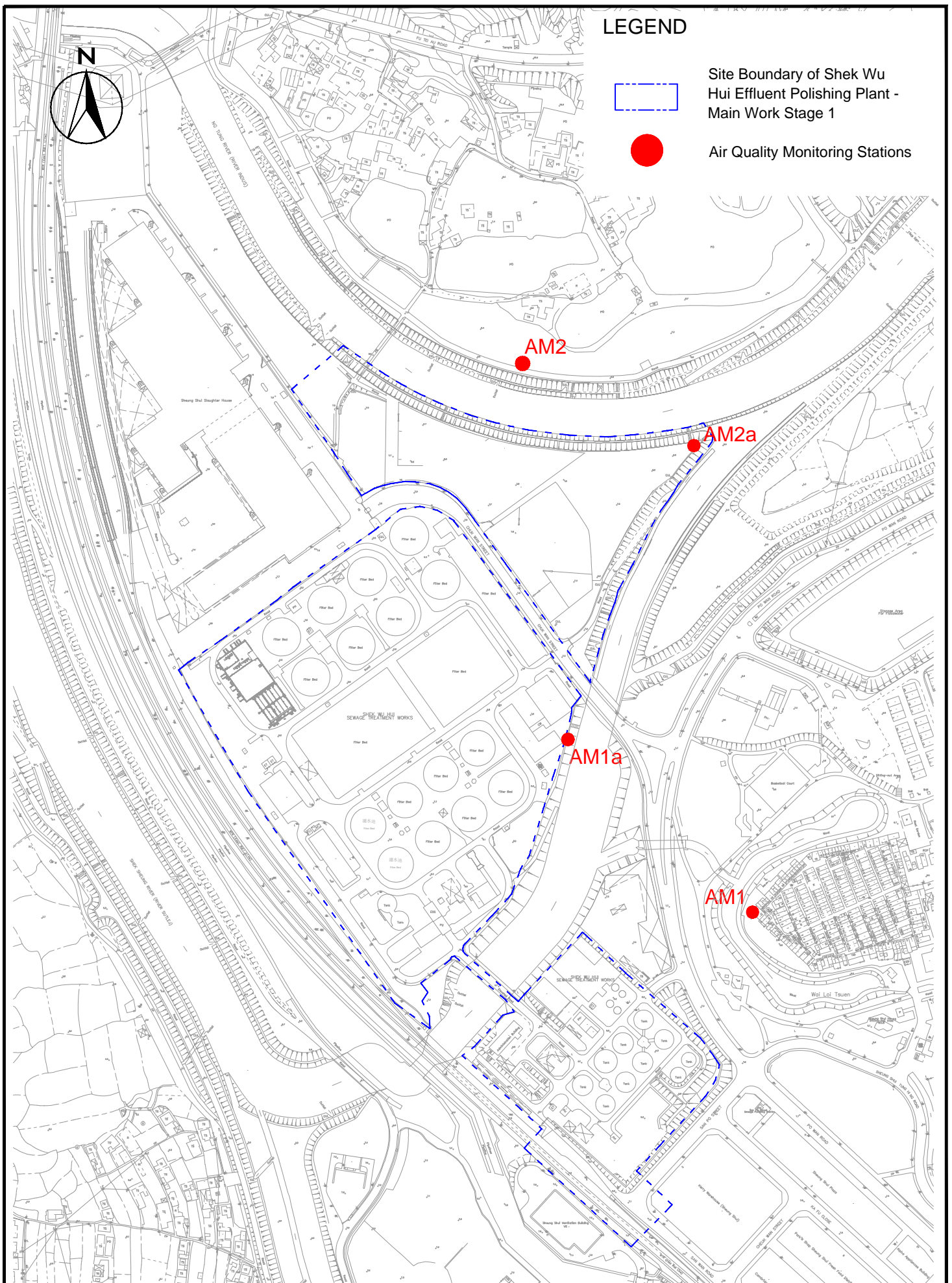
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CHECK	JM	DRAWN	SY
JOB No.	MA19019	FIGURE NO.	1.1
		REV	-



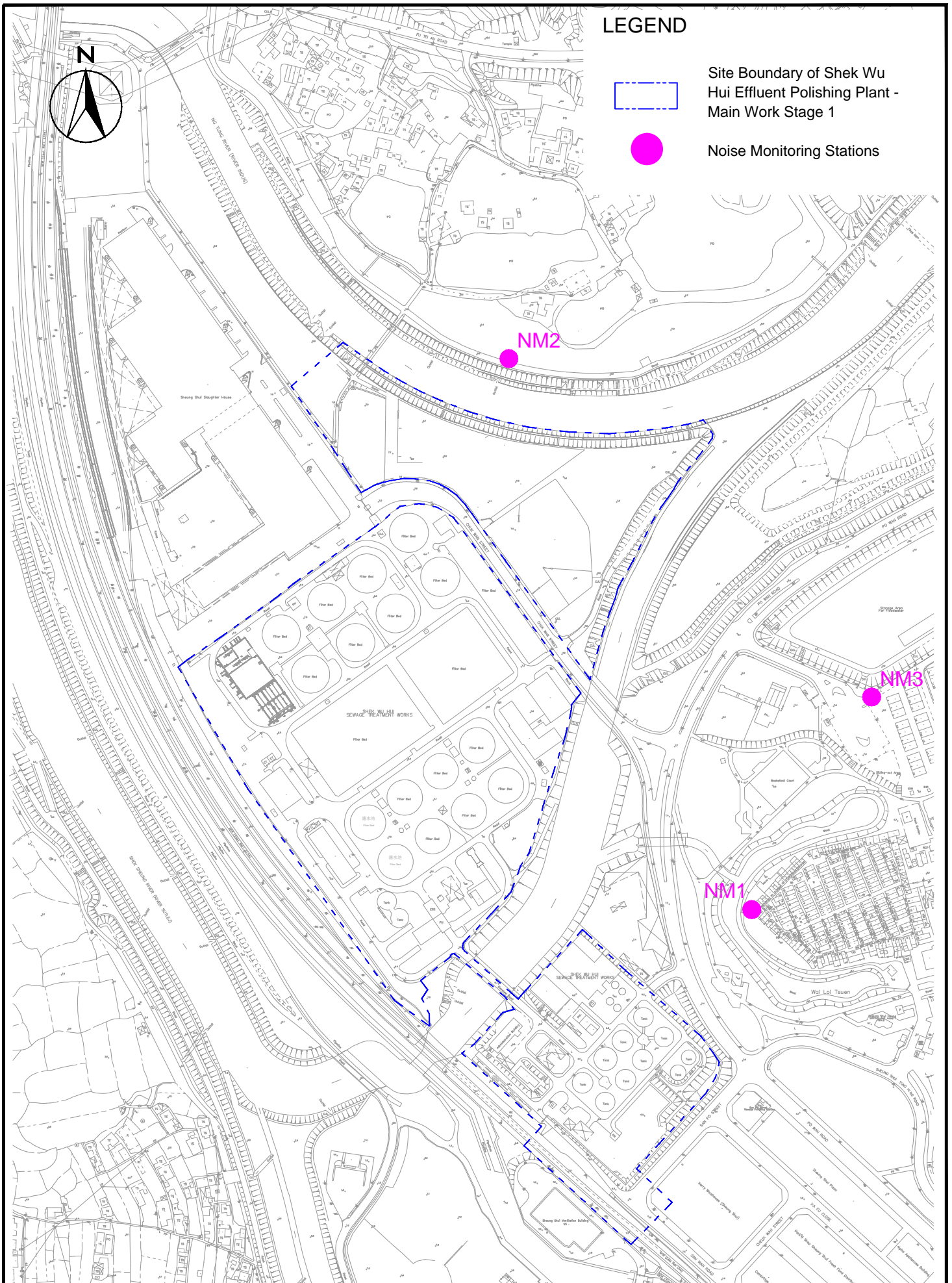
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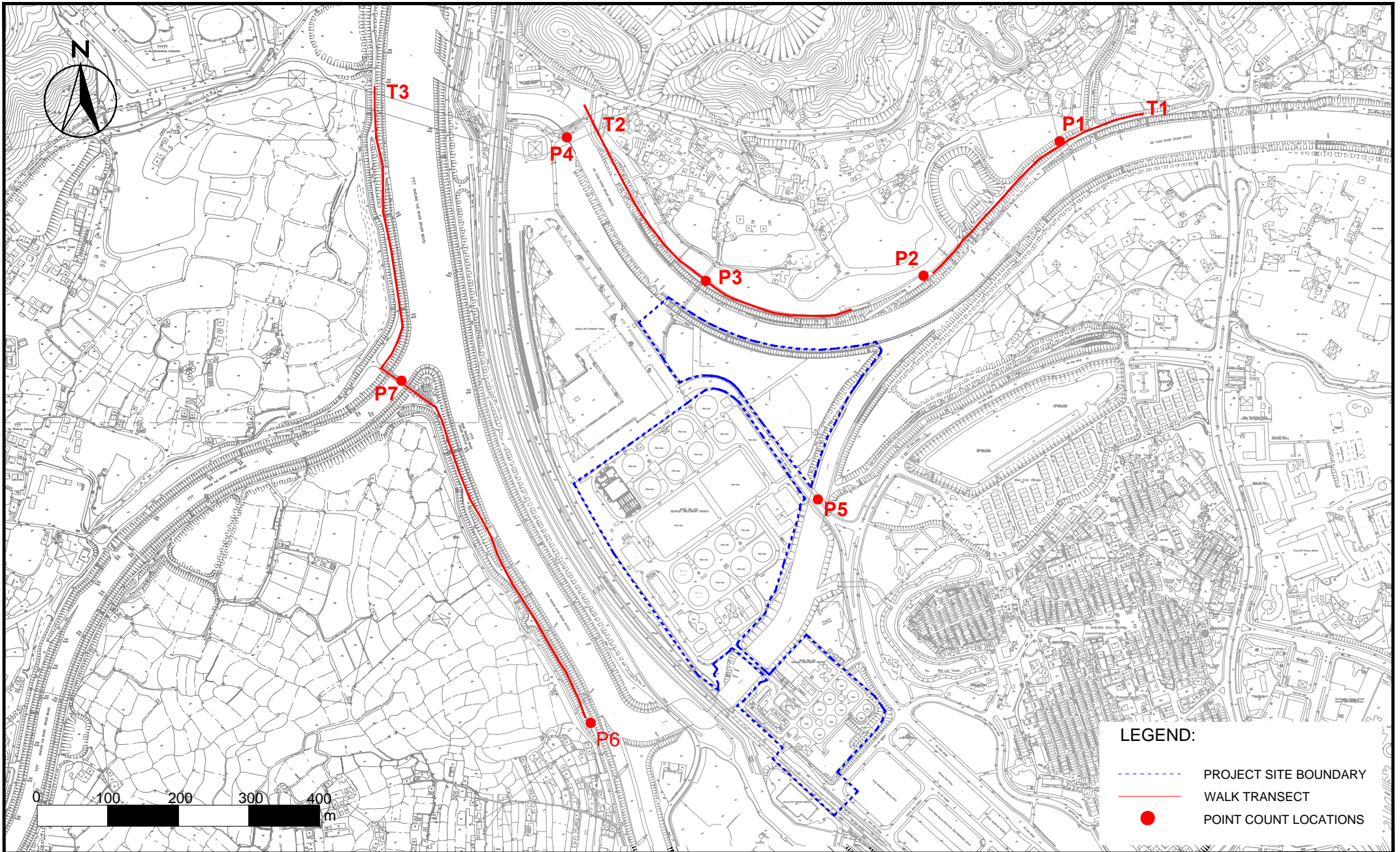
Agreement No. SPW07/2019
 Shek Wu Hui Effluent Polishing Plant- Main Works Stage 1
Project Organisation For Environmental Monitoring and Audit

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JOB NO.	MA19019	FIGURE NO.	1.2



SCALE	1:4000@A4	DATE	OCT 2019	
CHECK	JM	DRAWN	SY	
JOB No.	MA19019	FIGURE NO.	2	REV -





LEGEND:

- - - - - PROJECT SITE BOUNDARY
- WALK TRANSECT
- POINT COUNT LOCATIONS



Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1

Survey Location for Impact Ecological Monitoring

SCALE	1:7000 @ A4	DATE	Jan 2020
CHECK	BC	DRAWN	JM
JOB No.	MA19019	FIGURE NO.	4
		REV	-

APPENDIX A
ACTION AND LIMIT LEVELS

Appendix A - Action and Limit Levels

Table A-1 Action and Limit Levels for 1-hour TSP

Location	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AM1	320	500
AM2	322	

Table A-2 Action and Limit Levels for 24-hour TSP

Location	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AM1a	189	260
AM2a	187	

Table A-3 Action and Limit Levels for Noise during Construction Period

Time Period	Action Level	Limit Level
0700-1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A)*

*Remarks:

- If works are to be carried out during restricted hours, the conditions stipulated in the Construction Noise Permit (CNP) used by the Noise Control Authority have to be followed.
- Reduce to 70 dB(A) for schools and 65 dB(A) during school examination periods.

Table A-4 Action and Limit Levels of Disturbance to Waterbirds using Ng Tung, Sheung Yue and Shek Sheung Rivers during Construction Phase

Action Level	Limit Level
Decline in numbers of all waterbird species relative to numbers during Baseline Monitoring such that the Action Level response is triggered.	Decline in numbers of all waterbird species relative to numbers during baseline monitoring such that the limit level response is triggered.
Decline in numbers of any one waterbird species occurring in significant numbers* during Baseline Monitoring such that the Action Level response is triggered.	Decline in numbers of any one waterbird species occurring in significant numbers* during Baseline Monitoring such that the Limit Level response is triggered.

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

**APPENDIX B
ENVIRONMENTAL MONITORING
SCHEDULES**

Agreement No. SPW07/2019
Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1
Impact Air, Noise and Ecology Monitoring Schedule (July 2020)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1-Jul	2-Jul	3-Jul	4-Jul
					Ecology	24 hrs TSP
5-Jul	6-Jul	7-Jul	8-Jul	9-Jul	10-Jul	11-Jul
	1 hr TSP x 3 Noise	Ecology		24 hrs TSP	1 hr TSP x 3	
12-Jul	13-Jul	14-Jul	15-Jul	16-Jul	17-Jul	18-Jul
			24 hrs TSP	1 hr TSP x 3 Noise Ecology		
19-Jul	20-Jul	21-Jul	22-Jul	23-Jul	24-Jul	25-Jul
		24 hrs TSP Ecology	1 hr TSP x 3 Noise			
26-Jul	27-Jul	28-Jul	29-Jul	30-Jul	31-Jul	
	24 hrs TSP	1 hr TSP x 3 Noise			Ecology	

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

Air Quality Monitoring Station

1-hr TSP

AM1 - Wai Loi Tsuen

AM2 - Fu Tei Au

24-hr TSP

AM1a - Site Boundary of the Shek Wu Hui STW (East)

AM2a - Site Boundary of the Shek Wu Hui STW (North)

Noise Monitoring Station

NM1 - Wai Loi Tsuen

NM2 - Fu Tei Au

NM3 - Man kok Village

Agreement No. SPW07/2019
Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1
Tentative Impact Air, Noise and Ecology Monitoring Schedule (August 2020)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1-Aug 24 hrs TSP
2-Aug	3-Aug	4-Aug	5-Aug	6-Aug	7-Aug	8-Aug
	1 hr TSP x 3 Noise			24 hrs TSP Ecology	1 hr TSP x 3	
9-Aug	10-Aug	11-Aug	12-Aug	13-Aug	14-Aug	15-Aug
			24 hrs TSP	1 hr TSP x 3 Noise	Ecology	
16-Aug	17-Aug	18-Aug	19-Aug	20-Aug	21-Aug	22-Aug
		24 hrs TSP	1 hr TSP x 3 Noise	Ecology		
23-Aug	24-Aug	25-Aug	26-Aug	27-Aug	28-Aug	29-Aug
	24 hrs TSP Ecology	1 hr TSP x 3 Noise				24 hrs TSP
30-Aug	31-Aug					
	1 hr TSP x 3 Noise					

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

Air Quality Monitoring Station

1-hr TSP
 AM1 - Wai Loi Tsuen
 AM2 - Fu Tei Au

24-hr TSP

AM1a - Site Boundary of the Shek Wu Hui STW (East)
 AM2a - Site Boundary of the Shek Wu Hui STW (North)

Noise Monitoring Station

NM1 - Wai Loi Tsuen
 NM2 - Fu Tei Au
 NM3 - Man kok Village

**APPENDIX C
COPIES OF CALIBRATION
CERTIFICATES FOR AIR QUALITY
MONITORING**

Certificate of Calibration

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler


Description: Digital Dust Indicator Date of Calibration 5-Jun-20
 Manufacturer: Sibata Scientific Technology LTD. Validity of Calibration Record 5-Aug-20
 Model No.: LD-5R
 Serial No.: 972778
 Equipment No.: SA-01-07 Sensitivity 0.001 mg/m3
 High Volume Sampler No.: A-01-01A Before Sensitivity Adjustment 735 CPM
 Tisch Calibration Orifice No.: 3607 After Sensitivity Adjustment 735 CPM

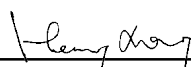
Calibration of 1 hr TSP		
Calibration Point	Laser Dust Monitor	HVS
	Mass Concentration ($\mu\text{g}/\text{m}^3$) X-axis	Mass concentration ($\mu\text{g}/\text{m}^3$) Y-axis
1	47.0	100.5
2	37.0	96.5
3	26.0	91.0
Average	36.7	96.0
By Linear Regression of Y on X Slope , mw = <u>0.4532</u> Intercept, bw = <u>79.3837</u> Correlation coefficient* = <u>0.9980</u>		
Set Correlation Factor		
Particulate Concentration by High Volume Sampler ($\mu\text{g}/\text{m}^3$)	96.0	
Particulate Concentration by Dust Meter ($\mu\text{g}/\text{m}^3$)	36.7	
Measuring time, (min)	60.0	
Set Correlation Factor , SCF		
SCF = [K=High Volume Sampler / Dust Meter, ($\mu\text{g}/\text{m}^3$)]	<u>2.6</u>	

In-house method in according to the instruction manual:

The Dust Monitor was compared with a calibrated High Volume Sampler and The result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Those filter papers are weighted by HOKLAS laboratory (Wellab Litimed)

Calibrated by: 
 Wong Shing Kwai

Approved by: 
 Henry Leung

Certificate of Calibration

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler


Description: Digital Dust Indicator Date of Calibration 5-Jun-20
 Manufacturer: Sibata Scientific Technology LTD. Validity of Calibration Record 5-Aug-20
 Model No.: LD-5R
 Serial No.: 972779
 Equipment No.: SA-01-08 Sensitivity 0.001 mg/m3
 High Volume Sampler No.: A-01-01A Before Sensitivity Adjustment 744 CPM
 Tisch Calibration Orifice No.: 3607 After Sensitivity Adjustment 744 CPM

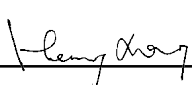
Calibration of 1 hr TSP		
Calibration Point	Laser Dust Monitor	HVS
	Mass Concentration ($\mu\text{g}/\text{m}^3$) X-axis	Mass concentration ($\mu\text{g}/\text{m}^3$) Y-axis
1	46.0	100.5
2	33.0	96.5
3	19.0	91.0
Average	32.7	96.0
By Linear Regression of Y on X Slope , mw = <u>0.3524</u> Intercept, bw = <u>84.4890</u> Correlation coefficient* = <u>0.9976</u>		
Set Correlation Factor		
Particulate Concentration by High Volume Sampler ($\mu\text{g}/\text{m}^3$)	96.0	
Particulate Concentration by Dust Meter ($\mu\text{g}/\text{m}^3$)	32.7	
Measuring time, (min)	60.0	
Set Correlation Factor , SCF		
SCF = [K=High Volume Sampler / Dust Meter, ($\mu\text{g}/\text{m}^3$)]	<u>2.9</u>	

In-house method in according to the instruction manual:

The Dust Monitor was compared with a calibrated High Volume Sampler and The result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Those filter papers are weighted by HOKLAS laboratory (Wellab Litimed)

Calibrated by: 
 Wong Shing Kwai

Approved by: 
 Henry Leung



Certificate of Calibration

Calibration Certification Information			
Cal. Date: January 17, 2020	Rootsmeter S/N: 438320	Ta: 295 °K	
Operator: Jim Tisch		Pa: 744.2 mm Hg	
Calibration Model #: TE-5025A	Calibrator S/N: 3746		

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4340	3.2	2.00
2	3	4	1	1.0180	6.4	4.00
3	5	6	1	0.9080	7.9	5.00
4	7	8	1	0.8700	8.7	5.50
5	9	10	1	0.7150	12.6	8.00

Data Tabulation					
Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H \left(\frac{Pa}{Pstd} \right) \left(\frac{Tstd}{Ta} \right)}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H \left(\frac{Ta}{Pa} \right)}$ (y-axis)
0.9849	0.6868	1.4066	0.9957	0.6944	0.8904
0.9807	0.9633	1.9892	0.9914	0.9739	1.2592
0.9787	1.0779	2.2240	0.9894	1.0896	1.4078
0.9776	1.1237	2.3325	0.9883	1.1360	1.4765
0.9724	1.3601	2.8131	0.9831	1.3749	1.7808
QSTD	m=	2.09221	QA	m=	1.31010
	b=	-0.02779		b=	-0.01759
	r=	0.99994		r=	0.99994

Calculations	
Vstd= $\Delta Vol \left(\frac{Pa - \Delta P}{Pstd} \right) \left(\frac{Tstd}{Ta} \right)$	Va= $\Delta Vol \left(\frac{Pa - \Delta P}{Pa} \right)$
Qstd= $Vstd / \Delta Time$	Qa= $Va / \Delta Time$
For subsequent flow rate calculations:	
Qstd= $1/m \left(\left(\sqrt{\Delta H \left(\frac{Pa}{Pstd} \right) \left(\frac{Tstd}{Ta} \right)} \right) - b \right)$	Qa= $1/m \left(\left(\sqrt{\Delta H \left(\frac{Ta}{Pa} \right)} \right) - b \right)$

Standard Conditions	
Tstd:	298.15 °K
Pstd:	760 mm Hg
Key	
ΔH: calibrator manometer reading (in H2O)	
ΔP: rootsmeter manometer reading (mm Hg)	
Ta: actual absolute temperature (°K)	
Pa: actual barometric 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

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET



File No. MA19019/17/0004

Project No. AM1a - Site boundary of the Shek Wu Hui STW (East)
 Date: 5-May-20 Next Due Date: 5-Jul-20 Operator: SK
 Equipment No.: A-01-17 Model No.: GS2310 Serial No. 3460

Ambient Condition			
Temperature, Ta (K)	<u>300.9</u>	Pressure, Pa (mmHg)	<u>756.5</u>

Orifice Transfer Standard Information					
Serial No.	<u>3746</u>	Slope, mc	<u>0.0592</u>	Intercept, bc	<u>-0.02740</u>
Last Calibration Date:	<u>17-Jan-20</u>	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ $Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			
Next Calibration Date:	<u>17-Jan-21</u>				

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	<u>15.8</u>	3.95	67.13	<u>10.3</u>	3.19
2	<u>12.4</u>	3.50	59.52	<u>7.7</u>	2.76
3	<u>9.1</u>	3.00	51.06	<u>6.1</u>	2.45
4	<u>5.3</u>	2.29	39.07	<u>3.9</u>	1.96
5	<u>3.1</u>	1.75	29.99	<u>2.3</u>	1.51

By Linear Regression of Y on X

Slope, mw = 0.0438 Intercept, bw = 0.2121
 Correlation coefficient* = 0.9980

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; W = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 4.45

Remarks: _____

Conducted by: SK Wong Signature: [Signature] Date: 5 May 2020
 Checked by: Henry Leung Signature: [Signature] Date: 5 May 2020

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET



File No. MA19019/17/0005

Project No. AM1a - Site boundary of the Shek Wu Hui STW (East)
 Date: 6-Jul-20 Next Due Date: 6-Sep-20 Operator: SK
 Equipment No.: A-01-17 Model No.: GS2310 Serial No. 3460

Ambient Condition			
Temperature, Ta (K)	303	Pressure, Pa (mmHg)	755.4

Orifice Transfer Standard Information					
Serial No.	3746	Slope, mc	0.0592	Intercept, bc	-0.02740
Last Calibration Date:	17-Jan-20	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ $Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			
Next Calibration Date:	17-Jan-21				

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	16.0	3.95	67.27	12.0	3.42
2	12.1	3.44	58.56	8.8	2.93
3	9.3	3.02	51.39	6.8	2.58
4	6.8	2.58	44.01	4.4	2.07
5	3.2	1.77	30.34	2.2	1.47

By Linear Regression of Y on X

Slope, mw = 0.0536 Intercept, bw = -0.2040
 Correlation coefficient* = 0.9979

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation


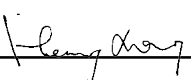
From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; W = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 4.52

Remarks: _____

Conducted by: SK Wong Signature:  Date: 06 July 2020
 Checked by: Henry Leung Signature:  Date: 06 July 2020

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET



File No. MA19019/24/0004

Project No. AM2a - Site Boundary of the Shek Wu Hui STW (North)
 Date: 5-May-20 Next Due Date: 5-Jul-20 Operator: SK
 Equipment No.: A-01-24 Model No.: TE 5170 Serial No. 1659

Ambient Condition			
Temperature, Ta (K)	300.9	Pressure, Pa (mmHg)	756.5

Orifice Transfer Standard Information					
Serial No.	3746	Slope, mc	0.0592	Intercept, bc	-0.02740
Last Calibration Date:	17-Jan-20	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ $Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			
Next Calibration Date:	17-Jan-21				

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	15.9	3.96	67.34	10.1	3.16
2	12.4	3.50	59.52	7.8	2.77
3	9.2	3.01	51.33	6.1	2.45
4	5.6	2.35	40.15	4.3	2.06
5	3.3	1.80	30.93	2.8	1.66

By Linear Regression of Y on X

Slope, mw = 0.0400 Intercept, bw = 0.4241
 Correlation coefficient* = 0.9986

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; W = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 4.67

Remarks: _____

Conducted by: SK Wong Signature: [Signature] Date: 5 May 2020

Checked by: Henry Leung Signature: [Signature] Date: 5 May 2020

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET



File No. MA19019/24/0005

Project No. AM2a - Site Boundary of the Shek Wu Hui STW (North)
 Date: 6-Jul-20 Next Due Date: 6-Sep-20 Operator: SK
 Equipment No.: A-01-24 Model No.: TE 5170 Serial No. 1659

Ambient Condition			
Temperature, Ta (K)	303	Pressure, Pa (mmHg)	755.4

Orifice Transfer Standard Information					
Serial No.	3746	Slope, mc	0.0592	Intercept, bc	-0.02740
Last Calibration Date:	17-Jan-20	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ $Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			
Next Calibration Date:	17-Jan-21				

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X-axis	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	16.2	3.98	67.68	10.2	3.16
2	12.6	3.51	59.75	7.9	2.78
3	9.4	3.03	51.67	6.2	2.46
4	6.4	2.50	42.71	4.4	2.07
5	3.4	1.82	31.26	2.9	1.68

By Linear Regression of Y on X

Slope, mw = 0.0405 Intercept, bw = 0.3829
 Correlation coefficient* = 0.9983

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; W = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 4.61

Remarks: _____

Conducted by: SK Wong Signature: Date: 06 July 2020

Checked by: Henry Leung Signature: Date: 06 July 2020

Certificate of Calibration - Wind Monitoring Station

Description: BM3 - Control Room at SWHSTW
 Manufacturer: Global Water Instrumentation
 Model No.: WE800 Weather Station
 Serial No.: 1517001963
 Equipment No.: SA-03-01
 Date of Calibration: 29-Apr-2020
 Next Due Date: 29-Oct-2020

1. Performance check of Wind Speed

Wind Speed, m/s		Difference D (m/s)
Wind Speed Reading (V1)	Anemometer Value (V1)	$D = V1 - V2$
0.0	0.0	0.0
1.2	1.2	0.0
2.0	2.1	-0.1
3.8	3.8	0.0


2. Performance check of Wind Direction

Wind Direction (°)		Difference D (°)
Wind Direction Reading (V1)	Marine Compass Value (V1)	$D = W1 - W2$
0	0	0.0
90	90	0.0
180	180	0.0
270	270	0.0

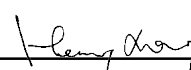
Test Specification:

1. Performance Wind Speed Test - The wind meter was on-site calibrated against the anemometer
2. Performance Wind Direction Test - The wind meter was on-site calibrated against the marine compass at four direction

Calibrated by: _____


Wong Shing Kwai

Approved by: _____


Henry Leung

APPENDIX D
WEATHER INFORMATION

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

I. General Information from Hong Kong Observatory

Date	Mean Air Temperature (°C)	Mean Relative Humidity (%)	Precipitation (mm)
1-Jul-20	30.2	78	1.1
2-Jul-20	30.2	79	9.3
3-Jul-20	29.2	84	29.5
4-Jul-20	29.8	80	8.3
5-Jul-20	30.0	77	1.3
6-Jul-20	30.1	76	4.1
7-Jul-20	30.1	77	0.7
8-Jul-20	30.0	79	0.6
9-Jul-20	30.1	79	Trace
10-Jul-20	30.3	75	0.0
11-Jul-20	30.4	76	0.0
12-Jul-20	30.4	75	0.0
13-Jul-20	30.5	74	0.0
14-Jul-20	30.6	75	0.0
15-Jul-20	30.5	74	0.0
16-Jul-20	30.4	76	2.4
17-Jul-20	30.3	75	2.5
18-Jul-20	30.4	75	2.2
19-Jul-20	30.3	75	0.0
20-Jul-20	29.9	77	3.1
21-Jul-20	30.4	76	0.0
22-Jul-20	30.0	79	2.5
23-Jul-20	31.0	73	Trace
24-Jul-20	30.8	74	0.0
25-Jul-20	30.7	75	0.0
26-Jul-20	30.8	74	Trace
27-Jul-20	30.5	75	2.3
28-Jul-20	30.8	73	3.0
29-Jul-20	30.5	77	2.6
30-Jul-20	30.2	75	13.3
31-Jul-20	27.9	84	36.6

* The above information was extracted from the daily extract of Ta Kwu Ling Station in Hong Kong Observatory Climate Information Service.

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
1-Jul-20	0:00	75.7	0.1
1-Jul-20	1:00	63.7	0.1
1-Jul-20	2:00	71.1	0.1
1-Jul-20	3:00	88.2	0.1
1-Jul-20	4:00	61.5	0.1
1-Jul-20	5:00	69.9	0.1
1-Jul-20	6:00	25.6	0.1
1-Jul-20	7:00	83.2	0.1
1-Jul-20	8:00	188.7	0.1
1-Jul-20	9:00	59.1	0.1
1-Jul-20	10:00	285.4	0.1
1-Jul-20	11:00	269.9	0.1
1-Jul-20	12:00	239.1	0.2
1-Jul-20	13:00	97.1	0.1
1-Jul-20	14:00	108.9	0.1
1-Jul-20	15:00	90.6	0.1
1-Jul-20	16:00	82.9	0.1
1-Jul-20	17:00	71.4	0.1
1-Jul-20	18:00	94.3	0.1
1-Jul-20	19:00	57.8	0.3
1-Jul-20	20:00	87.8	0.1
1-Jul-20	21:00	37.2	0.1
1-Jul-20	22:00	62.9	0.1
1-Jul-20	23:00	173.1	0.1
2-Jul-20	0:00	62.6	0.1
2-Jul-20	1:00	78.3	0.1
2-Jul-20	2:00	108.5	0.1
2-Jul-20	3:00	23.6	0.1
2-Jul-20	4:00	68.1	0.1
2-Jul-20	5:00	65.1	0.1
2-Jul-20	6:00	80.7	0.1
2-Jul-20	7:00	89.6	0.1
2-Jul-20	8:00	292.6	0.1
2-Jul-20	9:00	279.0	0.1
2-Jul-20	10:00	142.0	0.1
2-Jul-20	11:00	201.4	0.1

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
2-Jul-20	12:00	214.5	0.2
2-Jul-20	13:00	221.0	2.7
2-Jul-20	14:00	186.5	0.7
2-Jul-20	15:00	228.2	1.4
2-Jul-20	16:00	240.6	1.7
2-Jul-20	17:00	198.2	0.5
2-Jul-20	18:00	226.3	0.5
2-Jul-20	19:00	216.7	0.1
2-Jul-20	20:00	207.0	0.1
2-Jul-20	21:00	207.2	0.1
2-Jul-20	22:00	62.5	0.1
2-Jul-20	23:00	214.7	0.1
3-Jul-20	0:00	356.4	0.1
3-Jul-20	1:00	357.3	0.1
3-Jul-20	2:00	204.3	0.1
3-Jul-20	3:00	233.8	0.1
3-Jul-20	4:00	42.8	0.1
3-Jul-20	5:00	280.6	0.1
3-Jul-20	6:00	55.1	0.1
3-Jul-20	7:00	26.8	0.1
3-Jul-20	8:00	10.9	0.1
3-Jul-20	9:00	247.3	0.1
3-Jul-20	10:00	188.0	0.1
3-Jul-20	11:00	171.2	0.1
3-Jul-20	12:00	199.0	0.2
3-Jul-20	13:00	239.8	1.4
3-Jul-20	14:00	181.0	0.3
3-Jul-20	15:00	165.0	0.1
3-Jul-20	16:00	105.7	0.1
3-Jul-20	17:00	53.7	0.1
3-Jul-20	18:00	90.5	0.1
3-Jul-20	19:00	58.9	0.1
3-Jul-20	20:00	20.2	0.1
3-Jul-20	21:00	96.0	0.1
3-Jul-20	22:00	73.9	0.1
3-Jul-20	23:00	67.5	0.1

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
4-Jul-20	0:00	79.1	0.1
4-Jul-20	1:00	59.4	0.1
4-Jul-20	2:00	61.0	0.1
4-Jul-20	3:00	146.2	0.1
4-Jul-20	4:00	21.6	0.1
4-Jul-20	5:00	26.5	0.1
4-Jul-20	6:00	72.6	0.1
4-Jul-20	7:00	83.3	0.1
4-Jul-20	8:00	249.4	0.1
4-Jul-20	9:00	210.3	0.7
4-Jul-20	10:00	215.3	2.1
4-Jul-20	11:00	250.2	3.8
4-Jul-20	12:00	237.7	1.5
4-Jul-20	13:00	197.3	0.4
4-Jul-20	14:00	309.6	5.8
4-Jul-20	15:00	210.2	0.5
4-Jul-20	16:00	200.9	0.2
4-Jul-20	17:00	251.3	0.8
4-Jul-20	18:00	217.8	0.2
4-Jul-20	19:00	242.4	0.2
4-Jul-20	20:00	194.9	0.1
4-Jul-20	21:00	187.9	0.1
4-Jul-20	22:00	200.4	0.1
4-Jul-20	23:00	243.4	0.2
5-Jul-20	0:00	213.5	0.1
5-Jul-20	1:00	209.3	0.1
5-Jul-20	2:00	168.0	0.1
5-Jul-20	3:00	85.0	0.1
5-Jul-20	4:00	74.7	0.1
5-Jul-20	5:00	82.7	0.1
5-Jul-20	6:00	52.1	0.1
5-Jul-20	7:00	54.6	0.1
5-Jul-20	8:00	211.7	3.6
5-Jul-20	9:00	158.0	0.3
5-Jul-20	10:00	212.7	1.3
5-Jul-20	11:00	217.0	0.7

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
5-Jul-20	12:00	245.0	2.4
5-Jul-20	13:00	185.5	1.1
5-Jul-20	14:00	330.7	3.9
5-Jul-20	15:00	215.0	2.3
5-Jul-20	16:00	222.8	1.2
5-Jul-20	17:00	220.9	0.3
5-Jul-20	18:00	217.0	0.9
5-Jul-20	19:00	217.7	0.1
5-Jul-20	20:00	218.5	0.1
5-Jul-20	21:00	134.7	0.1
5-Jul-20	22:00	200.3	0.1
5-Jul-20	23:00	236.9	0.3
6-Jul-20	0:00	209.4	0.2
6-Jul-20	1:00	252.0	0.4
6-Jul-20	2:00	222.5	1.5
6-Jul-20	3:00	206.8	0.1
6-Jul-20	4:00	198.1	0.1
6-Jul-20	5:00	248.6	0.1
6-Jul-20	6:00	73.6	0.1
6-Jul-20	7:00	265.8	0.2
6-Jul-20	8:00	165.4	0.1
6-Jul-20	9:00	287.1	0.4
6-Jul-20	10:00	194.9	0.1
6-Jul-20	11:00	234.3	0.8
6-Jul-20	12:00	226.3	1.7
6-Jul-20	13:00	225.5	0.1
6-Jul-20	14:00	229.1	1.0
6-Jul-20	15:00	228.4	3.2
6-Jul-20	16:00	229.4	3.8
6-Jul-20	17:00	242.0	0.4
6-Jul-20	18:00	228.0	0.2
6-Jul-20	19:00	186.1	0.2
6-Jul-20	20:00	210.0	0.1
6-Jul-20	21:00	225.8	0.1
6-Jul-20	22:00	233.7	0.2
6-Jul-20	23:00	257.1	0.1

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
7-Jul-20	0:00	199.5	0.2
7-Jul-20	1:00	194.7	0.1
7-Jul-20	2:00	228.4	1.4
7-Jul-20	3:00	217.8	0.1
7-Jul-20	4:00	196.9	0.1
7-Jul-20	5:00	217.0	0.1
7-Jul-20	6:00	160.2	0.1
7-Jul-20	7:00	196.5	0.4
7-Jul-20	8:00	233.8	1.2
7-Jul-20	9:00	191.4	0.1
7-Jul-20	10:00	199.9	0.2
7-Jul-20	11:00	269.0	0.7
7-Jul-20	12:00	216.0	1.4
7-Jul-20	13:00	44.8	0.1
7-Jul-20	14:00	213.4	0.5
7-Jul-20	15:00	205.3	1.5
7-Jul-20	16:00	197.8	0.2
7-Jul-20	17:00	203.0	0.2
7-Jul-20	18:00	235.0	0.2
7-Jul-20	19:00	233.1	0.1
7-Jul-20	20:00	205.3	0.1
7-Jul-20	21:00	246.9	0.2
7-Jul-20	22:00	249.3	0.2
7-Jul-20	23:00	247.8	0.1
8-Jul-20	0:00	202.5	0.4
8-Jul-20	1:00	205.4	0.1
8-Jul-20	2:00	188.1	0.1
8-Jul-20	3:00	223.5	0.1
8-Jul-20	4:00	235.5	0.1
8-Jul-20	5:00	247.1	0.1
8-Jul-20	6:00	0.1	0.1
8-Jul-20	7:00	209.5	0.1
8-Jul-20	8:00	228.9	0.5
8-Jul-20	9:00	280.9	3.0
8-Jul-20	10:00	233.6	4.3
8-Jul-20	11:00	203.9	1.7

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
8-Jul-20	12:00	218.2	0.2
8-Jul-20	13:00	250.3	6.8
8-Jul-20	14:00	231.7	5.1
8-Jul-20	15:00	258.1	1.6
8-Jul-20	16:00	241.6	1.4
8-Jul-20	17:00	220.6	0.3
8-Jul-20	18:00	260.0	0.1
8-Jul-20	19:00	211.6	2.1
8-Jul-20	20:00	250.3	0.2
8-Jul-20	21:00	245.2	0.8
8-Jul-20	22:00	263.0	0.3
8-Jul-20	23:00	207.5	0.1
9-Jul-20	0:00	228.4	0.6
9-Jul-20	1:00	218.7	0.8
9-Jul-20	2:00	224.9	0.1
9-Jul-20	3:00	233.2	0.9
9-Jul-20	4:00	191.1	0.9
9-Jul-20	5:00	257.0	0.2
9-Jul-20	6:00	228.1	1.1
9-Jul-20	7:00	260.2	0.3
9-Jul-20	8:00	204.5	0.6
9-Jul-20	9:00	258.4	1.2
9-Jul-20	10:00	267.9	0.5
9-Jul-20	11:00	204.7	2.5
9-Jul-20	12:00	250.9	1.7
9-Jul-20	13:00	218.0	1.7
9-Jul-20	14:00	223.2	5.4
9-Jul-20	15:00	225.7	1.1
9-Jul-20	16:00	184.5	0.2
9-Jul-20	17:00	205.4	0.4
9-Jul-20	18:00	242.2	0.8
9-Jul-20	19:00	209.4	0.4
9-Jul-20	20:00	233.8	0.2
9-Jul-20	21:00	256.7	0.6
9-Jul-20	22:00	224.1	0.4
9-Jul-20	23:00	225.5	1.7

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
10-Jul-20	0:00	216.4	0.3
10-Jul-20	1:00	212.0	0.2
10-Jul-20	2:00	224.8	0.2
10-Jul-20	3:00	154.5	0.1
10-Jul-20	4:00	210.6	0.1
10-Jul-20	5:00	178.3	0.1
10-Jul-20	6:00	176.9	0.2
10-Jul-20	7:00	210.0	0.3
10-Jul-20	8:00	177.5	0.6
10-Jul-20	9:00	163.2	0.4
10-Jul-20	10:00	181.6	0.3
10-Jul-20	11:00	250.7	4.7
10-Jul-20	12:00	150.5	4.5
10-Jul-20	13:00	224.1	0.8
10-Jul-20	14:00	192.2	3.3
10-Jul-20	15:00	228.1	0.2
10-Jul-20	16:00	211.7	0.2
10-Jul-20	17:00	218.9	0.3
10-Jul-20	18:00	200.7	0.3
10-Jul-20	19:00	183.3	0.6
10-Jul-20	20:00	192.8	0.2
10-Jul-20	21:00	197.8	0.1
10-Jul-20	22:00	221.0	0.1
10-Jul-20	23:00	188.9	0.7
11-Jul-20	0:00	237.7	0.6
11-Jul-20	1:00	181.5	0.7
11-Jul-20	2:00	230.6	0.1
11-Jul-20	3:00	202.7	0.1
11-Jul-20	4:00	179.3	2.4
11-Jul-20	5:00	188.3	0.1
11-Jul-20	6:00	238.4	0.1
11-Jul-20	7:00	230.0	0.6
11-Jul-20	8:00	186.9	0.3
11-Jul-20	9:00	236.9	1.8
11-Jul-20	10:00	202.9	1.4
11-Jul-20	11:00	172.5	0.9

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
11-Jul-20	12:00	210.8	1.4
11-Jul-20	13:00	220.8	0.3
11-Jul-20	14:00	205.0	3.0
11-Jul-20	15:00	189.3	0.8
11-Jul-20	16:00	202.7	1.9
11-Jul-20	17:00	181.5	2.4
11-Jul-20	18:00	223.5	1.3
11-Jul-20	19:00	198.9	0.3
11-Jul-20	20:00	275.6	0.1
11-Jul-20	21:00	203.6	0.1
11-Jul-20	22:00	245.2	0.1
11-Jul-20	23:00	195.6	0.1
12-Jul-20	0:00	204.7	0.1
12-Jul-20	1:00	197.1	0.1
12-Jul-20	2:00	185.2	0.1
12-Jul-20	3:00	181.0	0.1
12-Jul-20	4:00	197.6	0.1
12-Jul-20	5:00	214.2	0.2
12-Jul-20	6:00	219.2	0.2
12-Jul-20	7:00	190.8	0.3
12-Jul-20	8:00	209.0	0.5
12-Jul-20	9:00	206.0	1.9
12-Jul-20	10:00	202.0	1.0
12-Jul-20	11:00	195.3	0.6
12-Jul-20	12:00	212.4	0.1
12-Jul-20	13:00	276.1	0.7
12-Jul-20	14:00	188.0	0.5
12-Jul-20	15:00	215.3	1.6
12-Jul-20	16:00	242.1	1.4
12-Jul-20	17:00	216.7	1.4
12-Jul-20	18:00	222.9	0.5
12-Jul-20	19:00	217.0	0.1
12-Jul-20	20:00	223.7	0.1
12-Jul-20	21:00	217.3	0.1
12-Jul-20	22:00	248.5	0.1
12-Jul-20	23:00	53.4	0.1

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
13-Jul-20	0:00	247.1	0.1
13-Jul-20	1:00	63.1	0.1
13-Jul-20	2:00	39.4	0.1
13-Jul-20	3:00	346.7	0.1
13-Jul-20	4:00	81.0	0.1
13-Jul-20	5:00	351.2	0.1
13-Jul-20	6:00	263.6	0.1
13-Jul-20	7:00	66.1	0.1
13-Jul-20	8:00	85.3	0.1
13-Jul-20	9:00	296.5	0.1
13-Jul-20	10:00	223.7	0.5
13-Jul-20	11:00	290.8	0.6
13-Jul-20	12:00	246.9	0.8
13-Jul-20	13:00	253.7	2.7
13-Jul-20	14:00	234.6	3.8
13-Jul-20	15:00	225.1	1.6
13-Jul-20	16:00	218.1	2.6
13-Jul-20	17:00	231.4	0.4
13-Jul-20	18:00	176.4	0.1
13-Jul-20	19:00	208.6	0.1
13-Jul-20	20:00	223.4	0.1
13-Jul-20	21:00	220.3	0.1
13-Jul-20	22:00	258.7	0.1
13-Jul-20	23:00	223.1	0.1
14-Jul-20	0:00	249.2	0.1
14-Jul-20	1:00	215.4	0.1
14-Jul-20	2:00	269.0	0.1
14-Jul-20	3:00	270.1	0.1
14-Jul-20	4:00	252.3	0.2
14-Jul-20	5:00	230.6	0.3
14-Jul-20	6:00	227.2	0.1
14-Jul-20	7:00	226.7	0.3
14-Jul-20	8:00	258.0	0.6
14-Jul-20	9:00	249.4	0.5
14-Jul-20	10:00	261.7	0.5
14-Jul-20	11:00	7.4	0.1

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
14-Jul-20	12:00	253.8	2.1
14-Jul-20	13:00	239.5	1.3
14-Jul-20	14:00	252.6	0.5
14-Jul-20	15:00	205.9	1.2
14-Jul-20	16:00	246.3	2.0
14-Jul-20	17:00	257.8	0.3
14-Jul-20	18:00	246.5	0.1
14-Jul-20	19:00	216.0	0.1
14-Jul-20	20:00	206.6	0.2
14-Jul-20	21:00	255.9	0.1
14-Jul-20	22:00	259.5	0.1
14-Jul-20	23:00	203.6	0.1
15-Jul-20	0:00	250.7	0.2
15-Jul-20	1:00	231.8	0.2
15-Jul-20	2:00	188.6	1.0
15-Jul-20	3:00	229.5	0.2
15-Jul-20	4:00	238.6	0.4
15-Jul-20	5:00	201.1	0.1
15-Jul-20	6:00	259.1	0.2
15-Jul-20	7:00	239.9	0.1
15-Jul-20	8:00	294.4	0.5
15-Jul-20	9:00	291.9	0.8
15-Jul-20	10:00	257.1	2.2
15-Jul-20	11:00	235.5	2.8
15-Jul-20	12:00	278.5	0.9
15-Jul-20	13:00	255.0	0.9
15-Jul-20	14:00	215.1	1.7
15-Jul-20	15:00	215.2	0.4
15-Jul-20	16:00	237.3	0.9
15-Jul-20	17:00	244.4	0.5
15-Jul-20	18:00	273.8	0.1
15-Jul-20	19:00	217.5	0.2
15-Jul-20	20:00	211.7	0.2
15-Jul-20	21:00	236.9	0.1
15-Jul-20	22:00	219.2	0.1
15-Jul-20	23:00	216.5	0.1

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
16-Jul-20	0:00	227.4	0.1
16-Jul-20	1:00	210.1	0.1
16-Jul-20	2:00	227.2	0.1
16-Jul-20	3:00	209.5	0.1
16-Jul-20	4:00	228.8	0.3
16-Jul-20	5:00	202.4	0.1
16-Jul-20	6:00	195.0	0.5
16-Jul-20	7:00	228.9	0.3
16-Jul-20	8:00	220.2	1.1
16-Jul-20	9:00	215.9	4.0
16-Jul-20	10:00	298.7	1.7
16-Jul-20	11:00	222.1	4.3
16-Jul-20	12:00	212.3	0.4
16-Jul-20	13:00	173.9	1.8
16-Jul-20	14:00	264.0	3.7
16-Jul-20	15:00	201.4	1.8
16-Jul-20	16:00	163.8	1.3
16-Jul-20	17:00	176.5	0.3
16-Jul-20	18:00	221.5	1.7
16-Jul-20	19:00	245.8	0.1
16-Jul-20	20:00	196.7	0.1
16-Jul-20	21:00	220.7	0.4
16-Jul-20	22:00	206.0	0.2
16-Jul-20	23:00	212.1	0.1
17-Jul-20	0:00	229.5	0.1
17-Jul-20	1:00	205.8	0.1
17-Jul-20	2:00	192.8	0.1
17-Jul-20	3:00	276.5	0.1
17-Jul-20	4:00	218.4	0.1
17-Jul-20	5:00	234.6	0.1
17-Jul-20	6:00	268.4	0.1
17-Jul-20	7:00	248.8	0.2
17-Jul-20	8:00	200.4	0.2
17-Jul-20	9:00	215.4	0.9
17-Jul-20	10:00	266.9	0.2
17-Jul-20	11:00	181.0	0.4

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
17-Jul-20	12:00	262.2	0.8
17-Jul-20	13:00	279.9	7.2
17-Jul-20	14:00	207.7	1.6
17-Jul-20	15:00	193.2	0.6
17-Jul-20	16:00	229.4	2.6
17-Jul-20	17:00	227.7	0.9
17-Jul-20	18:00	183.0	0.4
17-Jul-20	19:00	192.3	0.2
17-Jul-20	20:00	232.1	1.2
17-Jul-20	21:00	229.6	0.2
17-Jul-20	22:00	252.4	0.1
17-Jul-20	23:00	228.7	0.2
18-Jul-20	0:00	199.6	0.2
18-Jul-20	1:00	194.0	1.1
18-Jul-20	2:00	224.5	0.2
18-Jul-20	3:00	247.9	0.1
18-Jul-20	4:00	193.6	0.3
18-Jul-20	5:00	204.0	0.1
18-Jul-20	6:00	296.8	0.1
18-Jul-20	7:00	243.2	0.1
18-Jul-20	8:00	256.3	1.4
18-Jul-20	9:00	259.5	3.6
18-Jul-20	10:00	237.3	0.6
18-Jul-20	11:00	254.4	1.3
18-Jul-20	12:00	240.6	2.7
18-Jul-20	13:00	221.5	2.4
18-Jul-20	14:00	181.2	1.0
18-Jul-20	15:00	216.5	0.8
18-Jul-20	16:00	232.2	1.2
18-Jul-20	17:00	195.0	0.1
18-Jul-20	18:00	262.2	0.1
18-Jul-20	19:00	216.0	0.4
18-Jul-20	20:00	221.6	0.2
18-Jul-20	21:00	244.9	0.1
18-Jul-20	22:00	218.6	0.3
18-Jul-20	23:00	222.3	0.3

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
19-Jul-20	0:00	208.7	0.1
19-Jul-20	1:00	225.8	0.3
19-Jul-20	2:00	258.6	0.3
19-Jul-20	3:00	240.2	0.7
19-Jul-20	4:00	205.8	0.1
19-Jul-20	5:00	236.4	0.1
19-Jul-20	6:00	195.9	0.1
19-Jul-20	7:00	191.1	0.6
19-Jul-20	8:00	226.3	0.3
19-Jul-20	9:00	240.6	1.1
19-Jul-20	10:00	213.1	1.2
19-Jul-20	11:00	304.1	0.3
19-Jul-20	12:00	201.4	1.5
19-Jul-20	13:00	245.2	0.1
19-Jul-20	14:00	230.3	2.7
19-Jul-20	15:00	225.0	1.9
19-Jul-20	16:00	247.7	1.2
19-Jul-20	17:00	193.5	2.3
19-Jul-20	18:00	176.2	2.1
19-Jul-20	19:00	211.6	1.3
19-Jul-20	20:00	199.7	0.3
19-Jul-20	21:00	237.0	0.4
19-Jul-20	22:00	250.5	0.1
19-Jul-20	23:00	211.5	0.3
20-Jul-20	0:00	226.4	0.2
20-Jul-20	1:00	192.1	0.1
20-Jul-20	2:00	209.0	0.1
20-Jul-20	3:00	273.0	0.1
20-Jul-20	4:00	248.7	0.1
20-Jul-20	5:00	76.0	0.1
20-Jul-20	6:00	96.9	0.1
20-Jul-20	7:00	54.4	0.1
20-Jul-20	8:00	213.8	0.2
20-Jul-20	9:00	208.4	0.1
20-Jul-20	10:00	226.1	4.3
20-Jul-20	11:00	186.8	0.8

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
20-Jul-20	12:00	224.9	0.6
20-Jul-20	13:00	245.5	1.4
20-Jul-20	14:00	266.2	0.9
20-Jul-20	15:00	267.1	1.3
20-Jul-20	16:00	179.5	3.0
20-Jul-20	17:00	240.6	0.4
20-Jul-20	18:00	224.9	0.2
20-Jul-20	19:00	223.0	0.1
20-Jul-20	20:00	189.5	0.1
20-Jul-20	21:00	281.2	0.1
20-Jul-20	22:00	61.1	0.1
20-Jul-20	23:00	21.8	0.1
21-Jul-20	0:00	265.2	0.1
21-Jul-20	1:00	248.4	0.1
21-Jul-20	2:00	250.1	0.1
21-Jul-20	3:00	258.3	0.1
21-Jul-20	4:00	213.0	0.1
21-Jul-20	5:00	244.8	0.1
21-Jul-20	6:00	208.8	0.1
21-Jul-20	7:00	228.0	0.1
21-Jul-20	8:00	56.2	0.1
21-Jul-20	9:00	60.4	0.1
21-Jul-20	10:00	243.2	0.1
21-Jul-20	11:00	293.0	0.1
21-Jul-20	12:00	192.4	0.4
21-Jul-20	13:00	331.2	3.3
21-Jul-20	14:00	43.7	0.4
21-Jul-20	15:00	252.9	0.7
21-Jul-20	16:00	232.0	0.5
21-Jul-20	17:00	12.0	0.1
21-Jul-20	18:00	72.5	0.1
21-Jul-20	19:00	76.3	0.1
21-Jul-20	20:00	84.3	0.1
21-Jul-20	21:00	338.3	0.1
21-Jul-20	22:00	71.5	0.1
21-Jul-20	23:00	76.5	0.1

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
22-Jul-20	0:00	112.6	0.1
22-Jul-20	1:00	84.5	0.1
22-Jul-20	2:00	51.2	0.1
22-Jul-20	3:00	43.3	0.1
22-Jul-20	4:00	47.7	0.1
22-Jul-20	5:00	234.5	0.1
22-Jul-20	6:00	68.9	0.1
22-Jul-20	7:00	55.8	0.1
22-Jul-20	8:00	95.5	0.1
22-Jul-20	9:00	75.0	0.1
22-Jul-20	10:00	73.9	0.2
22-Jul-20	11:00	55.0	0.1
22-Jul-20	12:00	100.5	0.2
22-Jul-20	13:00	99.5	0.1
22-Jul-20	14:00	101.0	0.1
22-Jul-20	15:00	156.1	0.2
22-Jul-20	16:00	234.5	0.1
22-Jul-20	17:00	72.2	0.4
22-Jul-20	18:00	103.9	0.1
22-Jul-20	19:00	89.7	0.1
22-Jul-20	20:00	127.2	0.3
22-Jul-20	21:00	71.2	0.1
22-Jul-20	22:00	81.0	0.1
22-Jul-20	23:00	123.8	0.1
23-Jul-20	0:00	82.5	0.1
23-Jul-20	1:00	278.1	0.1
23-Jul-20	2:00	78.5	0.1
23-Jul-20	3:00	0.3	0.1
23-Jul-20	4:00	241.5	0.1
23-Jul-20	5:00	220.4	0.1
23-Jul-20	6:00	259.4	0.1
23-Jul-20	7:00	74.6	0.2
23-Jul-20	8:00	199.7	0.2
23-Jul-20	9:00	172.3	0.6
23-Jul-20	10:00	198.8	0.3
23-Jul-20	11:00	263.4	0.3

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
23-Jul-20	12:00	246.6	0.2
23-Jul-20	13:00	83.4	0.1
23-Jul-20	14:00	84.6	0.1
23-Jul-20	15:00	184.7	0.1
23-Jul-20	16:00	258.3	0.3
23-Jul-20	17:00	194.0	0.3
23-Jul-20	18:00	219.6	0.2
23-Jul-20	19:00	229.6	0.1
23-Jul-20	20:00	226.3	0.1
23-Jul-20	21:00	218.6	0.1
23-Jul-20	22:00	216.5	0.1
23-Jul-20	23:00	250.0	0.1
24-Jul-20	0:00	206.1	0.1
24-Jul-20	1:00	244.2	0.1
24-Jul-20	2:00	47.8	0.1
24-Jul-20	3:00	47.8	0.1
24-Jul-20	4:00	51.3	0.1
24-Jul-20	5:00	71.5	0.1
24-Jul-20	6:00	54.8	0.1
24-Jul-20	7:00	344.0	0.1
24-Jul-20	8:00	309.4	0.3
24-Jul-20	9:00	236.6	0.1
24-Jul-20	10:00	293.0	0.2
24-Jul-20	11:00	303.6	0.6
24-Jul-20	12:00	265.8	0.2
24-Jul-20	13:00	274.3	0.4
24-Jul-20	14:00	248.7	1.6
24-Jul-20	15:00	262.2	1.9
24-Jul-20	16:00	270.7	2.2
24-Jul-20	17:00	279.4	1.0
24-Jul-20	18:00	218.1	0.9
24-Jul-20	19:00	290.6	0.2
24-Jul-20	20:00	221.5	0.1
24-Jul-20	21:00	230.8	0.1
24-Jul-20	22:00	166.1	0.1
24-Jul-20	23:00	213.8	0.1

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
25-Jul-20	0:00	69.9	0.1
25-Jul-20	1:00	239.9	0.1
25-Jul-20	2:00	222.9	0.1
25-Jul-20	3:00	236.6	0.1
25-Jul-20	4:00	216.3	0.1
25-Jul-20	5:00	231.0	0.1
25-Jul-20	6:00	16.4	0.1
25-Jul-20	7:00	182.5	0.1
25-Jul-20	8:00	254.5	1.4
25-Jul-20	9:00	312.0	1.1
25-Jul-20	10:00	202.1	0.5
25-Jul-20	11:00	226.6	0.1
25-Jul-20	12:00	258.4	1.5
25-Jul-20	13:00	222.9	0.4
25-Jul-20	14:00	264.9	0.2
25-Jul-20	15:00	237.5	0.6
25-Jul-20	16:00	213.0	3.0
25-Jul-20	17:00	239.3	1.7
25-Jul-20	18:00	203.2	0.2
25-Jul-20	19:00	217.8	0.2
25-Jul-20	20:00	200.2	0.3
25-Jul-20	21:00	262.0	0.1
25-Jul-20	22:00	208.7	0.1
25-Jul-20	23:00	274.3	0.1
26-Jul-20	0:00	232.0	0.1
26-Jul-20	1:00	253.6	1.1
26-Jul-20	2:00	285.8	0.1
26-Jul-20	3:00	242.3	0.1
26-Jul-20	4:00	199.3	0.1
26-Jul-20	5:00	227.8	0.1
26-Jul-20	6:00	213.9	0.1
26-Jul-20	7:00	222.7	0.5
26-Jul-20	8:00	258.8	0.4
26-Jul-20	9:00	286.5	1.8
26-Jul-20	10:00	307.1	0.9
26-Jul-20	11:00	284.4	1.5

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
26-Jul-20	12:00	265.5	0.6
26-Jul-20	13:00	249.3	0.4
26-Jul-20	14:00	254.5	3.0
26-Jul-20	15:00	289.8	0.6
26-Jul-20	16:00	228.9	0.9
26-Jul-20	17:00	230.5	0.8
26-Jul-20	18:00	240.6	2.1
26-Jul-20	19:00	245.8	0.1
26-Jul-20	20:00	267.7	0.2
26-Jul-20	21:00	247.4	0.1
26-Jul-20	22:00	260.1	0.3
26-Jul-20	23:00	230.7	0.1
27-Jul-20	0:00	211.3	0.1
27-Jul-20	1:00	242.0	0.3
27-Jul-20	2:00	187.9	0.1
27-Jul-20	3:00	219.8	0.1
27-Jul-20	4:00	230.7	0.1
27-Jul-20	5:00	215.9	0.2
27-Jul-20	6:00	197.3	0.1
27-Jul-20	7:00	190.6	0.2
27-Jul-20	8:00	281.1	0.1
27-Jul-20	9:00	271.3	0.2
27-Jul-20	10:00	295.1	0.3
27-Jul-20	11:00	218.1	1.6
27-Jul-20	12:00	220.9	0.1
27-Jul-20	13:00	226.7	0.9
27-Jul-20	14:00	151.5	0.2
27-Jul-20	15:00	237.5	4.0
27-Jul-20	16:00	218.0	1.4
27-Jul-20	17:00	228.5	1.1
27-Jul-20	18:00	231.2	1.1
27-Jul-20	19:00	255.7	0.3
27-Jul-20	20:00	247.7	0.1
27-Jul-20	21:00	292.0	0.1
27-Jul-20	22:00	68.6	0.1
27-Jul-20	23:00	220.9	0.1

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
28-Jul-20	0:00	238.6	0.1
28-Jul-20	1:00	206.8	0.1
28-Jul-20	2:00	244.9	0.1
28-Jul-20	3:00	71.9	0.1
28-Jul-20	4:00	20.4	0.1
28-Jul-20	5:00	292.2	0.1
28-Jul-20	6:00	109.2	0.1
28-Jul-20	7:00	252.9	0.2
28-Jul-20	8:00	252.8	0.3
28-Jul-20	9:00	317.0	0.2
28-Jul-20	10:00	277.1	0.2
28-Jul-20	11:00	260.0	1.5
28-Jul-20	12:00	355.2	0.6
28-Jul-20	13:00	252.8	2.7
28-Jul-20	14:00	245.2	2.0
28-Jul-20	15:00	199.2	0.7
28-Jul-20	16:00	200.8	2.5
28-Jul-20	17:00	195.6	2.5
28-Jul-20	18:00	249.5	2.1
28-Jul-20	19:00	215.2	0.2
28-Jul-20	20:00	243.6	0.1
28-Jul-20	21:00	268.0	0.1
28-Jul-20	22:00	281.3	0.1
28-Jul-20	23:00	228.8	0.1
29-Jul-20	0:00	236.9	0.1
29-Jul-20	1:00	236.7	0.1
29-Jul-20	2:00	45.1	0.1
29-Jul-20	3:00	258.6	0.1
29-Jul-20	4:00	275.0	0.1
29-Jul-20	5:00	268.1	0.1
29-Jul-20	6:00	185.8	0.1
29-Jul-20	7:00	263.7	0.1
29-Jul-20	8:00	197.5	0.2
29-Jul-20	9:00	303.2	0.2
29-Jul-20	10:00	337.0	0.1
29-Jul-20	11:00	2.4	0.1

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
29-Jul-20	12:00	276.1	0.7
29-Jul-20	13:00	252.8	3.2
29-Jul-20	14:00	63.4	0.1
29-Jul-20	15:00	66.5	0.1
29-Jul-20	16:00	102.1	0.1
29-Jul-20	17:00	100.7	0.1
29-Jul-20	18:00	88.5	0.1
29-Jul-20	19:00	61.2	0.2
29-Jul-20	20:00	112.8	0.1
29-Jul-20	21:00	61.7	0.1
29-Jul-20	22:00	55.0	0.1
29-Jul-20	23:00	123.3	0.1
30-Jul-20	0:00	52.6	0.1
30-Jul-20	1:00	63.2	0.1
30-Jul-20	2:00	71.0	0.1
30-Jul-20	3:00	45.5	0.1
30-Jul-20	4:00	68.9	0.1
30-Jul-20	5:00	52.5	0.1
30-Jul-20	6:00	78.3	0.2
30-Jul-20	7:00	97.5	0.1
30-Jul-20	8:00	61.5	0.1
30-Jul-20	9:00	111.4	0.6
30-Jul-20	10:00	87.8	0.4
30-Jul-20	11:00	54.3	3.2
30-Jul-20	12:00	136.8	0.1
30-Jul-20	13:00	96.7	2.0
30-Jul-20	14:00	65.5	0.2
30-Jul-20	15:00	67.1	0.1
30-Jul-20	16:00	160.3	0.2
30-Jul-20	17:00	81.9	0.2
30-Jul-20	18:00	92.3	0.1
30-Jul-20	19:00	67.6	0.1
30-Jul-20	20:00	30.4	0.1
30-Jul-20	21:00	57.1	0.1
30-Jul-20	22:00	71.4	0.1
30-Jul-20	23:00	112.5	0.1

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
31-Jul-20	0:00	63.6	0.1
31-Jul-20	1:00	58.6	0.1
31-Jul-20	2:00	90.4	0.1
31-Jul-20	3:00	61.1	0.1
31-Jul-20	4:00	77.5	0.1
31-Jul-20	5:00	36.1	0.1
31-Jul-20	6:00	46.1	0.1
31-Jul-20	7:00	130.1	0.1
31-Jul-20	8:00	77.8	0.3
31-Jul-20	9:00	70.1	0.2
31-Jul-20	10:00	117.4	0.9
31-Jul-20	11:00	70.4	0.1
31-Jul-20	12:00	90.7	0.1
31-Jul-20	13:00	84.5	0.3
31-Jul-20	14:00	107.1	0.4
31-Jul-20	15:00	70.6	0.1
31-Jul-20	16:00	86.6	2.1
31-Jul-20	17:00	85.7	0.1
31-Jul-20	18:00	121.2	3.1
31-Jul-20	19:00	105.5	0.1
31-Jul-20	20:00	88.6	0.1
31-Jul-20	21:00	70.1	0.1
31-Jul-20	22:00	243.4	0.1
31-Jul-20	23:00	52.1	0.7

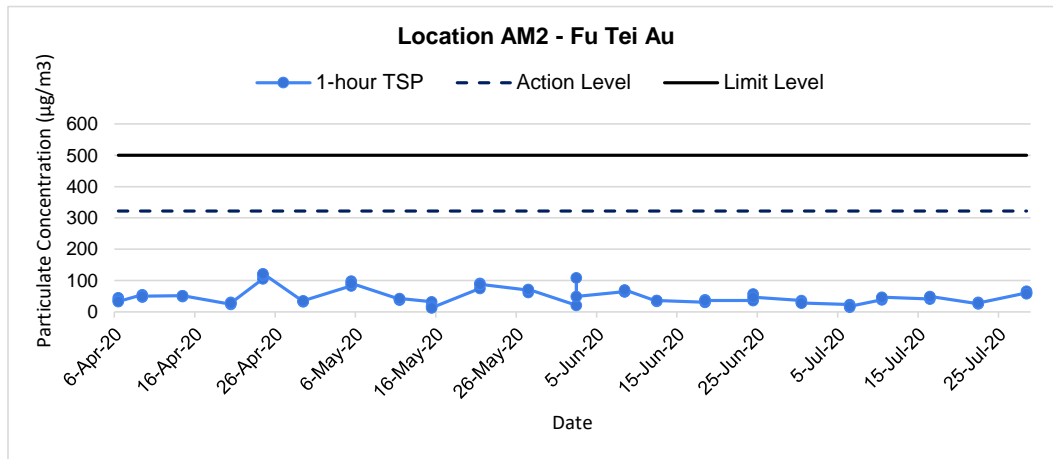
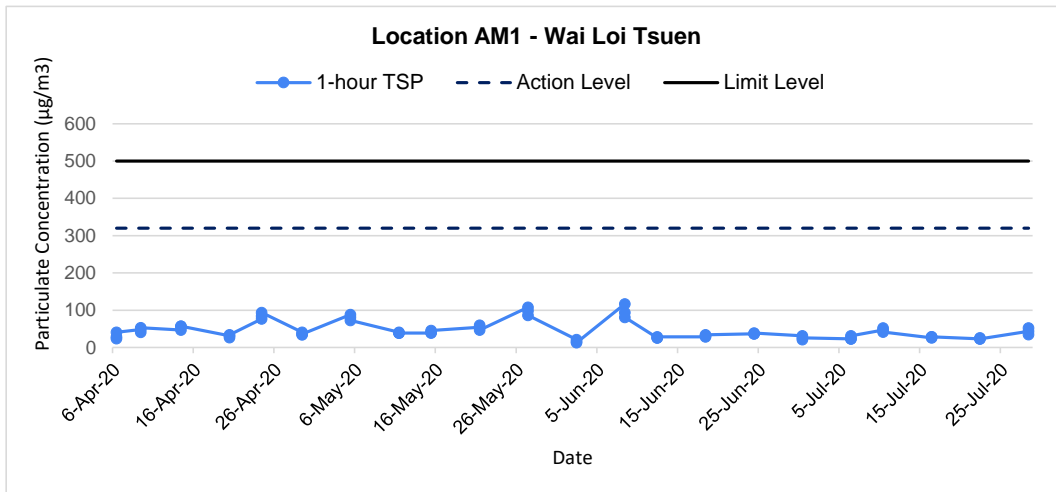
APPENDIX E
1-HOUR TSP MONITORING RESULTS
AND GRAPHICAL PRESENTATIONS

Appendix E - 1-hour TSP Monitoring Results

Location AM1 - Wai Loi Tsuen			
Date	Time	Weather	Particulate Concentration ($\mu\text{g}/\text{m}^3$)
6-Jul-20	10:00	Sunny	23.4
6-Jul-20	11:00	Sunny	23.4
6-Jul-20	12:00	Sunny	31.2
10-Jul-20	9:00	Fine	46.8
10-Jul-20	10:00	Fine	52.0
10-Jul-20	11:00	Fine	41.6
16-Jul-20	9:30	Sunny	26.0
16-Jul-20	10:30	Sunny	28.6
16-Jul-20	11:30	Sunny	28.6
22-Jul-20	9:15	Sunny	23.4
22-Jul-20	10:15	Sunny	26.0
22-Jul-20	11:15	Sunny	23.4
28-Jul-20	9:15	Sunny	43.5
28-Jul-20	10:15	Sunny	52.2
28-Jul-20	11:15	Sunny	34.8
		Average	33.7
		Maximum	52.2
		Minimum	23.4

Location AM2 - Fu Tei Au			
Date	Time	Weather	Particulate Concentration ($\mu\text{g}/\text{m}^3$)
6-Jul-20	13:25	Sunny	23.4
6-Jul-20	14:25	Sunny	15.6
6-Jul-20	15:25	Sunny	18.2
10-Jul-20	13:05	Fine	39.0
10-Jul-20	14:05	Fine	44.2
10-Jul-20	15:05	Fine	46.8
16-Jul-20	13:45	Sunny	41.6
16-Jul-20	14:45	Sunny	46.8
16-Jul-20	15:45	Sunny	49.4
22-Jul-20	13:15	Sunny	26.0
22-Jul-20	14:15	Sunny	31.2
22-Jul-20	15:15	Sunny	28.6
28-Jul-20	13:30	Sunny	60.9
28-Jul-20	14:30	Sunny	66.7
28-Jul-20	15:30	Sunny	58.0
		Average	39.8
		Maximum	66.7
		Minimum	15.6

1-hr TSP Concentration Levels



Title	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1	Date	Jul 2020	Project No.	MA19019	CINOTECH
	Graphical Presentation of 1-hour TSP Monitoring Results			Appendix	E	

**APPENDIX F
24-HOUR TSP MONITORING RESULTS
AND GRAPHICAL PRESENTATIONS**

Appendix F - 24-hour TSP Monitoring Results

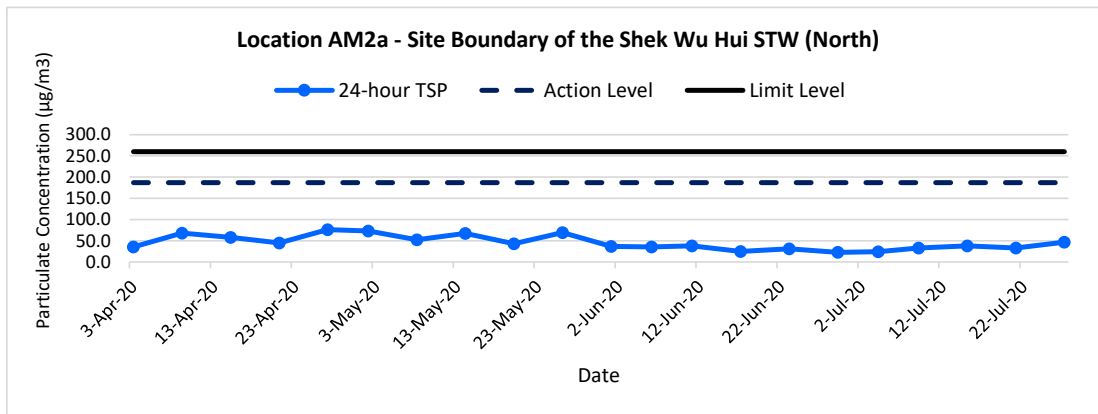
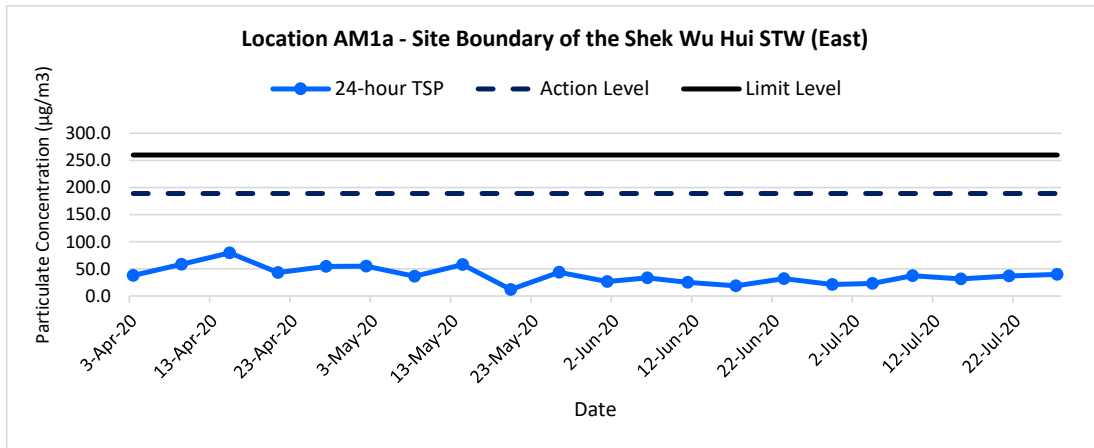
Location AM1a - Site Boundary of the Shek Wu Hui STW (East)

Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time (hrs.)	Flow Rate (m ³ /min.)		Av. Flow (m ³ /min)	Total vol. (m ³)	Conc. (µg/m ³)
				Initial	Final		Initial	Final		Initial	Final			
4-Jul-20	Sunny	302.9	757.1	3.4625	3.5030	0.0405	8874.6	8898.6	24.0	1.21	1.21	1.21	1745.7	23.2
9-Jul-20	Fine	303.2	754.8	3.4272	3.4931	0.0659	8898.6	8922.6	24.0	1.22	1.22	1.22	1752.1	37.6
15-Jul-20	Sunny	303.5	755.9	3.5363	3.5907	0.0544	8922.6	8946.2	23.6	1.22	1.22	1.22	1723.4	31.6
21-Jul-20	Sunny	303.2	758.4	3.4644	3.5292	0.0648	8946.6	8970.6	24.0	1.22	1.22	1.22	1755.9	36.9
27-Jul-20	Sunny	303.7	756.2	3.4438	3.5133	0.0695	8970.6	8994.6	24.0	1.22	1.22	1.22	1752.4	39.7
													Min	23.2
													Max	39.7
													Average	33.8

Location AM2a - Site Boundary of the Shek Wu Hui STW (North)

Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time (hrs.)	Flow Rate (m ³ /min.)		Av. Flow (m ³ /min)	Total vol. (m ³)	Conc. (µg/m ³)
				Initial	Final		Initial	Final		Initial	Final			
4-Jul-20	Sunny	302.9	757.1	3.4993	3.5414	0.0421	19068.7	19092.7	24.0	1.21	1.21	1.21	1747.5	24.1
9-Jul-20	Fine	303.2	754.8	3.4610	3.5181	0.0571	19092.7	19116.7	24.0	1.21	1.22	1.21	1749.2	32.6
15-Jul-20	Sunny	303.5	755.9	3.5000	3.5660	0.0660	19116.7	19140.7	24.0	1.21	1.22	1.22	1749.9	37.7
21-Jul-20	Sunny	303.2	758.4	3.4586	3.5162	0.0576	19140.7	19164.7	24.0	1.22	1.22	1.22	1754.3	32.8
27-Jul-20	Sunny	303.7	756.2	3.4557	3.5365	0.0808	19164.8	19188.6	23.8	1.21	1.22	1.22	1735.0	46.6
													Min	24.1
													Max	46.6
													Average	34.8

24-hr TSP Concentration Levels



<p>Title</p> <p style="text-align: center;">Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1</p>	<p>Date</p> <p style="text-align: center;">Jul 2020</p>	<p>Project No.</p> <p style="text-align: center;">MA19019</p>	
<p style="text-align: center;">Graphical Presentation of 24-hour TSP Monitoring Results</p>	<p>Appendix</p> <p style="text-align: center;">F</p>	<p style="text-align: center;">F</p>	

**APPENDIX G
COPIES OF CALIBRATION
CERTIFICATES FOR NOISE
MONITORING**



Equipment no.: N-12-01

Calibration Certificate

0022524

Customer : Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong	Object 1 : BSWA 308 SLM Serial No. /Ref. No. : 570183 / 550233 Object 2 : Serial No. /Ref. No. :
Customer Code : SVEC09005	Manufacturer : BSWAtech
Date of calibration: 23/09/2019 Date of the recommended re-calibration: 23/09/2020	Certificate No.: 0022524 Handle by: E0002

Measuring results

Reference value	Indication value	Deviation	Allowed deviation	Object
94.0dB	94.0dB	0.0dB	+/- 1.5dB	1
114.0dB	114.0dB	0.0dB	+/- 1.5dB	1

Measuring equipment

index	Calibrator / Master	Traceability
1	Master Sound Meter, SVAN949,sn:8571	IEC61672
2	Sound Calibrator, SV30A sn:32580	IEC60942

Ambient conditions

Temperature (20...26)°C

Humidity (20...60)%RH

Measuring procedure

Calibrated by Type 1 Sound Calibrator with Master Sound Level Meter under 1kHz Frequency.

Uncertainty


+/- 0.2 dB for probability not less than 95%.

Conformity

1. The resulted values were those obtained at the time of test and applies only to the item calibrated.
2. The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
3. The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
4. HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
5. The calibrations certificate may not be reproduced.

Measured value(s) **within** the allowable deviation.

Performed by



Calibration Technician

Approved by



Quality Manager

**Calibration Certificate**

0022522

Customer : Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong	Object 1 : BSWA 308 SLM Serial No. /Ref. No. : 570187 / 550841 Object 2 : Serial No. /Ref. No. :
Customer Code : SVEC09005	Manufacturer : BSWAtech
Date of calibration: 23/09/2019 Date of the recommended re-calibration: 23/09/2020	Certificate No.: 0022522 Handle by: E0002

Measuring results

Reference value	Indication value	Deviation	Allowed deviation	Object
94.0dB	94.0dB	0.0dB	+/- 1.5dB	1
114.0dB	113.9dB	-0.1dB	+/- 1.5dB	1

Measuring equipment

index	Calibrator / Master	Traceability
1	Master Sound Meter, SVAN949,sn:8571	IEC61672
2	Sound Calibrator, SV30A sn:32580	IEC60942

Ambient conditions

Temperature (20...26)°C

Humidity (20...60)%RH

Measuring procedure

Calibrated by Type 1 Sound Calibrator with Master Sound Level Meter under 1kHz Frequency.

Uncertainty

+/- 0.2dB for probability not less than 95%.

Conformity

- 1.The resulted values were those obtained at the time of test and applies only to the item calibrated.
- 2.The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
- 3.The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
- 4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
- 5.The calibrations certificate may not be reproduced.

Measured value(s) **within** the allowable deviation.

Performed by

Calibration Technician

Approved by

Quality Manager



Calibration Certificate

0022999

Customer : Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong	Object 1 : SVAN957 SLM Serial No. /Ref. No. : 23851 / N-08-12 Object 2 : Microphone Serial No. /Ref. No. : 43676
Customer Code : SVEC09005	Manufacturer : Svantek
Date of calibration: 19/12/2019 Date of the recommended re-calibration: 19/12/2020	Certificate No.: 0022999 Handle by: E0002

Measuring results

Reference value	Indication value	Deviation	Allowed deviation	Object
94.0dB	94.0dB	0.0dB	+/- 1.5dB	1
114.0dB	114.0dB	0.0dB	+/- 1.5dB	1

Measuring equipment

index	Calibrator / Master	Traceability
1	Master Sound Meter, SVAN949,sn:8571	IEC61672
2	Sound Calibrator, SV30A sn:32580	IEC60942

Ambient conditions

Temperature (20...26)°C

Humidity (20...60)%RH

Measuring procedure

Calibrated by Type 1 Sound Calibrator with Master Sound Level Meter under 1kHz Frequency.

Uncertainty

+/- 0.2dB for probability not less than 95%.

Conformity

- 1.The resulted values were those obtained at the time of test and applies only to the item calibrated.
- 2.The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
- 3.The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
- 4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
- 5.The calibrations certificate may not be reproduced.

Measured value(s) **within** the allowable deviation.

Performed by

Calibration Technician

Approved by

Quality Manager



Calibration Certificate

0022675

Customer : Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong	Object 1 : ST-120 sound calibrator Serial No. /Ref. No. : 181001637 Object 2 : Serial No. /Ref. No. :
Customer Code : SVEC09005	Manufacturer : Soundtek
Date of calibration: 24/10/2019 Date of the recommended re-calibration: 24/10/2020	Certificate No.: 0022675 Handle by: E0002

Measuring results

Reference value	Indication value	Deviation	Allowed deviation	Object
94.0dB	94.0dB	0.0dB	+/- 0.3dB	1
114.0dB	114.0dB	0.0dB	+/- 0.5dB	1

Measuring equipment

index	Calibrator / Master	Traceability
1	Master Sound Meter, SVAN949,sn:8571	IEC61672
2	Sound Calibrator, SV30A sn:32580	IEC60942

Ambient conditions

Temperature (20...26)°C Humidity (20...60)%RH

Measuring procedure

Calibrated by Type 1 Sound Level Meter and 1kHz Sound Source

Uncertainty

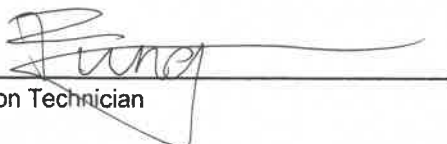
+/- 0.2dB for probability not less than 95%.

Conformity

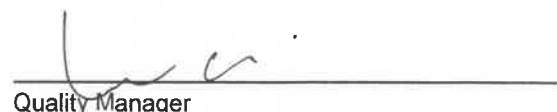
- 1.The resulted values were those obtained at the time of test and applies only to the item calibrated.
- 2.The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
- 3.The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
- 4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
- 5.The calibrations certificate may not be reproduced.

Measured value(s) **within** the allowable deviation.

Performed by


Calibration Technician

Approved by


Quality Manager

**APPENDIX H
NOISE MONITORING RESULTS AND
GRAPHICAL PRESENTATIONS**

Appendix H - Noise Monitoring Results

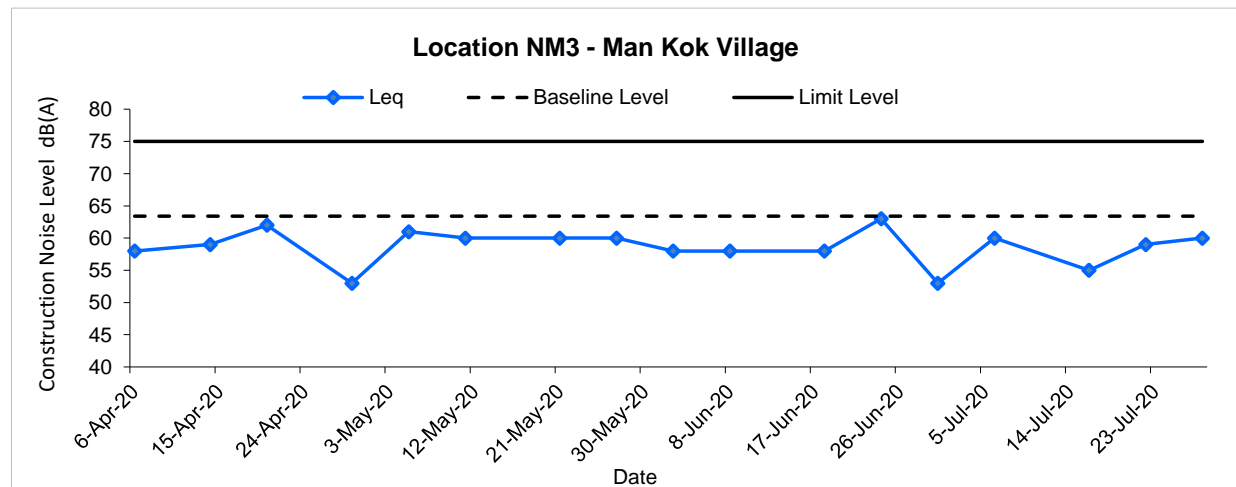
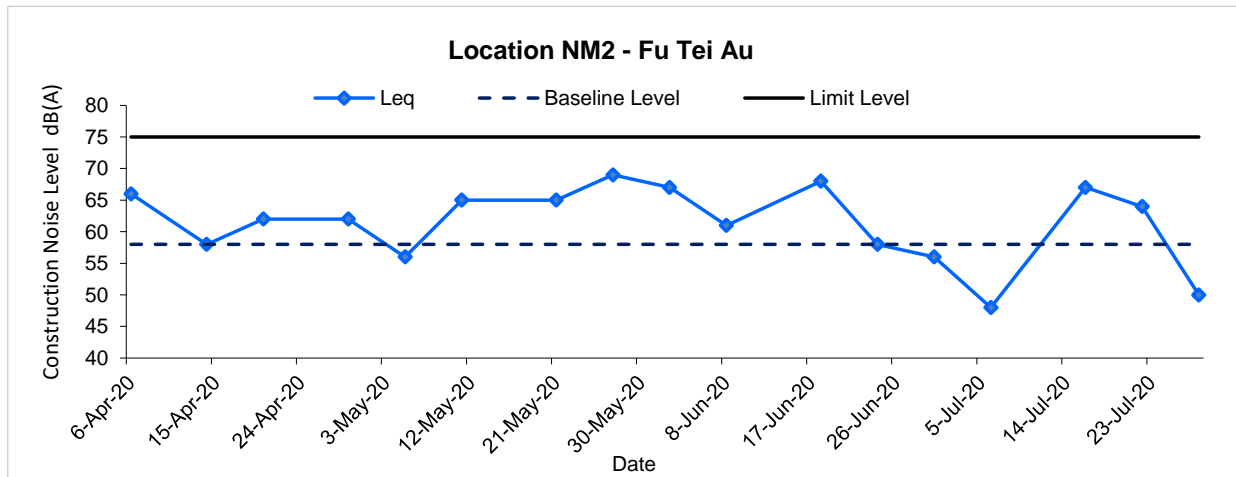
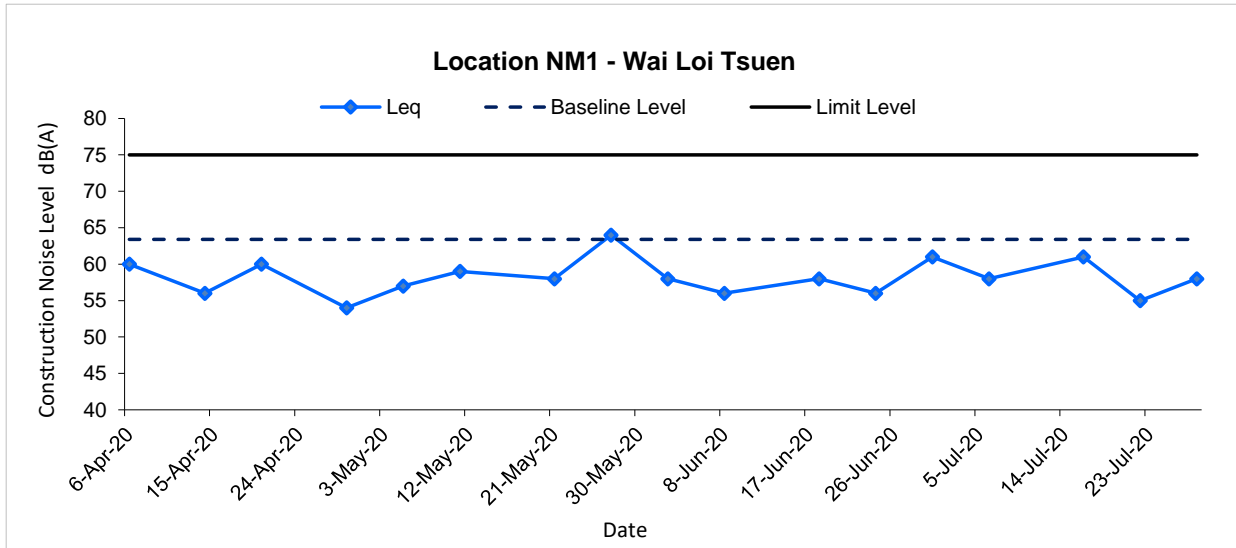
(0700-1900 hrs on Normal Weekdays)

Location NM1 - Wai Loi Tsuen							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}
6-Jul-20	10:10	Sunny	57.8	59.6	53.2	63.4	57.8 Measured \leq Baseline
16-Jul-20	9:45	Sunny	60.9	64.9	52.1	63.4	60.9 Measured \leq Baseline
22-Jul-20	13:15	Sunny	54.7	56.8	51.4	63.4	54.7 Measured \leq Baseline
28-Jul-20	9:00	Sunny	57.5	59.9	53.0	63.4	57.5 Measured \leq Baseline

Location NM2 - Fu Tei Au							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}
6-Jul-20	11:30	Sunny	58.4	61.2	51.8	58.0	47.8
16-Jul-20	11:20	Sunny	67.8	72.8	62.1	58.0	67.3
22-Jul-20	15:30	Sunny	65.2	67.2	55.3	58.0	64.3
28-Jul-20	13:00	Sunny	58.6	62.3	52.9	58.0	49.7

Location NM3 - Man Kok Village							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}
6-Jul-20	10:50	Sunny	60.2	64.0	52.4	63.4	60.2 Measured \leq Baseline
16-Jul-20	10:30	Sunny	54.5	55.8	50.6	63.4	54.5 Measured \leq Baseline
22-Jul-20	14:15	Sunny	58.9	62.0	50.2	63.4	58.9 Measured \leq Baseline
28-Jul-20	10:00	Sunny	59.6	64.2	53.6	63.4	59.6 Measured \leq Baseline

Noise Levels



Title Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 Graphical Presentation of Construction Noise Monitoring Results	Date Jul 2020	Project No. MA19019	
		Appendix H	

**APPENDIX I
ECOLOGICAL MONITORING RESULTS
AND ANALYSIS**

MA19019 - Ecological Monitoring Result and Analysis

Table I: Recorded Bird Species and their Abundance in the Reporting Month

Scientific Name	Common Name	Chinese Name	Waterbird	Point Count Abundance	Transect Abundance
<i>Acridotheres cristatellus</i>	Crested Myna	八哥		83	+++++
<i>Alcedo atthis</i>	Common Kingfisher	普通翠鳥	*	1	
<i>Amaurornis phoenicurus</i>	White-breasted Waterhen	白胸苦惡鳥	*	1	+
<i>Anthus hodgsoni</i>	Olive Backed Pipit	樹鵲		6	+
<i>Ardea alba</i>	Great Egret	大白鷺	*	22	++
<i>Ardea cinerea</i>	Grey Heron	蒼鷺	*	2	+
<i>Ardeola bacchus</i>	Chinese Pond Heron	池鷺	*	69	++++
<i>Bubulcus coromandus</i>	Eastern Cattle Egret	牛背鷺	*	6	+
<i>Centropus sinensis</i>	Greater Coucal	褐翅鴉鵂		0	+
<i>Ceryle rudis</i>	Pied Kingfisher	斑魚狗	*	0	+
<i>Copsychus saularis</i>	Magpie Robin	鵲鴝		1	
<i>Corvus macrorhynchos</i>	Jungle Crow	大嘴烏鴉		2	+
<i>Corvus torquatus</i>	Collared Crow	白頸鴉	*	0	+
<i>Dicrurus hottentottus</i>	Hair-crested Drogon	髮冠卷尾		3	+
<i>Egretta garzetta</i>	Little Egret	小白鷺	*	66	+++
<i>Eudynamis scolopacea</i>	Common Koel	噪鵲		6	+
<i>Garrulax perspicillatus</i>	Masked Laughing Thrush	黑臉噪鵲		7	++
<i>Halcyon smyrnensis</i>	White-throated Kingfisher	白胸翡翠	*	4	
<i>Hirundo rustica</i>	Barn Swallow	家燕		31	++++
<i>Lonchura punctulata</i>	Spotted Munia	斑文鳥		0	+
<i>Milvus migrans</i>	Black Kite	黑鳶	*	3	
<i>Motacilla alba</i>	White Wagtail	白鶺鴒		13	+
<i>Nycticorax nycticorax</i>	Black-crowned Night Heron	夜鷺	*	1	
<i>Orthotomus sutorius</i>	Common Tailorbird	長尾縫葉鶯		2	+
<i>Passer montanus</i>	Eurasian Tree Sparrow	樹麻雀		7	++
<i>Phylloscopus inornatus</i>	Yellow-browed Warbler	黃眉柳鶯		0	+
<i>Phylloscopus proregulus</i>	Pallas's Leaf Warbler	黃腰柳鶯		2	+
<i>Pica pica</i>	Magpie	喜鵲		1	+
<i>Prinia inornata</i>	Plain Prinia	純色鷓鴣		1	+
<i>Pycnonotus jocosus</i>	Crested bulbul	紅耳鶇		0	+
<i>Pycnonotus sinensis</i>	Chinese Bulbul	白頭鶇		1	+
<i>Streptopelia chinensis</i>	Spotted Dove	珠頸斑鳩		36	++
<i>Sturnus nigricollis</i>	Black-necked Starling	黑領椋鳥		6	+
<i>Urocissa erythrorhyncha</i>	Red-billed Blue Magpie	紅咀藍鶇		2	+
<i>Zosterops japonicus</i>	Japanese White-eye	暗綠繡眼鳥		3	+
Total Point Count Abundance				388	
Total Waterbirds				175	

*For waterbird

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

Remarks: (1) According to S4.7 of the approved Baseline Monitoring Report (Ecology), "waterbirds" was defined as "waterbirds and wetland-dependent species", which was referenced to Monthly Waterbird Monitoring Biannual Reports prepared by the Hong Kong Bird Watching Society (Anon, 2018). Also, S.13.11.3.2 of NENT NDA EIA Study requires "Monitoring of Measures to Mitigate for Impacts of the Project on Wetland-dependent Fauna using the Ng Tung, Sheung Yue and Shek Sheung Rivers". Therefore, "wetland-dependent birds" should be considered as "waterbirds". As raptors and Collared Crow are "wetland-dependent species", they should be taken into consideration in data analysis and impact assessment on waterbirds.

Agreement No. SPW 07/2019 Shek Wu Hui Effluent Polishing Plant - Main Work Stage 1		Project No. MA19019	CINOTECH
Monthly Data Analysis for Ecological Monitoring	Date July 2020	Appendix I	

MA19019 - Waterbird Ecological Monitoring Result

Monitoring Month Jul
 Season Summer

Table II : Total Bird Abundance from Point Count						
Survey Information				Total Bird Abundance from Point Count		
No.	Date	Time	Tide Level	Individuals Recorded	Total	Species Recorded
#1	3 Jul 2020	10:00	High	49	75	16
		14:00	Low	26		8
#2	7 Jul 2020	12:00	High	69	90	12
		7:00	Low	21		6
#3	16 Jul 2020	9:00	High	17	52	9
		14:30	Low	35		8
#4	21 Jul 2020	11:00	High	25	40	9
		16:00	Low	15		5
#5	31 Jul 2020	9:30	High	46	131	8
		14:00	Low	85		17
Overall Total					388	

Table III: Total Waterbird Abundance from Point Count						
Survey Information				Numbers of Waterbirds		
No.	Date	Time	Tide Level	Individuals Recorded	Total	
#1	3 Jul 2020	10:00	High	12	29	
		14:00	Low	17		
#2	7 Jul 2020	12:00	High	34	50	
		7:00	Low	16		
#3	16 Jul 2020	9:00	High	12	33	
		14:30	Low	21		
#4	21 Jul 2020	11:00	High	8	23	
		16:00	Low	15		
#5	31 Jul 2020	9:30	High	18	40	
		14:00	Low	22		
Overall Total					175	
Average					34	

Table IV: T-Test Analysis for All Waterbirds

Baseline Data
 Monthly Average Abundance (Jul) 47.25
 Seasonal Average Abundance (Summer) 44.18

T-test

The following hypothesis was made and a one-tail t-test will be used to test the data collected from the monitoring:

H₀ The data collected in the reporting month falls within the normal distribution when compared to the baseline monitoring data.

H₁ The data collected does not falls within the normal distribution when compared to the baseline monitoring data.

If t-test value is smaller than the critical value, then rejects H₀.

For the data in the reporting month, the critical values are:

Crit. Value = -2.132 (95% Confidence Level)

Crit. Value = -3.747 (99% Confidence Level)

		Confidence Level		
T-values of Data in Reporting Month		95%	99%	
Abundance	Monthly	-2.364	✗	✓
	Season	-1.772	✓	✓

Overall: ✓ ✓

Remarks:

✓ = T-value falls within the confidence level, the impact monitoring data shows no significant difference to the baseline data.

✗ = T-value falls outside the confidence level, the impact monitoring data shows significant difference to the baseline data.

Agreement No. SPW 07/2019 Shek Wu Hui Effluent Polishing Plant - Main Work Stage I		Project No. MA19019	CINOTECH
Monthly Data Analysis for Ecological Monitoring	Date July 2020	Appendix I	

MA19019 - Waterbird Ecological Monitoring Result

Monitoring Month Jul
Season Summer

Table V: Abundance of Representative Waterbirds from Point Count											
Representative Species			Recorded Abundance							Baseline Data	
Species Name	Common Name	Chinese Name	3 Jul 2020	7 Jul 2020	16 Jul 2020	21 Jul 2020	31 Jul 2020	Total	Average	Avg (Jul)	Avg (Summer)
<i>Egretta garzetta</i>	Little Egret	小白鷺	12	24	8	6	16	66	13	25	20
<i>Ardea cinerea</i>	Grey Heron	蒼鷺	1	0	1	0	0	2	0	0	1
<i>Ardeola bacchus</i>	Chinese Pond Heron	池鷺	6	20	16	11	16	69	14	18	16
<i>Phalacrocorax carbo</i>	Great Cormorant	普通鸕鶿	0	0	0	0	0	0	0	0	0
<i>Ardea alba</i>	Great Egret	大白鷺	6	6	3	2	5	22	4	3	3
<i>Bubulcus coromandus</i>	Eastern Cattle Egret	牛背鷺	2	0	3	1	0	6	1	2	3

Table VI: T-test Analysis for Representative Waterbirds from Point Count

The following hypothesis was made and a one-tail t-test will be used to test the data collected from the monitoring:

H₀ The data collected in the reporting month falls within the normal distribution when compare to the baseline monitoring data.

H₁ The data collected does not falls within the normal distribution when compare to the baseline monitoring data.

If t-test value for a specific representative is smaller than the critical value, then rejects H₀.

For the data in the reporting month, the critical values are:

Crit. Value = -2.132 (95% Confidence Level)

Crit. Value = -3.747 (99% Confidence Level)

Representative Species			T-value	Confidence Level		T-value	Confidence Level		Overall
Species Name	Common Name	Chinese Name	Monthly	95%	99%	Seasonal	95%	99%	
<i>Egretta garzetta</i>	Little Egret	小白鷺	-3.609	✗	✓	-2.125	✓	✓	✓
<i>Ardea cinerea</i> *	Grey Heron*	蒼鷺*				N/A*			
<i>Ardeola bacchus</i>	Chinese Pond Heron	池鷺	-1.738	✓	✓	-0.815	✓	✓	✓
<i>Phalacrocorax carbo</i> *	Great Cormorant*	普通鸕鶿*				N/A*			
<i>Ardea alba</i>	Great Egret	大白鷺	2.339	✓	✓	2.291	✓	✓	✓
<i>Bubulcus coromandus</i>	Eastern Cattle Egret	牛背鷺	-0.943	✓	✓	-3.483	✗	✓	✓

Remarks

* Great Cormorant (*Phalacrocorax carbo*) and Grey Heron (*Ardea cinerea*) were not recognised as representative waterbird species during Summer.

✓ = T-value falls within the confidence level, the impact monitoring data shows no significant difference to the baseline data.

✗ = T-value falls outside the confidence level, the impact monitoring data shows significant difference to the baseline data.

Agreement No. SPW 07/2019		Project No. MA19019	CINOTECH
Shek Wu Hui Effluent Polishing Plant - Main Work Stage 1			
Monthly Data Analysis for Ecological Monitoring		Date July 2020	Appendix I

**APPENDIX J
PHOTO RECORDS OF ECOLOGICAL
MONITORING**

Appendix J - Photo Records of Ecological Monitoring

Part A - Conditions of Rivers



Sheung Yue River (Taken on 16 Jul 20)



Ng Tung River (Taken on 3 Jul 20)



Shek Sheung River (Taken on 7 Jul 20)

Part B – Waterbird Species



Amaurornis phoenicurus (Taken on 7 Jul 20)



Ardea alba (Taken on 7 Jul 20)



Ardea cinerea (Taken on 3 Jul 20)



Ardeola bacchus (Taken on 31 Jul 20)



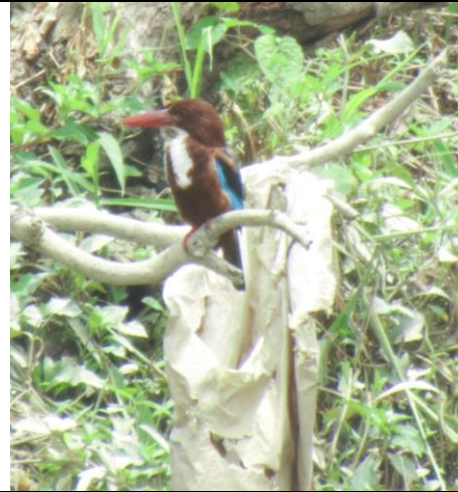
Bubulcus coromandus (Taken on 3 Jul 20)



Ceryle rudis (Taken on 16 Jul 20)



Egretta garzetta (Taken on 31 Jul 20)



Halcyon smyrnensis (Taken on 16 Jul 20)

Part C – Human Activities & Site Conditions



Mowing (Taken on 16 Jul 20)



Remote Boating (Taken on 16 Jul 20)



Excavation (Taken on 16 Jul 20)



Vibration Hammer (Taken on 21 Jul 20)



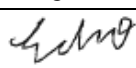

Oil stains (Taken on 7 Jul 20)

**APPENDIX K
SITE AUDIT SUMMARY**

**Weekly Site Inspection Record Summary
Inspection Information**

Checklist Reference Number	200709
Date	9 July 2020 (Thursday)
Time	9:30 – 12:15

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<i>B. Water Quality</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>C. Air Quality</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>D. Noise</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>E. Waste / Chemical Management</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>F. Ecology and Fisheries</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>G. Landscape and Visual</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>H. Permits /Licences</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>I. Others</i>	
	No follow-up items from the previous site inspection (ref no.: 200630).	

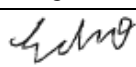

	Name	Signature	Date
Recorded by	Ms. Echo Hung		9 July 2020
Checked by	Mr. Eric Yan		13 July 2020

Agreement No. SPW 07/2019
Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1
Contract No. DC/2018/06

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	200714
Date	14 July 2020 (Tuesday)
Time	14:00 – 15:45

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<i>B. Water Quality</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>C. Air Quality</i>	
200714-R1	• Stockpile should be covered by impervious materials to prevent dust generation at Portion C.	C1
	<i>D. Noise</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>E. Waste / Chemical Management</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>F. Ecology and Fisheries</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>G. Landscape and Visual</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>H. Permits /Licences</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>I. Others</i>	
	No follow-up items from the previous site inspection (ref no.: 200709).	

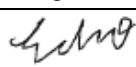

	Name	Signature	Date
Recorded by	Ms. Echo Hung		14 July 2020
Checked by	Mr. Eric Yan		15 July 2020

Agreement No. SPW 07/2019
Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1
Contract No. DC/2018/06

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	200721
Date	21 July 2020 (Tuesday)
Time	14:00 – 15:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<i>B. Water Quality</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>C. Air Quality</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>D. Noise</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>E. Waste / Chemical Management</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>F. Ecology and Fisheries</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>G. Landscape and Visual</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>H. Permits /Licences</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>I. Others</i>	
	Following up on the previous site inspection (ref no.: 200714): Item 200714-R1 was rectified/improved by the Contractor.	

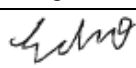

	Name	Signature	Date
Recorded by	Ms. Echo Hung		21 July 2020
Checked by	Mr. Eric Yan		22 July 2020

Agreement No. SPW 07/2019
Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1
Contract No. DC/2018/06

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	200728
Date	28 July 2020 (Tuesday)
Time	14:00 – 16:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<i>B. Water Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>C. Air Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>D. Noise</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>E. Waste / Chemical Management</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>F. Ecology and Fisheries</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>G. Landscape and Visual</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>H. Permits /Licences</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>I. Others</i>	
	No follow-up items from the previous site inspection (ref no.: 200721).	

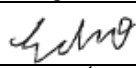

	Name	Signature	Date
Recorded by	Ms. Echo Hung		28 July 2020
Checked by	Mr. Eric Yan		29 July 2020

Agreement No. SPW 07/2019
Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1
Contract No. DC/2018/07

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	200709
Date	9 July 2020 (Thursday)
Time	9:30 – 12:15

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<i>B. Water Quality</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>C. Air Quality</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>D. Noise</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>E. Waste / Chemical Management</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>F. Ecology and Fisheries</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>G. Landscape and Visual</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>H. Permits /Licences</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>I. Others</i>	
	No follow-up items from the previous site inspection (ref no.: 200630).	

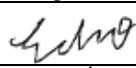

	Name	Signature	Date
Recorded by	Ms. Echo Hung		9 July 2020
Checked by	Mr. Eric Yan		13 July 2020

Agreement No. SPW 07/2019
Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1
Contract No. DC/2018/07

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	200714
Date	14 July 2020 (Tuesday)
Time	14:00 – 15:45

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<i>B. Water Quality</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>C. Air Quality</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>D. Noise</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>E. Waste / Chemical Management</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>F. Ecology and Fisheries</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>G. Landscape and Visual</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>H. Permits /Licences</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>I. Others</i>	
	No follow-up items from the previous site inspection (ref no.: 200709).	

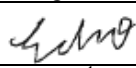

	Name	Signature	Date
Recorded by	Ms. Echo Hung		14 July 2020
Checked by	Mr. Eric Yan		15 July 2020

Agreement No. SPW 07/2019
Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1
Contract No. DC/2018/07

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	200721
Date	21 July 2020 (Tuesday)
Time	14:00 – 15:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<i>B. Water Quality</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>C. Air Quality</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>D. Noise</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>E. Waste / Chemical Management</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>F. Ecology and Fisheries</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>G. Landscape and Visual</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>H. Permits /Licences</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>I. Others</i>	
	No follow-up items from the previous site inspection (ref no.: 200714).	

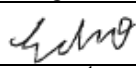

	Name	Signature	Date
Recorded by	Ms. Echo Hung		21 July 2020
Checked by	Mr. Eric Yan		22 July 2020

Agreement No. SPW 07/2019
Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1
Contract No. DC/2018/07

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	200728
Date	28 July 2020 (Tuesday)
Time	14:00 – 16:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<i>B. Water Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>C. Air Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>D. Noise</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>E. Waste / Chemical Management</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>F. Ecology and Fisheries</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>G. Landscape and Visual</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>H. Permits /Licences</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>I. Others</i>	
	No follow-up items from the previous site inspection (ref no.: 200721).	

	Name	Signature	Date
Recorded by	Ms. Echo Hung		28 July 2020
Checked by	Mr. Eric Yan		29 July 2020

**APPENDIX L
WASTE FLOW TABLE**

Monthly Summary Waste Flow Table for 2020 (year)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics	Chemical Waste	Others, e.g. general refuse
	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m3)
Jan	0.376	0.000	0.000	0.000	0.376	0.000	0.000	0.000	0.000	0.000	0.083
Feb	1.168	0.000	0.000	0.332	0.836	0.000	0.000	0.000	0.000	0.000	0.052
Mar	2.436	0.000	0.000	0.497	1.939	0.000	0.000	0.000	0.000	0.000	0.134
Apr	2.660	0.000	0.000	0.126	2.534	0.000	0.000	0.000	0.000	0.000	0.018
May	2.260	0.000	0.000	0.161	2.100	0.000	0.000	0.000	0.000	0.060	0.138
Jun	2.271	0.000	0.000	0.000	2.271	0.000	0.000	0.000	0.000	0.000	0.018
Sub-total	11.171	0.000	0.000	1.115	10.056	0.000	0.000	0.000	0.000	0.060	0.443
Jul	1.227	0.000	0.000	0.076	1.151	0.000	0.000	0.000	0.000	0.000	0.070
Aug											
Sep											
Oct											
Nov											
Dec											
Total	12.398	0.000	0.000	1.191	11.207	0.000	0.000	0.000	0.000	0.060	0.512

- Notes:
1. Assume the density of soil fill is 2 ton/m³.
 2. Assume the density of rock and broken concrete is 2.5 ton/m³
 3. Assume each truck of C&D wastes is 5m³
 4. The inert C&D materials except slurry and bentonite are disposed at Tuen Mun 38
 5. The slurry and bentonite are disposed at Tseung Kwun O 137
 6. The non-inert C&D wastes are disposed at NENT.
 7. Assume the density of metal is 7.850 kg/m³
 8. Assume the density of plastic is 941 kg/m³
 9. Assume the density of general refuse is 0.9 kg/l
 10. Density of waste oil is assumed to be 0.001 m³/l & 0.8 kg/l. Chemical waste includes waste oil.

Forecast of Total Quantities of C&D Materials to be Generated from the Contract										
Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Diposal as Public Fill	Imported Fill	Metals	Paper/card board packaging	Plastics (see Note 2)	Chemical Waste	Others, e.g. general refuse
(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)	(in '000m ³)
26.2	0.0	6.3	0.0	20.0	1.5	50.0	50.0	20.0	0.1	0.4

Notes:

- (2) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.
- (3) The Contractor shall also submit the latest forecast of the total amount of C&D materials expected to be generated from the Works, together with a breakdown of the nature where the total amount of C&D materials expected to be generated from the Works if equal to or exceed 50,000 m³.
- (4) The density of soil fill is 2.24 ton/m³.

Monthly Summary Waste Flow Table for 2020 (year)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics	Chemical Waste	Others, e.g. general refuse
	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)
Jan	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.006
Feb	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.005
Mar	0.143	0.000	0.000	0.000	0.143	0.000	0.00	0.000	0.000	0.000	0.000
Apr	0.121	0.000	0.000	0.000	0.121	0.000	30.74	0.000	0.000	0.000	0.003
May	0.372	0.000	0.000	0.000	0.372	0.000	19.71	0.000	0.000	0.000	0.005
Jun	0.227	0.000	0.000	0.000	0.227	0.000	134.46	0.000	0.000	0.000	0.009
Sub-total	0.862	0.000	0.000	0.000	0.862	0.000	184.91	0.000	0.000	0.000	0.028
Jul	0.180	0.000	0.000	0.056	0.124	0.076	49.67	0.000	0.000	9.600	0.006
Aug											
Sep											
Oct											
Nov											
Dec											
Total	1.043	0.000	0.000	0.056	0.986	0.076	234.58	0.000	0.000	9.600	0.035

- Notes:
1. Assume the density of soil fill is 2 ton/m³.
 2. Assume the density of rock and broken concrete is 2.5 ton/m³
 3. The inert C&D materials except slurry and bentonite are disposed at Tuen Mun 38
 4. The slurry and bentonite are disposed at Tseung Kwun O 137
 5. The non-inert C&D wastes are disposed at NENT
 6. Assume the density of general refuse is 0.9 ton/m³
 7. Density of waste oil is assumed to be 0.8 kg/l. Chemical waste includes waste oil.

Forecast of Total Quantities of C&D Materials to be Generated from the Contract										
Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Diposal as Public Fill	Imported Fill	Metals	Paper/cardboard packaging	Plastics (see Note 2)	Chemical Waste	Others, e.g. general refuse
(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)	(in '000m ³)
26.2	0.0	6.3	0.0	20.0	1.5	50.0	50.0	20.0	0.1	0.4

- Notes:
- (1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
 - (2) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.
 - (3) The Contractor shall also submit the latest forecast of the total amount of C&D materials expected to be generated from the Works, together with a breakdown of the nature where the total amount of C&D materials expected to be generated from the Works if equal to or exceed 50,000 m³.
 - (4) The density of soil fill is 2.24 ton/m³.

Environmental Aspect Evaluation Form

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

- Notes:
- (1) The performance targets are given in PS Clause 6A.27.8(14).
 - (2) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
 - (3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material
 - (4) The *Contractor* shall also submit the latest forecast of the total amount of C&D materials expected to be generated from the Works, together with a breakdown of the nature where the total amount of C&D materials expected to be generated from the Works is equal to or exceeding 50,000 m³. (PS Clause 6.21.7(4)(b) refers)

Name of Department: DSD

Contract No.: DE/2018/04

Forecast of Total Quantities of C&D Materials to be Generated from the Contract										
Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)
0.5	0	0.2	0	0.3	0	0	5	0	0	0.01

Notes:

- (1) The performance targets are given in PS Clause 6.21.8(14).
- (2) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
- (3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material

APPENDIX M
EVENT AND ACTION PLANS

Appendix M - Event Action Plans

Table M-1 Event/Action Plan for Air Quality

Event	Action			
	ET	IEC	ER	Contractor
Action level being exceeded by one sampling	<ol style="list-style-type: none"> 1. Identify source, investigate the causes of complaint and propose remedial measures; 2. Inform IEC and ER; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method. 	<ol style="list-style-type: none"> 1. Notify Contractor. 	<ol style="list-style-type: none"> 1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
Action level being exceeded by two or more consecutive sampling	<ol style="list-style-type: none"> 1. Identify source; 2. Inform IEC and ER; 3. Advise the ER on the effectiveness of the proposed remedial measures; 4. Repeat measurements to confirm findings; 5. Increase monitoring frequency to daily; 6. Discuss with IEC and Contractor on remedial actions required; 7. If exceedance continues, 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ET on the effectiveness of the proposed remedial measures; 5. Supervise Implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented. 	<ol style="list-style-type: none"> 1. Submit proposals for remedial actions to IEC within three working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate.

Appendix M - Event Action Plans

Event	Action			
	ET	IEC	ER	Contractor
	<p>arrange meeting with IEC and ER;</p> <p>8. If exceedance stops, cease additional monitoring.</p>			
Limit level being exceeded by one sampling	<ol style="list-style-type: none"> 1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform Contractor, IEC, ER, and EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented. 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within three working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate.
Limit level being exceeded by two or more consecutive sampling	<ol style="list-style-type: none"> 1. Notify IEC, ER, Contractor and EPD; 2. Identify source; 3. Repeat measurement to confirm findings; 	<ol style="list-style-type: none"> 1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consolidation with the 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within three working days of notification;

Appendix M - Event Action Plans

Event	Action			
	ET	IEC	ER	Contractor
	<p>4. Increase monitoring frequency to daily;</p> <p>5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;</p> <p>6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken;</p> <p>7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results;</p> <p>8. If exceedance stops, cease additional monitoring.</p>	<p>necessary to assure their effectiveness and advise the ER accordingly;</p> <p>3. Supervise the implementation of remedial measures.</p>	<p>IEC, agree with the Contractor on the remedial measures to be implemented;</p> <p>4. Ensure remedial measures properly implemented;</p> <p>5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.</p>	<p>3. Implement the agreed proposals;</p> <p>4. Resubmit proposals if problem still not under control;</p> <p>5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.</p>

Appendix M - Event Action Plans

Table M-2 Event/Action Plan for Construction Noise

Event	Action			
	ET	IEC	ER	Contractor
Action Level	<ol style="list-style-type: none"> 1. Notify IEC and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, ER and Contractor; 4. Discuss with the Contractor and formulate remedial measures; 5. Increase monitoring frequency to check mitigation effectiveness. 	<ol style="list-style-type: none"> 1. Review the analysed results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; 3. Supervise the implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; 4. Ensure remedial measures are properly implemented. 	<ol style="list-style-type: none"> 1. Submit noise mitigation proposals to IEC; 2. Implement noise mitigation proposals.
Limit Level	<ol style="list-style-type: none"> 1. Identify source; 2. Inform IEC, ER, EPD and Contractor; 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency; 5. Carry out analysis of 	<ol style="list-style-type: none"> 1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractors remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals;

Appendix M - Event Action Plans

Event	Action			
	ET	IEC	ER	Contractor
	<p>Contractor's working procedures to determine possible mitigation to be implemented;</p> <p>6. Inform IEC, ER and EPD the causes and actions taken for the exceedances;</p> <p>7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results;</p> <p>8. If exceedance stops, cease additional monitoring.</p>	<p>3. Supervise the implementation of remedial measures.</p>	<p>4. Ensure remedial measures properly implemented;</p> <p>5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.</p>	<p>4. Resubmit proposals if problem still not under control;</p> <p>5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.</p>

Appendix M - Event Action Plans

Table M-3 Event/Action Plan for Ecology

Action Level	Response	Limit Level	Response
<i>Construction Phase</i>			
Decline in numbers of all waterbird species relative to numbers during Baseline Monitoring such that the Action Level response is triggered.	Investigate cause and if cause identified as related to the Project instigate remedial action to remove or reduce source of disturbance.	Decline in numbers of all waterbird species relative to numbers during Baseline Monitoring such that the Limit Level response is triggered.	Investigate cause and if caused identified as related to the Project instigate remedial action.
Decline in numbers of any one waterbird species occurring in significant numbers* during Baseline Monitoring such that the Action Level response is triggered.	Investigate cause and if cause identified as related to the Project instigate remedial action to remove or reduce source of disturbance.	Decline in numbers of any one waterbird species occurring in significant numbers* during Baseline Monitoring such that the Limit Level response is triggered.	Investigate cause and if caused identified as related to the Project instigate remedial action.

Appendix M - Event Action Plans

Table M-4 Event/Action Plan for Landscape and Visual

Event	Action			
	ET	IEC	ER	Contractor
Non-conformity on one occasion	<ol style="list-style-type: none"> 1. Inform the Contractor, IEC and ER; 2. Discuss remedial actions with IEC, ER and Contractor 3. Monitor remedial actions until rectification has been completed. 	<ol style="list-style-type: none"> 1. Check inspection report; 2. Check Contractor's working method; 3. Discuss with ET, ER and Contractor on possible remedial measures; 4. Advise ER on effectiveness of proposed remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of non-conformity in writing; 2. Review and agree on the remedial measures proposed by the Contractor; 3. Supervise implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Identify source and investigate the non-conformity; 2. Implement remedial measures; 3. Amend working methods agreed with ER as appropriate; 4. Rectify damage and undertake any necessary replacement.

Appendix M - Event Action Plans

Event	Action			
	ET	IEC	ER	Contractor
Repeated Non-conformity	<ol style="list-style-type: none"> 1. Identify source; 2. Inform the Contractor, IEC and ER; 3. Discuss inspection frequency; 4. Discuss remedial actions with IEC, ER and Contractor; 5. Monitor remedial actions until rectification has been completed; 6. If non-conformity stops, cease additional monitoring. 	<ol style="list-style-type: none"> 1. Check inspection report; 2. Check Contractor's working method; 3. Discuss with ET, ER and Contractor on possible remedial measures; 4. Advise ER on effectiveness of proposed remedial measures. 	<ol style="list-style-type: none"> 1. Notify the Contractor; 2. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented; 3. Supervise implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Identify source and investigate the non-conformity; 2. Implement remedial measures; 3. Amend working methods agreed with ER as appropriate; 4. Rectify damage and undertake any necessary replacement. Stop relevant portion of works as determined by ER until the non-conformity is abated.

**APPENDIX N
ENVIRONMENTAL MITIGATION
IMPLEMENTATION SCHEDULE (EMIS)**

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve	Status
Air Quality Impact							
S2.3.1.3	<p>Dust suppression measures stipulated in the Air Pollution Control (Construction Dust) Regulation and good site practices:</p> <p>Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading;</p> <p>Any dusty material remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads;</p> <p>A stockpile of dusty material should not be extended beyond the pedestrian barriers, fencing or traffic cones;</p> <p>The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle;</p> <p>Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores;</p> <p>When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period.</p> <p>The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials;</p>	To minimize the dust impact	Contractor	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3	Air Pollution Control Ordinance (APCO) and Air Pollution Control (Construction Dust) Regulation	<p>^</p> <p>*</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve	Status
S2.3.1.3	Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously;	To minimize the dust impact	Contractor	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3	Air Pollution Control Ordinance (APCO) and Air Pollution Control (Construction Dust) Regulation	^
	Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet;						^
	Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding;						^
	Any skip hoist for material transport should be totally enclosed by impervious sheeting;						N/A
	Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides;						N/A
	Cement or dry PFA delivered in bulk should be 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;						N/A
	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 an effective fabric filter or equivalent air pollution control system; and						N/A
	Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies						^

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve	Status
Noise Impact							
S3.2.1.1	Use of movable barrier, enclosure, acoustic mat and quiet plant. Use of wooden frames barrier with a small-cantilevered upper portion of superficial density not less than 14kg/m ² on a skid footing with 25mm thick internal sound absorptive lining.	To minimize construction noise impact arising from the Project at the affected noise sensitive receivers (NSRs)	Contractor	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3	EIAO-TM, Noise Control Ordinance (NCO)	^
S3.2.1.2	Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program.	To minimize construction noise impact arising from the Project at the affected NSRs	Contractor	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3	EIAO-TM, NCO	^
	Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program.						^
	Mobile plant, if any, should be sited as far away from NSRs as possible.						^
	Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum.						^
	Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.						^
	Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities.						N/A

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve	Status
Ecological Impact							
S4.2.1.1	Solid dull green noise/visual barriers of at least 2m high shall be erected and maintained between active works area and all areas of ecological importance.	Minimize noise and human disturbances during construction phase.	Contractor	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3	EIAO-TM	^
S4.2.1.2	Avoid unnecessary lighting.	Minimize mortality impacts on birds.	Design / Contractor/ Plant Operator	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3	EIAO-TM	^
S4.2.1.3	Good construction site practice to minimise dust generation should be followed on all construction sites. Measures to avoid, minimise and mitigate impacts on air quality are detailed in this schedule	Minimize dust generation from construction sites.	Contractor	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3	EIAO-TM	^
S4.2.1.4	Temporary sewerage and drainage to be designed and installed to collect wastewater and prevent it from entering water bodies;	Avoid, minimise and mitigate impact on water quality	Contractor	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3	EIAO-TM	^
	Proper locations well away from nearby water bodies should be used for temporary storage of materials (i.e. equipment, filling materials, chemicals and fuel) and temporary stockpiles of construction debris and spoil, and these should be identified before commencement of works;						^
	To prevent muddy water entering nearby water bodies, work sites close to nearby water bodies should be isolated, using such items as sandbags or silt curtains with lead edge at bottom and properly supported props. Other protective measures should also be taken to ensure that no pollution or siltation occurs to the water gathering grounds of the work sites;						^
	Construction debris and spoil should be covered and/or properly disposed of as soon as possible to avoid these being washed into nearby water bodies;						^

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve	Status
S4.2.1.4	Proper locations for discharge outlets of temporary wastewater treatment facilities well away from sensitive receivers should be identified;	Avoid, minimise and mitigate impact on water quality	Contractor	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3	EIAO-TM	^
	Adequate lateral support should be erected where necessary in order to prevent soil/mud from slipping into water bodies;						^
	Site boundaries should be clearly marked and any works beyond the boundary strictly prohibited;						^
	Regular water monitoring and site audit should be carried out at adequate points along any watercourses where construction works are underway upstream within their catchments and also on the Ng Tung, Sheung Yue and Shek Sheung Rivers. If the monitoring and audit results show that pollution occurs, adequate measures including temporarily cessation of works should be considered;						^
	Excavation profiles should be properly designed and executed with attention to the relevant requirements for environment, health and safety;						^
	Where soil to be excavated is situated beneath the groundwater table, it may be necessary to lower the groundwater table by installing well points or similar means;						N/A
	Stockpiling sites should be lined with impermeable sheeting and bunded. Stockpiles should be properly covered by impermeable sheeting to reduce dust emission during dry season or contaminated run-off during rainy season. Watering should be avoided on stockpiles of contaminated soil to minimize contaminated runoff and construction materials should be properly covered and located away from nearby water bodies; and						^
	Supply of suitable clean backfill material after excavation, if required.						N/A
	Vehicles containing any excavated materials should be suitably covered to limit potential dust emissions or contaminated run-off, and truck bodies and tailgates should be sealed to prevent discharge during transport or during wet season;						^
	Speed control for the trucks carrying contaminated materials should be enforced;						^
	Vehicle wheel washing facilities at construction sites' exit points should be established and used, where necessary						^

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve	Status
Water Quality Impact							
S5.2.2.1	Construction Site Runoff Practices and measures provided in the Practice Note for Professional Persons on Construction Site Drainage, (PROPECC PN1/94) should be followed where applicable.	Control construction runoff	Contractors	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3	EIAO-TM, WPCO, EIAO	^
S5.2.2.2 – S5.2.2.3	Portable chemical toilets and sewage holding tanks should be provided for handling the construction sewage generated by the workforce. A licensed Contractor should be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance. Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment during the construction phase of the Project. Regular environmental audit on construction site should be conducted in order to provide an effective control of any malpractices and achieve continual improvement of environmental performance on site. It is anticipated that sewage generation during the construction phase of the Project would not cause water quality impact after undertaking all required measures	Handling of site sewage	Contractors	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3	EIAO-TM, WPCO, EIAO	^
	^						

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve	Status
Waste Management							
S6.2.2.1	Nomination of an approved person, such as a site manager, to be responsible for the implementation of good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site;	Minimize waste generation during construction	Contractor	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3	Waste Disposal Ordinance (WDO)	^
	Training of site personnel in site cleanliness, appropriate waste management procedures and concepts of waste reduction, reuse and recycling;						^
	Provision of sufficient waste disposal points and regular collection for disposal;						^
	Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers;						^
	Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors;						^
	An Environmental Management Plan (EMP) should be prepared by the contractor and submitted to the Supervisor for approval.						^
S6.2.3.1	Segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling of materials and their proper disposal;	Reduce waste generation	Contractor	Work Sites	Prior to the commencement of construction of Main Works Stage 1, Stage 2 and Stage 3	WDO	^
	Proper storage and site practices to minimize the potential for damage and contamination of construction materials;						^
	Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste;						^
	Sort out demolition debris and excavated materials from demolition works to recover reusable/recyclable portions (i.e. soil, broken concrete, metal etc.); and						^
	Provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling.						^

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve	Status
6.2.4.1	Waste, such as soil, should be handled and stored well to ensure secure containment, thus minimizing the potential of pollution;	Minimize waste impacts arising from waste storage	Contractor	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3	WDO	^
	Stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; and						*
	Different locations should be designated to stockpile each material to enhance reuse.						^
S6.2.4.2	Remove waste in timely manner;	Minimize waste impacts arising from waste storage	Contractor	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3	WDO	^
	Employ the trucks with cover or enclosed containers for waste transportation						^
	Obtain relevant waste disposal permits from the appropriate authorities						^
	Disposal of waste should be done at licensed waste disposal facilities.						^
S6.2.5.2	Maintain temporary stockpiles and reuse excavated fill material for backfilling;	Minimize waste impacts from excavated and C&D materials	Contractor	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3	Land (Miscellaneous Provisions) Ordinance, WDO, ETWB TCW No. 19/2005	^
	Carry out on-site sorting;						^
	Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate;						^
	Adopt “selective demolition” technique to demolish the existing structure and facilities with a view to recovering broken concrete effectively for recycling purpose, where possible; and						N/A
	Implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified.						^
S6.2.5.3	The Contractor should recycle as much as possible of the C&DM on-site. Public fill and C&DM waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. For example, concrete and masonry can be crushed and used as fill, and steel reinforcing bar can be used by scrap steel mills. Different areas of the work sites should be designated for such segregation and storage.	Minimize waste impacts from building demolition and new building construction	Contractor	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3	Land (Miscellaneous Provisions) Ordinance, WDO, ETWB TCW No. 19/2005	^

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve	Status
S6.2.5.3	The use of wooden hoardings shall not be allowed. An alternative material, such as metal, aluminium or alloy etc, could be used.	Minimize waste impacts from building demolition and new building construction	Contractor	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3	Land (Miscellaneous Provisions) Ordinance, WDO, ETWB TCW No. 19/2005	^
	Government has developed a charging policy for the disposal of waste to landfill at present. It will provide additional incentive to reduce the volume of generated waste and ensure proper segregation to allow reuse of the inert material on site when implemented.						^
	In order to minimize the impacts of the demolition works, the generated wastes must be cleared as quickly as possible after demolition. Therefore, the demolition and clearance works should be undertaken simultaneously. To facilitate proper segregation of inert and non-inert C&D material arising from demolition works, selective demolition method should be adopted.						^
S6.2.5.4	If chemical wastes are produced at the construction site, the Contractors should register with EPD as chemical waste producers.	Control the chemical waste and ensure proper storage, handling and disposal	Contractor	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3	Waste Disposal (Chemical Waste General) Regulation, Code of Practice on the Packaging, Labelling and Storage of Chemical Waste	^
	Chemical wastes should be stored in appropriate containers and collected by a licensed chemical waste contractor. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical waste that cannot be recycled should be disposed of at either the Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.						^
S6.2.5.5	General refuse should be stored in enclosed bins separately from construction and chemical wastes.	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3	Waste Disposal (Chemical Waste General) Regulation	^
	Recycling bins should also be placed to encourage recycling.						^
	Preferably enclosed and covered areas should be provided for general refuse collection and routine cleaning for these areas should also be implemented to keep areas clean.						^
	A reputable waste collector should be employed to remove general refuse on a daily basis.						^

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve	Status
Landscape and Visual							
S7.3.1.1	For areas unavoidably disturbed by the Project on a short term basis e.g. works areas, the general principle to try and restore these to their former state to suit future land use, should be adhered to.	Minimize the impact to the landscape and visual	Contractor	Work Sites	Prior to construction and construction phase		N/A
	With regard to topsoil, where identified, it should be stripped, treated appropriately, and where suitable and practical stored for re-use in the construction of the soft landscape works such as roadside amenity strips, and open space sites.						N/A
S7.3.2.1	<p>MM4 – Tree Protection & Preservation</p> <p>Existing trees to be retained within the Project Site should be carefully protected during construction. In particular Old and Valuable Trees (OVTs) will be preserved according to ETWB TC (Works) No. 29/2004. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in Contractor’s works areas. A detailed tree survey will be carried out for the Tree Removal Application (TRA) process which will be carried out at the later detailed design stage of the Project. The detailed tree survey will propose which trees should be retained, transplanted or felled and will include details of tree protection measures for those trees to be retained.</p>	Protect and Preserve Trees	Designer / Contractor	Work Sites	Prior to construction and construction phase	ETWB TCW No. 29/2004 and DEVB TC(W) No.7/2015	^

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve	Status
S7.3.2.1	<p>MM5 - Tree Transplantation</p> <p>Trees unavoidably affected by the Project works should be transplanted where practical. Trees should be transplanted straight to their final receptor site and not held in a temporary nursery as far as possible. A detailed Tree Transplanting Specification shall be provided in the Contract Specification, where applicable. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the project programme. A detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBTC No. 2/2004 and DEVB TC(W) No. 7/2015 and final locations of transplanted trees should be agreed prior to commencement of the work. For trees associated with highways e.g. roadside planting along highways, that are unavoidably affected and should be transplanted, HyD HQ/GN/13 'Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit' should be followed.</p>	Transplant Trees where suitable for transplantation	Designer / Contractor	Work Sites where possible. Otherwise consider offsite locations	Prior to construction, construction phase and operation phase	<p>DEVB TC(W) No. 7/2015 and ETWB TCW No.2/2004</p> <p>HyD HQ/GN/13 Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit</p>	N/A
S7.3.2.1	<p>MM6 - Slope Landscaping</p> <p>Site formation should be reduced as far as possible. Hydroseeding of modified slopes should be done as soon as grading works are completed to prevent erosion and subsequent loss of landscape resources and character. Woodland tree seedings and/or shrubs should be planted where slope gradient and site conditions allow.</p>	To avoid substantial slope cutting and fill slopes.	Designer / Contractor	Work Sites	Prior to construction, construction phase and operation phase	GEO Publication (1999) - Use of Vegetation as Surface Protection on Slope; GEO Publication No. 1/2011-Technical Guidelines on Landscape Treatment for Slopes	N/A
	<p>In addition, landscape planting should be provided for the retaining structures associated with modified slopes where conditions allow. All slope landscaping works should comply with GWO Publication No. 1/2011-Technical Guidelines on Landscape Treatment for Slopes.</p>	To prevent erosion and subsequent loss of landscape resources and character.					N/A
		To ensure man-made slopes are as visually amenable as possible.					

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve	Status
S7.3.2.1	MM7 - Compensatory Planting Compensatory tree planting for felled trees shall be provided to the satisfaction of relevant Government departments. Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Removal Application process under DEVB TC(W) No. 7/2015.	Compensate for trees and shrubs lost due to the Project	Designer / Contractor	Work Sites where possible. Otherwise consider offsite locations	Prior to construction, construction phase and operation phase	DEVB TC(W) No. 7/2015 and ETWB TCW No. 2/2004	N/A
	Compensatory planting is proposed at the potential open areas such as open spaces, amenity areas, open areas of the streetscapes, as well as the open areas within development lots.						N/A
	Compensatory planting for shrubs should be considered in suitable locations. Native species such as <i>Melastoma malabathricum</i> , <i>Diospyros vaccinioides</i> , <i>Gardenia jasminoides</i> , <i>Ixora chinensis</i> , <i>Ligustrum sinense</i> , <i>Litsea rotundifolia</i> , <i>Melastoma dodecandrum</i> , <i>Atalantia buxifolia</i> , <i>Rhodomyrtus tomentosa</i> , <i>Raphiolepis indica</i> , and <i>Rhododendron simsii</i> are suggested.						N/A
S7.3.2.1	MM9 - Vertical Greening Planting of climbers to grow up vertical surfaces were appropriate.	Soften hard surfaces and facilities	Designer / Contractor	On appropriate structures	Prior to construction, construction phase and operation phase	ETWB TCW No.11/2004 – Cyber Manual for Greening	N/A
S7.3.2.1	MM10 - Green Roof Roof greening where appropriate should be established on proposed buildings as per the guidelines stated. These guidelines provide further details including information regarding structural loading, design, maintenance, etc. considerations as well as providing information on what types of plants might be suitable.	Reduce exposure to untreated concrete surfaces and particularly mitigate visual impact to visually sensitive receivers (VSRs) at high levels. Provide greening.	Designer / Contractor	On appropriate buildings	Prior to construction, construction phase and operation phase	CIBSE HK Branch, Technical Guidelines for Green Roof Systems in Hong Kong (2011); ArchSD/Urban Study on Green Roof Application in HK (2007)	N/A

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve	Status
S7.3.2.1	MM11 - Screen Planting Tall screen/buffer trees and shrubs should be planted. This measure may additionally form part of the compensatory planting.	To screen proposed structures such as roads and buildings. Improve compatibility with the surrounding environment and create a pleasant pedestrian environment	Designer / Contractor	Along roads, around suitable built structures, or around VSRs to contain their view out to the structures.	Prior to construction, construction phase and operation phase	ETWB TCW No. 10/2013 and 3/2006	N/A
S7.3.2.1	MM16 - Screen Hoarding Screen hoarding shall be erected along areas of the construction works site boundary where the works site borders publically accessible routes and/or is close to visually sensitive receivers (VSRs). It is proposed that the screening be compatible with the surrounding environment and where possible, non-reflective, recessive colours be used. Any works areas near the ecological sensitive areas should erect 2m high dull green site boundary fence.	To screen undesirable views of the works site.	Designer	Work Sites	Construction phase		^
S7.3.2.1	MM17 - Light Control Construction day and night time lighting should be controlled to minimize glare impact to adjacent VSRs during the Construction phase. Street and night time lighting shall also be controlled to minimize glare impact to adjacent VSRs during the operation phase.	To minimize glare impact to adjacent VSRs.	Designer / Contractor	Work Sites and/or the Plant	Construction phase and operation phase		^

Remarks: EM&A Programme under FEP-02/474/2013	
^	Compliance of mitigation measure;
N/A	Not applicable at this stage;
N/A(1)	Not observed;
*	Recommendation was made during site audit but improved/retified by the contractor;
#	Recommendation was made during site audit but not yet improved/retified by the contractor;
X	Non-compliance of mitigation measure;
•	Non-compliance but rectified by the contractor.

**APPENDIX O
SUMMARIES OF ENVIRONMENTAL
COMPLAINT, WARNING, SUMMON
AND NOTIFICATION OF SUCCESSFUL
PROSECUTION**

Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1

Appendix O – Summary of Environmental Complaint, Warning, Summon and Notification of Successful Prosecution

Reporting Month: July 2020

Log Ref.	Location	Received Date	Details of Complaint/Warning/Summon and Prosecution	Investigation/Mitigation Action	Status
1	Expansion Site of SWHSTP (Portion C)	18 March 2020	Muddy water was suspected to be discharged from the expansion site of SWHSTP to Shek Sheung River, manholes and foul drains nearby	<ul style="list-style-type: none"> • Employed suction truck and dump truck to clear the silt and mud at Shek Sheung River • Arranged to repair the wastewater treatment system • Installed additional sedimentation tanks and wastewater treatment system to increase the on-site treatment capacity • Clean the slurry sediment released from the outlet regularly by suction trucks • Avoid damage of underground drains and pipes caused by existing construction works • Avoid illegal discharge from the Site into foul drains and manholes 	Complaint Investigation Report was submitted in April 2020

Remarks: No environmental complaint/warning/summon and prosecution was received in the reporting period.

APPENDIX P
SUMMARY OF EXCEEDANCE

Agreement No. SPW 07/2019
Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1

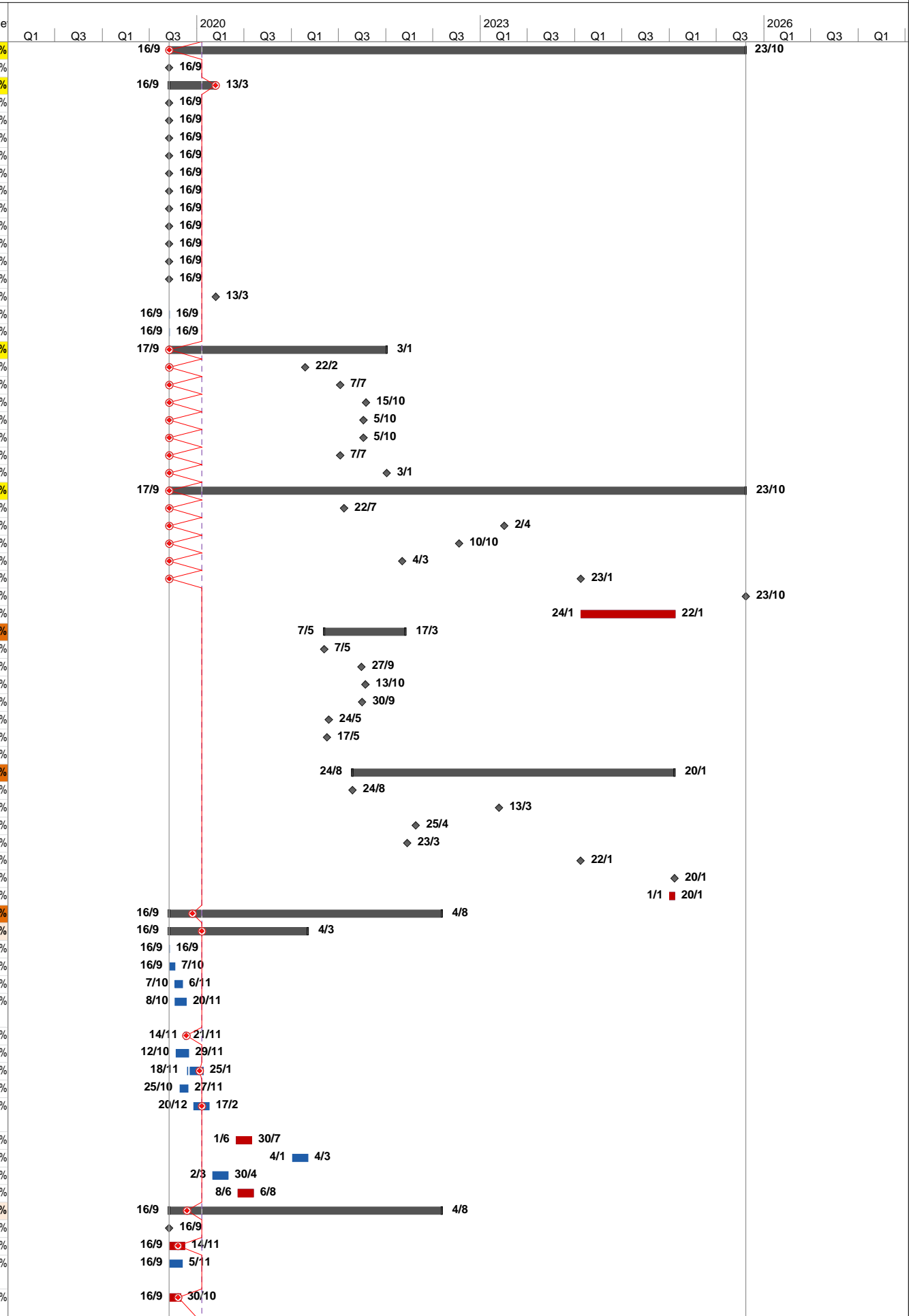
Appendix P – Summary of Exceedance

Reporting Month: July 2020

- (A) Exceedance Report for Air Quality**
(NIL in the reporting month)
- (B) Exceedance Report for Construction Noise**
(NIL in the reporting month)
- (C) Exceedance Report for Ecology**
(NIL in the reporting month)

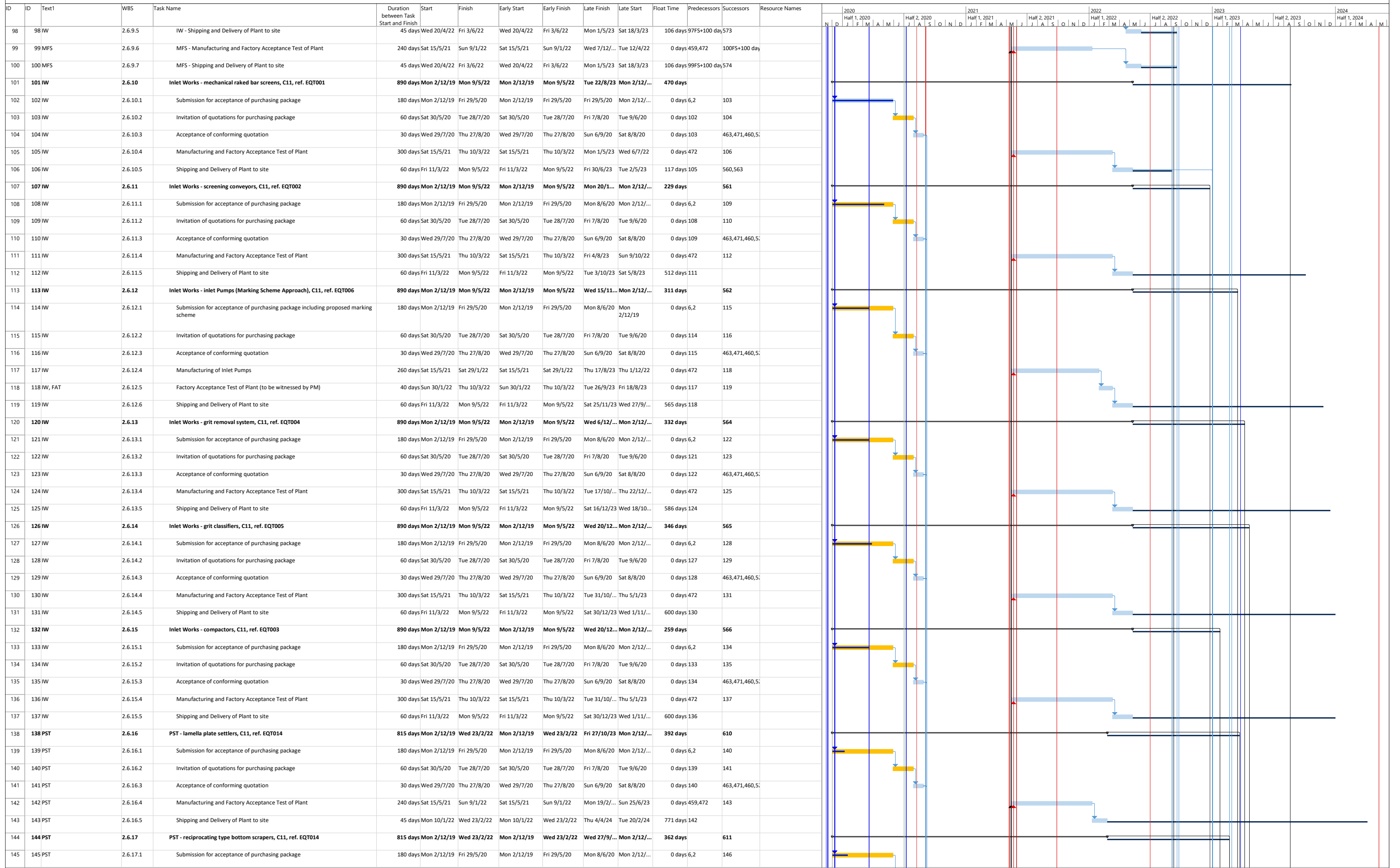
**APPENDIX Q
TENTATIVE CONSTRUCTION
PROGRAMME**

ID	KD	Task Name	Duration	Start	Finish	Actual Start	Actual Finish	Total Slack	Predecessors	Successors	% Complete
1		Contract Dates	2229.2 days	Mon 16/9/19	Thu 23/10/25	Mon 16/9/19	NA	0 days			0%
2		Starting Date	0 days	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	4,5FS+180 days,6,7,8,9,11,12,1		100%
3		Access Date (cal. day)	180 days	Mon 16/9/19	Fri 13/3/20	Mon 16/9/19	NA	0 days			99%
4		Portion A-1	0 days	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%
5		Portion A-2	0 days	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2FS+180 days		100%
6		Portion C-1A	0 days	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%
7		Portion C-1B	0 days	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%
8		Portion C-2A	0 days	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%
9		Portion C-2B	0 days	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%
10		Portion C-2C	0 days	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%
11		Portion C-2D	0 days	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%
12		Portion C-3	0 days	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%
13		Portion C-4	0 days	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%
14		Portion C-5	0 days	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%
15		Portion C-6	0 days	Fri 13/3/20	Fri 13/3/20	NA	NA	0 days	2FS+180 days	311,303	0%
16		Works Area WA1	1 day	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%
17		Works Area WA2-A	1 day	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%
18		Key Date (cal. day)	840 days	Tue 17/9/19	Mon 3/1/22	NA	NA	0 days			0%
19		KD1A (525 days after starting date)	525 days	Tue 17/9/19	Mon 22/2/21	NA	NA	0 days			0%
20		KD2A (660 days after starting date)	660 days	Tue 17/9/19	Wed 7/7/21	NA	NA	0 days			0%
21		KD3A (760 days after starting date)	760 days	Tue 17/9/19	Fri 15/10/21	NA	NA	0 days			0%
22		KD3B (750 days after starting date)	750 days	Tue 17/9/19	Tue 5/10/21	NA	NA	0 days			0%
23		KD3C (750 days after starting date)	750 days	Tue 17/9/19	Tue 5/10/21	NA	NA	0 days			0%
24		KD3D (660 days after starting date)	660 days	Tue 17/9/19	Wed 7/7/21	NA	NA	0 days			0%
25		KD3E (840 days after starting date)	840 days	Tue 17/9/19	Mon 3/1/22	NA	NA	0 days			0%
26		Completion Date (cal. day)	2228.2 days	Tue 17/9/19	Thu 23/10/25	NA	NA	0 days			0%
27		Section 1 of Works (675 days after starting date)	675 days	Tue 17/9/19	Thu 22/7/21	NA	NA	0 days			0%
28		Section 2 of Works (1,295 days after starting date)	1294 days	Tue 17/9/19	Sun 2/4/23	NA	NA	0 days			0%
29		Section 3 of Works (1,120 days after starting date)	1120 days	Tue 17/9/19	Mon 10/10/22	NA	NA	0 days			0%
30		Section 4 of Works (900 days after starting date)	900 days	Tue 17/9/19	Fri 4/3/22	NA	NA	0 days			0%
31		Section 5 of Works (1,590 days after starting date)	1590 days	Tue 17/9/19	Tue 23/1/24	NA	NA	0 days	32,33		0%
32		Defect Liability Period	365 days	Wed 24/1/24	Thu 23/10/25	NA	NA	0 days	31		0%
33		Soft Landscape Establishment Works	365 days	Wed 24/1/24	Wed 22/1/25	NA	NA	0 days	31		0%
34	*	Planned Completion - Key Date (cal. day)	314 days	Fri 7/5/21	Thu 17/3/22	NA	NA	-74.8 days			0%
35	KD1A	KD1A (525 days after starting date)	0 days	Fri 7/5/21	Fri 7/5/21	NA	NA	-74.8 days	140FF,138FF,330,		0%
36	KD2A	KD2A (660 days after starting date)	0 days	Mon 27/9/21	Mon 27/9/21	NA	NA	-83 days	366FF		0%
37	KD3A	KD3A (760 days after starting date)	0 days	Wed 13/10/21	Wed 13/10/21	NA	NA	0 days	180FF,181FF		0%
38	KD3B	KD3B (750 days after starting date)	0 days	Thu 30/9/21	Thu 30/9/21	NA	NA	4 days	198FF,199FF		0%
39	KD3C	KD3C (750 days after starting date)	0 days	Mon 24/5/21	Mon 24/5/21	NA	NA	133 days	210FF,211FF		0%
40	KD3D	KD3D (660 days after starting date)	0 days	Mon 17/5/21	Mon 17/5/21	NA	NA	50 days	236FF,237FF		0%
41	KD3E	KD3E (840 days after starting date)	0 days	Thu 17/3/22	Thu 17/3/22	NA	NA	-73.8 days	253FF,248FF,284F		0%
42	*	Planned Completion - Section of the Works (cal. day)	1245.2 days	Tue 24/8/21	Mon 20/1/25	NA	NA	-33.8 days			0%
43	SW1	Section 1 of Works (675 days after starting date)	0 days	Tue 24/8/21	Tue 24/8/21	NA	NA	-33.8 days	142FF,309FF,141F		0%
44	SW2	Section 2 of Works (1,295 days after starting date)	0 days	Mon 13/3/23	Mon 13/3/23	NA	NA	20 days	371FF,368FF,370F		0%
45	SW3	Section 3 of Works (1,120 days after starting date)	0 days	Mon 25/4/22	Mon 25/4/22	NA	NA	167 days	212FF,213FF,238F		0%
46	SW4	Section 4 of Works (900 days after starting date)	0 days	Wed 23/3/22	Wed 23/3/22	NA	NA	-20 days	269FF,273FF,304F		0%
47	SW5	Section 5 of Works (1,590 days after starting date)	0 days	Mon 22/1/24	Mon 22/1/24	NA	NA	0 days	341FF,339FF,340F		0%
48		Defect Liability Period	0 days	Mon 20/1/25	Mon 20/1/25	NA	NA	0 days	343FF		0%
49		Soft Landscape Establishment Works	20 days	Wed 1/1/25	Mon 20/1/25	NA	NA	0 days	343FF		0%
50		Submissions (cal. day)	1054 days	Mon 16/9/19	Thu 4/8/22	Mon 16/9/19	NA	20 days			62%
51		Subletting Package	536 days	Mon 16/9/19	Thu 4/3/21	Mon 16/9/19	NA	63.8 days			52%
52		Prepare & Submit Subletting Procedures	1 day	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2	53	100%
53		PM Review & Accept Subletting Procedures	21 days	Mon 16/9/19	Mon 7/10/19	Mon 16/9/19	Mon 7/10/19	0 days	52	55,57,54,56	100%
54		Subletting for Preliminary Works (Instrumentation Monitoring etc.)	30 days	Mon 7/10/19	Wed 6/11/19	Mon 7/10/19	Wed 6/11/19	0 days	53	311	100%
55		Subletting for Drainage Diversion Works for UV System no.1& Effluent Pumping Station No.1	44 days	Tue 8/10/19	Wed 20/11/19	Tue 8/10/19	Wed 20/11/19	0 days	53	308	100%
56		Subletting for the Temporary Site accommodation (On hold)	8 days	Thu 14/11/19	Thu 21/11/19	Thu 14/11/19	NA	32 days	53	111	99%
57		Subletting for Pre-drilling Works	49 days	Sat 12/10/19	Fri 29/11/19	Sat 12/10/19	Fri 29/11/19	0 days	53	58SS+15 days,59SS+15 days,1	100%
58		Subletting for Pre-bored Socketed Steel H-Pile	45 days	Mon 18/11/19	Sat 25/1/20	Mon 18/11/19	NA	7.25 days	57SS+15 days	355,150,191,207,220,230,245,1	90%
59		Subletting for Contractor's Designer for Temporary Works	32 days	Fri 25/10/19	Wed 27/11/19	Fri 25/10/19	Wed 27/11/19	0 days	57SS+15 days	61,60,74,62,63,64	100%
60		Subletting for ELS Works	60 days	Fri 20/12/19	Mon 17/2/20	Fri 20/12/19	NA	105 days	59	127,154,160,166,172,179,193,2	80%
61		Subletting for R.C Works	60 days	Mon 1/6/20	Thu 30/7/20	NA	NA	-4 days	59	128,194,210,223,359,272,252,2	0%
62		Subletting for ABWS & BS Works	60 days	Mon 4/1/21	Thu 4/3/21	NA	NA	63.8 days	59	142,184,201,213,224,239,254,2	0%
63		Subletting for Pipeworks, Utilities, and Roadworks	60 days	Mon 2/3/20	Thu 30/4/20	NA	NA	227 days	59	336,333,334,335,332	0%
64		Subletting for Hard Landscape, Soft Landscape, and others	60 days	Mon 8/6/20	Thu 6/8/20	NA	NA	0 days	59	339,340,341,343	0%
65		Statutory Submission, Submission & Approval	1054 days	Mon 16/9/19	Thu 4/8/22	Mon 16/9/19	NA	20 days			82%
66		Prepare and Submit Subcontractor Management Plan (SMP)	0 days	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%
67		Prepare and Submit Interface Management Plan	60 days	Mon 16/9/19	Thu 14/11/19	Mon 16/9/19	NA	0 days	2		58%
68		Prepare TTA Plan, submit & approve for footpath for Stage 1 - Drainage Diversion	51 days	Mon 16/9/19	Tue 5/11/19	Mon 16/9/19	Tue 5/11/19	0 days	2	308,70	100%
69		Prepare TTA Plan, submit & approve for carriageway at Chuk Wan Road for CLP 13kV substation	45 days	Mon 16/9/19	Wed 30/10/19	Mon 16/9/19	NA	0 days	2		78%



Task  Milestone  Summary  Critical 

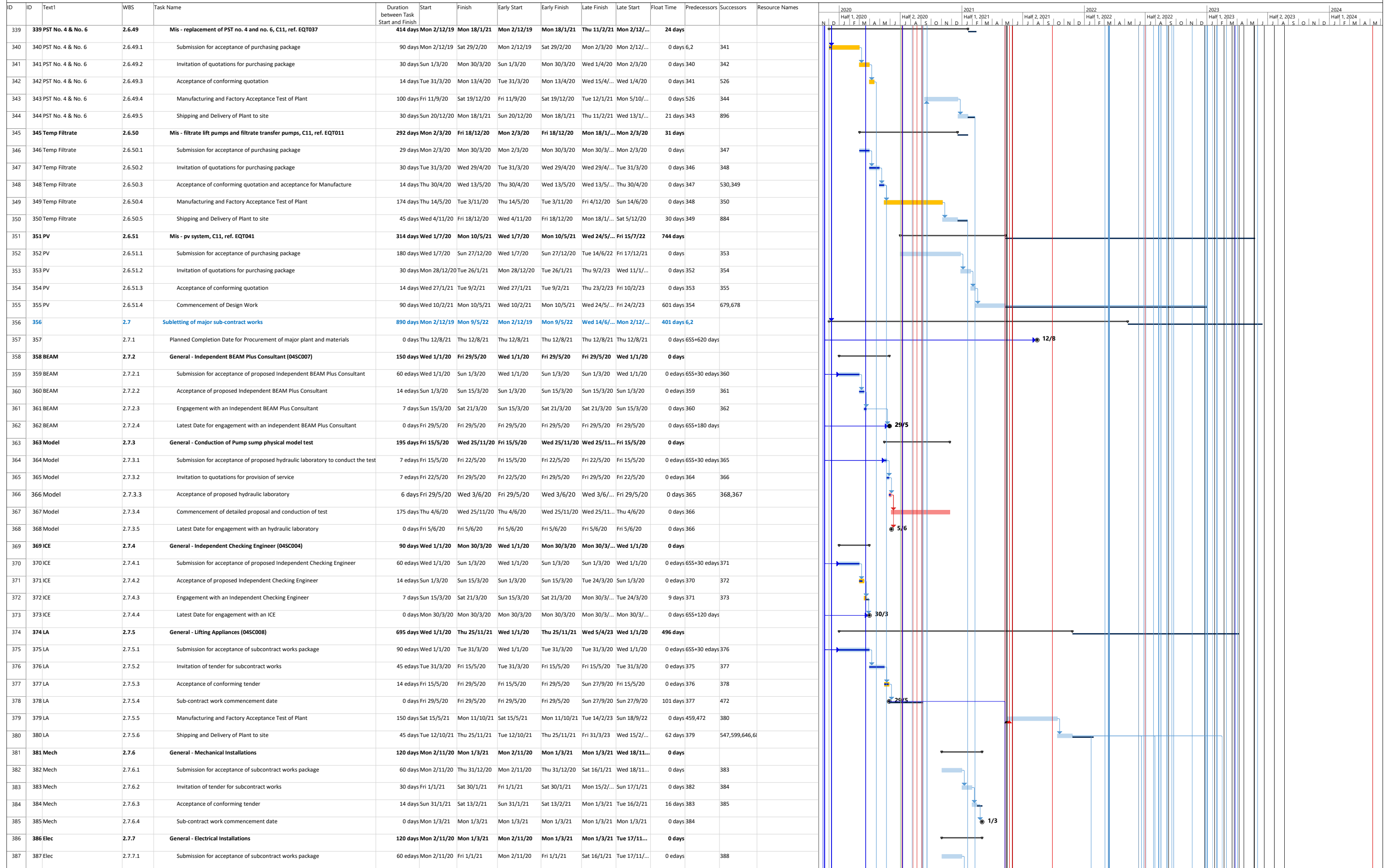
Proposed Work Programme for DE/2018/04
Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 E&M Works for Sewage Treatment Facilities



Task
 Milestone, Tentative
 Milestone
 Summary
 Project Summary
 Manual Summary
 Late
 Critical
 Critical Split
 Progress
 Manual Progress
 Slack (Float)
 Milestone (Actual)

Project: DE/2018/04
Date: Thu 2/7/20
Status Date Sun 28/6/20

ID	ID	Text1	WBS	Task Name	Duration between Task Start and Finish	Start	Finish	Early Start	Early Finish	Late Finish	Late Start	Floated Time	Predecessors	Successors	Resource Names	Gantt Chart (2020-2024)																																															
242	242	MFS	2.6.33	MFS - hollow fibre membrane modules (Marking Scheme Approach), ref. EQT023	815 days	Mon 2/12/19	Wed 23/2/22	Mon 2/12/19	Wed 23/2/22	Tue 20/12/21	Mon 2/12/22	300 days				[Gantt Chart Data]																																															
243	243	MFS	2.6.33.1	Submission for acceptance of purchasing package including proposed marking scheme	180 days	Mon 2/12/19	Fri 29/5/20	Mon 2/12/19	Fri 29/5/20	Fri 29/5/20	Mon 2/12/19	0 days	244			[Gantt Chart Data]																																															
244	244	MFS	2.6.33.2	Invitation of quotations for purchasing package	60 days	Sat 30/5/20	Tue 28/7/20	Sat 30/5/20	Tue 28/7/20	Tue 28/7/20	Sat 30/5/20	0 days	243	245		[Gantt Chart Data]																																															
245	245	MFS	2.6.33.3	Acceptance of conforming quotation	30 days	Wed 29/7/20	Thu 27/8/20	Wed 29/7/20	Thu 27/8/20	Thu 27/8/20	Wed 29/7/20	0 days	244	459,472		[Gantt Chart Data]																																															
246	246	MFS	2.6.33.4	Manufacturing of Plant	200 days	Sat 15/5/21	Tue 30/11/21	Sat 15/5/21	Tue 30/11/21	Mon 26/9/22	Fri 11/3/22	0 days	459,472	247		[Gantt Chart Data]																																															
247	247	MFS, FAT	2.6.33.5	Factory Acceptance Test of Plant (to be witnessed by PM)	40 days	Wed 1/12/21	Sun 9/1/22	Wed 1/12/21	Sun 9/1/22	Sat 5/11/22	Tue 27/9/22	0 days	246	248		[Gantt Chart Data]																																															
248	248	MFS	2.6.33.6	Shipping and Delivery of Plant to site	45 days	Mon 10/1/22	Wed 23/2/22	Mon 10/1/22	Wed 23/2/22	Tue 20/12/21	Sun 6/11/22	17 days	247	695		[Gantt Chart Data]																																															
249	249	MFS	2.6.34	MFS - air scour blowers, C11, ref. EQT040	815 days	Mon 2/12/19	Wed 23/2/22	Mon 2/12/19	Wed 23/2/22	Fri 25/3/22	Mon 2/12/22	30 days				[Gantt Chart Data]																																															
250	250	MFS	2.6.34.1	Submission for acceptance of purchasing package	180 days	Mon 2/12/19	Fri 29/5/20	Mon 2/12/19	Fri 29/5/20	Fri 29/5/20	Mon 2/12/19	0 days	6,2	251		[Gantt Chart Data]																																															
251	251	MFS	2.6.34.2	Invitation of quotations for purchasing package	60 days	Sat 30/5/20	Tue 28/7/20	Sat 30/5/20	Tue 28/7/20	Tue 28/7/20	Sat 30/5/20	0 days	250	252		[Gantt Chart Data]																																															
252	252	MFS	2.6.34.3	Acceptance of conforming quotation	30 days	Wed 29/7/20	Thu 27/8/20	Wed 29/7/20	Thu 27/8/20	Thu 27/8/20	Wed 29/7/20	0 days	251	459,472		[Gantt Chart Data]																																															
253	253	MFS	2.6.34.4	Manufacturing and Factory Acceptance Test of Plant	240 days	Sat 15/5/21	Sun 9/1/22	Sat 15/5/21	Sun 9/1/22	Tue 8/2/22	Mon 14/6/22	0 days	459,472	254		[Gantt Chart Data]																																															
254	254	MFS	2.6.34.5	Shipping and Delivery of Plant to site	45 days	Mon 10/1/22	Wed 23/2/22	Mon 10/1/22	Wed 23/2/22	Fri 25/3/22	Wed 9/2/22	17 days	253	696,721		[Gantt Chart Data]																																															
255	255	MFS	2.6.35	MFS - permeate pumps, C11, ref. EQT024	815 days	Mon 2/12/19	Wed 23/2/22	Mon 2/12/19	Wed 23/2/22	Thu 23/6/22	Mon 2/12/22	107 days	697			[Gantt Chart Data]																																															
256	256	MFS	2.6.35.1	Submission for acceptance of purchasing package	180 days	Mon 2/12/19	Fri 29/5/20	Mon 2/12/19	Fri 29/5/20	Fri 29/5/20	Mon 2/12/19	0 days	6,2	257		[Gantt Chart Data]																																															
257	257	MFS	2.6.35.2	Invitation of quotations for purchasing package	60 days	Sat 30/5/20	Tue 28/7/20	Sat 30/5/20	Tue 28/7/20	Tue 28/7/20	Sat 30/5/20	0 days	256	258		[Gantt Chart Data]																																															
258	258	MFS	2.6.35.3	Acceptance of conforming quotation	30 days	Wed 29/7/20	Thu 27/8/20	Wed 29/7/20	Thu 27/8/20	Thu 27/8/20	Wed 29/7/20	0 days	257	459,472		[Gantt Chart Data]																																															
259	259	MFS	2.6.35.4	Manufacturing and Factory Acceptance Test of Plant	240 days	Sat 15/5/21	Sun 9/1/22	Sat 15/5/21	Sun 9/1/22	Mon 9/5/22	Sun 12/9/21	0 days	459,472	260		[Gantt Chart Data]																																															
260	260	MFS	2.6.35.5	Shipping and Delivery of Plant to site	45 days	Mon 10/1/22	Wed 23/2/22	Mon 10/1/22	Wed 23/2/22	Thu 23/6/22	Tue 10/5/22	120 days	259			[Gantt Chart Data]																																															
261	261	MFS	2.6.36	MFS - compressed air system, C11, ref. EQT029	815 days	Mon 2/12/19	Wed 23/2/22	Mon 2/12/19	Wed 23/2/22	Thu 21/9/23	Mon 2/12/22	575 days				[Gantt Chart Data]																																															
262	262	MFS	2.6.36.1	Submission for acceptance of purchasing package	180 days	Mon 2/12/19	Fri 29/5/20	Mon 2/12/19	Fri 29/5/20	Fri 29/5/20	Mon 2/12/19	0 days	6,2	263		[Gantt Chart Data]																																															
263	263	MFS	2.6.36.2	Invitation of quotations for purchasing package	60 days	Sat 30/5/20	Tue 28/7/20	Sat 30/5/20	Tue 28/7/20	Tue 28/7/20	Sat 30/5/20	0 days	262	264		[Gantt Chart Data]																																															
264	264	MFS	2.6.36.3	Acceptance of conforming quotation	30 days	Wed 29/7/20	Thu 27/8/20	Wed 29/7/20	Thu 27/8/20	Thu 27/8/20	Wed 29/7/20	0 days	263	459,472		[Gantt Chart Data]																																															
265	265	MFS	2.6.36.4	Manufacturing and Factory Acceptance Test of Plant	240 days	Sat 15/5/21	Sun 9/1/22	Sat 15/5/21	Sun 9/1/22	Sun 14/1/24	Sat 20/5/23	0 days	459,472	266		[Gantt Chart Data]																																															
266	266	MFS	2.6.36.5	Shipping and Delivery of Plant to site	45 days	Mon 10/1/22	Wed 23/2/22	Mon 10/1/22	Wed 23/2/22	Wed 28/2/22	Mon 15/1/22	267 days	265	722		[Gantt Chart Data]																																															
267	267	MFS	2.6.37	MFS - instrumentation, C11, ref. EQT035	815 days	Mon 2/12/19	Wed 23/2/22	Mon 2/12/19	Wed 23/2/22	Mon 20/1/22	Mon 2/12/22	635 days				[Gantt Chart Data]																																															
268	268	MFS	2.6.37.1	Submission for acceptance of purchasing package	180 days	Mon 2/12/19	Fri 29/5/20	Mon 2/12/19	Fri 29/5/20	Fri 29/5/20	Mon 2/12/19	0 days	6,2	269		[Gantt Chart Data]																																															
269	269	MFS	2.6.37.2	Invitation of quotations for purchasing package	60 days	Sat 30/5/20	Tue 28/7/20	Sat 30/5/20	Tue 28/7/20	Tue 28/7/20	Sat 30/5/20	0 days	268	270		[Gantt Chart Data]																																															
270	270	MFS	2.6.37.3	Acceptance of conforming quotation	30 days	Wed 29/7/20	Thu 27/8/20	Wed 29/7/20	Thu 27/8/20	Thu 27/8/20	Wed 29/7/20	0 days	269	459,472		[Gantt Chart Data]																																															
271	271	MFS	2.6.37.4	Manufacturing and Factory Acceptance Test of Plant	240 days	Sat 15/5/21	Sun 9/1/22	Sat 15/5/21	Sun 9/1/22	Thu 14/3/24	Wed 19/7/21	0 days	459,472	272		[Gantt Chart Data]																																															
272	272	MFS	2.6.37.5	Shipping and Delivery of Plant to site	45 days	Mon 10/1/22	Wed 23/2/22	Mon 10/1/22	Wed 23/2/22	Sun 28/4/24	Fri 15/3/24	327 days	271	723		[Gantt Chart Data]																																															
273	273	MFS	2.6.38	MFS - chemical storage tanks, C11, ref. EQT025	815 days	Mon 2/12/19	Wed 23/2/22	Mon 2/12/19	Wed 23/2/22	Thu 19/1/23	Mon 2/12/22	17 days	701			[Gantt Chart Data]																																															
274	274	MFS	2.6.38.1	Submission for acceptance of purchasing package	180 days	Mon 2/12/19	Fri 29/5/20	Mon 2/12/19	Fri 29/5/20	Fri 29/5/20	Mon 2/12/19	0 days	6,2	275		[Gantt Chart Data]																																															
275	275	MFS	2.6.38.2	Invitation of quotations for purchasing package	60 days	Sat 30/5/20	Tue 28/7/20	Sat 30/5/20	Tue 28/7/20	Tue 28/7/20	Sat 30/5/20	0 days	274	276		[Gantt Chart Data]																																															
276	276	MFS	2.6.38.3	Acceptance of conforming quotation	30 days	Wed 29/7/20	Thu 27/8/20	Wed 29/7/20	Thu 27/8/20	Thu 27/8/20	Wed 29/7/20	0 days	275	459,472		[Gantt Chart Data]																																															
277	277	MFS	2.6.38.4	Manufacturing and Factory Acceptance Test of Plant	240 days	Sat 15/5/21	Sun 9/1/22	Sat 15/5/21	Sun 9/1/22	Mon 5/12/22	Sun 10/4/22	0 days	459,472	278		[Gantt Chart Data]																																															
278	278	MFS	2.6.38.5	Shipping and Delivery of Plant to site	45 days	Mon 10/1/22	Wed 23/2/22	Mon 10/1/22	Wed 23/2/22	Thu 19/1/23	Tue 6/12/22	330 days	277			[Gantt Chart Data]																																															
279	279	MFS	2.6.39	MFS - chemical dosing pumps, C11, ref. EQT026	815 days	Mon 2/12/19	Wed 23/2/22	Mon 2/12/19	Wed 23/2/22	Thu 19/1/23	Mon 2/12/22	330 days				[Gantt Chart Data]																																															
280	280	MFS	2.6.39.1	Submission for acceptance of purchasing package	180 days	Mon 2/12/19	Fri 29/5/20	Mon 2/12/19	Fri 29/5/20	Fri 29/5/20	Mon 2/12/19	0 days	6,2	281		[Gantt Chart Data]																																															
281	281	MFS	2.6.39.2	Invitation of quotations for purchasing package	60 days	Sat 30/5/20	Tue 28/7/20	Sat 30/5/20	Tue 28/7/20	Tue 28/7/20	Sat 30/5/20	0 days	280	282		[Gantt Chart Data]																																															
282	282	MFS	2.6.39.3	Acceptance of conforming quotation	30 days	Wed 29/7/20	Thu 27/8/20	Wed 29/7/20	Thu 27/8/20	Thu 27/8/20	Wed 29/7/20	0 days	281	459,472		[Gantt Chart Data]																																															
283	283	MFS	2.6.39.4	Manufacturing and Factory Acceptance Test of Plant	240 days	Sat 15/5/21	Sun 9/1/22	Sat 15/5/21	Sun 9/1/22	Mon 5/12/22	Sun 10/4/22	0 days	459,472	284		[Gantt Chart Data]																																															
284	284	MFS	2.6.39.5	Shipping and Delivery of Plant to site	45 days	Mon 10/1/22	Wed 23/2/22	Mon 10/1/22	Wed 23/2/22	Thu 19/1/23	Tue 6/12/22	17 days	283	702		[Gantt Chart Data]																																															
285	285	MFS	2.6.40	MFS - return activated sludge pumps (Marking Scheme Approach), ref. EQT010	815 days	Mon 2/12/19	Wed 23/2/22	Mon 2/12/19	Wed 23/2/22	Thu 23/6/22	Mon 2/12/22	120 days				[Gantt Chart Data]																																															
286	286	MFS	2.6.40.1	Submission for acceptance of purchasing package	180 days	Mon 2/12/19	Fri 29/5/20	Mon 2/12/19	Fri 29/5/20	Fri 29/5/20	Mon 2/12/19	0 days	6,2	287		[Gantt Chart Data]																																															
287	287	MFS	2.6.40.2	Invitation of quotations for purchasing package	60 days	Sat 30/5/20	Tue 28/7/20	Sat 30/5/20	Tue 28/7/20	Tue 28/7/20	Sat 30/5/20	0 days	286	288		[Gantt Chart Data]																																															
288	288	MFS	2.6.40.3	Acceptance of conforming quotation	30 days	Wed 29/7/20	Thu 27/8/20	Wed 29/7/20	Thu 27/8/20	Thu 27/8/20	Wed 29/7/20	0 days	287	459,472		[Gantt Chart Data]																																															
289	289	MFS	2.6.40.4	Manufacturing and Factory Acceptance Test of Plant	240 days	Sat 15/5/21	Sun 9/1/22	Sat 15/5/21	Sun 9/1/22	Mon 9/5/22	Sun 12/9/21	0 days	459,472	290		[Gantt Chart Data]																																															



ID	ID	Text1	WBS	Task Name	Duration between Task Start and Finish	Start	Finish	Early Start	Early Finish	Late Finish	Late Start	Float Time	Predecessors	Successors	Resource Names	Gantt Chart (2020-2024)																																																
527	527	existing genset	2.8.6.2	Design submissions for E&M installation works of existing power house	30 days	Thu 26/3/20	Fri 24/4/20	Thu 26/3/20	Fri 24/4/20	Thu 30/4/20	Thu 26/3/20	0 days	450,454	915			[Gantt Chart Data]																																															
528	528	Filter Press	2.8.6.3	Design submissions for E&M installation works of existing sludge thickening buil	45 days	Mon 29/6/20	Wed 12/8/20	Mon 29/6/20	Wed 12/8/20	Wed 12/8/...	Mon 29/6/...	0 days	336	337			[Gantt Chart Data]																																															
529	529	Filter Plates	2.8.6.4	Design submission for replacement of filter plates	45 edays	Tue 28/7/20	Fri 11/9/20	Tue 28/7/20	Fri 11/9/20	Mon 12/10/...	Tue 28/7/20	0.63 edays	330	331			[Gantt Chart Data]																																															
530	530	Temp Filtrate	2.8.6.5	Design submission for E&M Installation works for temp. filtrate eq. system	45 days	Thu 14/5/20	Sat 27/6/20	Thu 14/5/20	Sat 27/6/20	Sun 18/7/21	Fri 4/6/21	386 days	348				[Gantt Chart Data]																																															
531	531	Earth	2.8.6.6	Design Submission for Earthing and Lightning Protection System	90 days	Thu 1/10/20	Tue 29/12/20	Thu 1/10/20	Tue 29/12/20	Sun 18/7/21	Tue 20/4/21	201 days	433				[Gantt Chart Data]																																															
532	532	DOU	2.8.6.7	DG Stores Submissions to FSD for approval	120 days	Sun 14/2/21	Sun 13/6/21	Sun 14/2/21	Sun 13/6/21	Sun 18/7/21	Sun 21/3/21	35 days	472FS-90 day				[Gantt Chart Data]																																															
533	533	2.8.7	2.8.7	Three-Month Rolling Contractor's Design Submissions	302 days	Tue 14/4/20	Tue 9/2/21	Tue 14/4/20	Tue 9/2/21	Fri 4/6/21	Tue 8/9/20	115 days					[Gantt Chart Data]																																															
534	534	534	2.8.7.1	CDS01 - General Design Parameters	30 days	Tue 14/4/20	Wed 13/5/20	Tue 14/4/20	Wed 13/5/20	Fri 6/11/20	Thu 8/10/20	176 days	457				[Gantt Chart Data]																																															
535	535	Genset	2.8.7.2	CDS61 - Emergency Power Generator	120 days	Tue 13/10/20	Tue 9/2/21	Tue 13/10/20	Tue 9/2/21	Fri 4/6/21	Fri 5/2/21	114 days	418	458			[Gantt Chart Data]																																															
536	536	536	2.8.7.3	CDS80-1 - Civil Work Requirements for Inlet Works up to +8.0 mPD	60 days	Tue 1/9/20	Fri 30/10/20	Tue 1/9/20	Fri 30/10/20	Fri 6/11/20	Tue 8/9/20	6 days	457				[Gantt Chart Data]																																															
537	537	537	2.8.7.4	CDS80-2 - Civil Work Requirements for PST up to +8.0 mPD	60 days	Tue 1/9/20	Fri 30/10/20	Tue 1/9/20	Fri 30/10/20	Fri 6/11/20	Tue 8/9/20	6 days	457				[Gantt Chart Data]																																															
538	538	538	2.8.7.5	CDS80-3 - Civil Work Requirements for BR 2A&2B up to +8.0 mPD	60 days	Tue 1/9/20	Fri 30/10/20	Tue 1/9/20	Fri 30/10/20	Fri 6/11/20	Tue 8/9/20	6 days	457				[Gantt Chart Data]																																															
539	539	539	2.8.7.6	CDS80-4 - Civil Work Requirements for MFB no. 2 up to +8.0 mPD	30 days	Tue 1/9/20	Wed 30/9/20	Tue 1/9/20	Wed 30/9/20	Fri 6/11/20	Thu 8/10/20	36 days	457				[Gantt Chart Data]																																															
540	540	Risk Allowance	2.8.8	Risk Allowance for completion of Section 1	5 days	Mon 14/6/21	Fri 18/6/21	Mon 14/6/21	Fri 18/6/21	Fri 23/7/21	Mon 19/7/...	35 days	525,459,472	456			[Gantt Chart Data]																																															
541	541	2.9	2.9	Section 2 - Completion of all works for Inlet Works, PST No. 1-4, BR No. 2A & 2B, MFB No. 2, temporary chemical dosing system, deodorisation systems, chemical system no. 1 and no. 2, FS and sprinkler pump room, ...etc as defined in WI_GP 10.1(b)	1375 days	Tue 14/7/20	Fri 19/4/24	Tue 14/7/20	Fri 19/4/24	Fri 19/4/24	Mon 20/12/21	1 day	6,2				[Gantt Chart Data]																																															
542	542	IW, PST, BR, MFS, LA, PV, CCTV, P1	2.9.1	Section 2 - Latest Completion Date	0 days	Fri 19/4/24	Fri 19/4/24	Fri 19/4/24	Fri 19/4/24	Fri 19/4/24	Fri 19/4/24	0 days	655+1600 edi				[Gantt Chart Data]																																															
543	543	IW, LA, BS,FSI, Elec	2.9.2	Access Date for Portion B-2, Inlet Works No. 1	150 edays	Tue 28/6/22	Fri 25/11/22	Tue 28/6/22	Fri 25/11/22	Fri 25/11/22	Tue 28/6/22	0 edays	655+939 eday				[Gantt Chart Data]																																															
544	544	IW, LA, BS,FSI, Elec, Others	2.9.3	Tentative Civil Handover Date, Portion B-2, Inlet Works No. 1	1 day	Thu 4/8/22	Thu 4/8/22	Thu 4/8/22	Thu 4/8/22	Mon 28/11/...	Mon 28/11/...	0 days	547,545,587FS				[Gantt Chart Data]																																															
545	545	IW, Main	2.9.4	Commencement of E&M Installation at Inlet Works No. 1	530 days	Fri 5/8/22	Tue 16/1/24	Fri 5/8/22	Tue 16/1/24	Mon 11/3/...	Tue 26/1/23	0 days	544	864			[Gantt Chart Data]																																															
546	546	IW, H&S	2.9.4.1	Provision of Temporary Water Supply, Electricity Supply, Lighting, Welfare facilities etc., IW	30 days	Fri 5/8/22	Sat 3/9/22	Fri 5/8/22	Sat 3/9/22	Mon 22/1/24	Sun 24/12/23	506 days	544				[Gantt Chart Data]																																															
547	547	IW, LA	2.9.4.2	Installation of Lifting Appliances at Inlet Works No. 1	142 days	Fri 5/8/22	Sat 24/12/22	Fri 5/8/22	Sat 24/12/22	Fri 25/8/23	Thu 6/4/23	0 days	380,544	557SS+30 days			[Gantt Chart Data]																																															
548	548	IW, LA	2.9.4.2.1	1/F EOT Crane LA-01-01 SWL 5t	45 days	Mon 19/9/22	Wed 2/11/22	Mon 19/9/22	Wed 2/11/22	Fri 18/8/23	Wed 5/7/23	45 days	551,552	556	LA - A x 4*6 men		[Gantt Chart Data]																																															
549	549	IW, LA	2.9.4.2.2	1/F EOT Crane LA-01-02 SWL 5t	45 days	Mon 19/9/22	Wed 2/11/22	Mon 19/9/22	Wed 2/11/22	Fri 18/8/23	Wed 5/7/23	45 days	551,552	556	LA - B x 4*6 men		[Gantt Chart Data]																																															
550	550	IW, LA	2.9.4.2.3	1/F EOT Crane LA-01-03 SWL 5t	45 days	Mon 19/9/22	Wed 2/11/22	Mon 19/9/22	Wed 2/11/22	Tue 4/7/23	Sun 21/5/23	0 days	551,552	553,554,556	LA - C x 4*6 men		[Gantt Chart Data]																																															
551	551	IW, LA	2.9.4.2.4	UG EOT Crane LA-01-04 SWL 10t	45 days	Fri 5/8/22	Sun 18/9/22	Fri 5/8/22	Sun 18/9/22	Sat 20/5/23	Thu 6/4/23	0 days	548,549,550,551	LA - A x 4*6 men			[Gantt Chart Data]																																															
552	552	IW, LA	2.9.4.2.5	UG EOT Crane LA-01-05 SWL 10t	45 days	Fri 5/8/22	Sun 18/9/22	Fri 5/8/22	Sun 18/9/22	Sat 20/5/23	Thu 6/4/23	0 days	548,549,550,551	LA - B x 4*6 men			[Gantt Chart Data]																																															
553	553	IW, LA	2.9.4.2.6	1/F Retractable Crane LA-01-06 SWL 10t	45 days	Thu 3/11/22	Sat 17/12/22	Thu 3/11/22	Sat 17/12/22	Fri 18/8/23	Wed 5/7/23	0 days	550	556	LA - C x 4*6 men		[Gantt Chart Data]																																															
554	554	IW, LA	2.9.4.2.7	1/F Mobile A-frame LA-01-07 SWL 2t	45 days	Thu 3/11/22	Sat 17/12/22	Thu 3/11/22	Sat 17/12/22	Fri 18/8/23	Wed 5/7/23	0 days	550	556	LA - A x 4*6 men		[Gantt Chart Data]																																															
555	555	IW, LA	2.9.4.2.8	Submission of T&C Plan and Procedures of LA for acceptance	14 days	Tue 1/11/22	Mon 14/11/22	Tue 1/11/22	Mon 14/11/22	Fri 18/8/23	Sat 5/8/23	33 days	556				[Gantt Chart Data]																																															
556	556	IW, LA	2.9.4.2.9	T&C, Loading Test for Lifting Appliances	7 days	Sun 18/12/22	Sat 24/12/22	Sun 18/12/22	Sat 24/12/22	Fri 25/8/23	Sat 19/8/23	0 days	548,549,550,559	LA - B x 4*6 men			[Gantt Chart Data]																																															
557	557	IW, Mech	2.9.4.3	Mechanical Installations for Inlet Works No. 1	350 days	Sun 4/9/22	Sat 19/8/23	Sun 4/9/22	Sat 19/8/23	Wed 10/1/...	Thu 26/1/23	0 days	547SS+30 day	572SS+14 days			[Gantt Chart Data]																																															
558	558	IW, Mech	2.9.4.3.1	Installation of penstocks and stoplogs (Penstock 35nos, Stoplogs 37 nos)	150 days	Sun 4/9/22	Tue 31/1/23	Sun 4/9/22	Tue 31/1/23	Sat 24/6/23	Thu 26/1/23	0 days	47,38	567,568,571	ME - E x 4*6 men		[Gantt Chart Data]																																															
559	559	IW, Mech	2.9.4.3.2	Installation of fixed bar screen (x1)	7 days	Sun 25/12/22	Sat 31/12/22	Sun 25/12/22	Sat 31/12/22	Fri 1/9/23	Sat 26/8/23	0 days	556	563	ME - D x 2*4 men		[Gantt Chart Data]																																															
560	560	IW, Mech	2.9.4.3.3	Installation of mechanical raked coarse bar screens (x4)	90 days	Sun 4/9/22	Fri 2/12/22	Sun 4/9/22	Fri 2/12/22	Mon 20/11/...	Wed 23/8/...	22 days	106	561	ME - A x 4*6 men		[Gantt Chart Data]																																															
561	561	IW, Mech	2.9.4.3.4	Installation of screening conveyors (x6)	30 days	Sun 25/12/22	Mon 23/1/23	Sun 25/12/22	Mon 23/1/23	Wed 20/12/...	Tue 21/11/...	0 days	547,107,560	566	ME - A x 4*6 men		[Gantt Chart Data]																																															
562	562	IW, Mech	2.9.4.3.5	Installation of inlet pumps (x5)	21 days	Fri 17/3/23	Thu 6/4/23	Fri 17/3/23	Thu 6/4/23	Wed 6/12/...	Thu 16/11/...	0 days	547,567SS+14	564	ME - B x 4*6 men		[Gantt Chart Data]																																															
563	563	IW, Mech	2.9.4.3.6	Installation of mechanical raked fine bar screens (x4)	75 days	Sun 1/1/23	Thu 16/3/23	Sun 1/1/23	Thu 16/3/23	Wed 15/11/...	Sat 2/9/23	0 days	106,559	562	ME - B x 4*6 men		[Gantt Chart Data]																																															
564	564	IW, Mech	2.9.4.3.7	Installation of grit removal system (x3)	14 days	Fri 7/4/23	Thu 20/4/23	Fri 7/4/23	Thu 20/4/23	Wed 20/12/...	Thu 7/12/23	0 days	562,120	565	ME - B x 4*6 men		[Gantt Chart Data]																																															
565	565	IW, Mech	2.9.4.3.8	Installation of grit classifiers (x2)	21 days	Fri 21/4/23	Thu 11/5/23	Fri 21/4/23	Thu 11/5/23	Wed 10/1/...	Thu 21/12/...	244 days	564,126		ME - B x 4*6 men		[Gantt Chart Data]																																															
566	566	IW, Mech	2.9.4.3.9	Installation of compactors (x2)	21 days	Tue 24/1/23	Mon 13/2/23	Tue 24/1/23	Mon 13/2/23	Wed 10/1/...	Thu 21/12/...	331 days	561,132		ME - A x 4*6 men		[Gantt Chart Data]																																															
567	567	IW, Mech	2.9.4.3.10	Installation of pipework and valves	30 days	Wed 1/2/23	Thu 2/3/23	Wed 1/2/23	Thu 2/3/23	Tue 12/9/23	Mon 14/8/...	0 days	558	562SS+14 days	ME - D x 2*4 men		[Gantt Chart Data]																																															
568	568	IW, Mech	2.9.4.3.11	Pipework pressure tests	30 days	Wed 1/2/23	Thu 2/3/23	Wed 1/2/23	Thu 2/3/23	Tue 12/9/23	Mon 14/8/...	0 days	558	562SS+14 days	ME - D x 2*4 men		[Gantt Chart Data]																																															
569	569	IW, Mech	2.9.4.3.12	Installation of instrumentations	120 days	Fri 3/3/23	Fri 30/6/23	Fri 3/3/23	Fri 30/6/23	Wed 10/1/...	Wed 13/9/...	194 days	567,568		ME - A x 4*6 men		[Gantt Chart Data]																																															
570	570	IW, Mech	2.9.4.3.13	Installation of Platforms, Covers etc	180 days	Sun 4/9/22	Thu 2/3/23	Sun 4/9/22	Thu 2/3/23	Wed 10/1/...	Sat 15/7/23	314 days			ME - D x 2*4 men		[Gantt Chart Data]																																															
571	571	IW, Mech	2.9.4.3.14	Site Acceptance Tests - mechanical aspects including alignment and levels checks, leakage tests, welding tests, installation checks, pressure tests etc.	200 days	Wed 1/2/23	Sat 19/8/23	Wed 1/2/23	Sat 19/8/23	Wed 10/1/24	Sun 25/6/23	144 days	558		ME - D x 2*4 men		[Gantt Chart Data]																																															
572	572	IW, Elec	2.9.4.4	Electrical Installations for Inlet Works No. 1	300 days	Sun 18/9/22	Fri 14/7/23	Sun 18/9/22	Fri 14/7/23	Thu 11/1/24	Fri 17/3/23	126 days	557SS+14 day	585			[Gantt Chart Data]																																															

ID	ID	Text1	WBS	Task Name	Duration between Task Start and Finish	Start	Finish	Early Start	Early Finish	Late Finish	Late Start	Float Time	Predecessors	Successors	Resource Names	Gantt Chart (2020-2024)																											
851	851 FSI		2.9.32.11	Re-inspections with FSD	14 days	Wed 13/3/24	Tue 26/3/24	Wed 13/3/24	Tue 26/3/24	Sat 30/3/24	Sun 17/3/24	0 days	850	852		[Gantt bar for 851]																											
852	852 FSI		2.9.32.12	Issue of acceptance memo by FSD	14 days	Wed 27/3/24	Tue 9/4/24	Wed 27/3/24	Tue 9/4/24	Sat 13/4/24	Sun 31/3/24	4 days	851			[Gantt bar for 852]																											
853	853 FSI		2.9.32.13	Installation of FS Pumps and Sprinkler Pumps	60 days	Mon 3/4/23	Thu 1/6/23	Mon 3/4/23	Thu 1/6/23	Sun 22/10/...	Thu 24/8/23	109 days	753	856	FS - A x 4~6 men	[Gantt bar for 853]																											
854	854 FSI		2.9.32.14	Installation of Fire Hydrant and Booster Pumps	60 days	Mon 3/4/23	Thu 1/6/23	Mon 3/4/23	Thu 1/6/23	Sun 22/10/...	Thu 24/8/23	109 days	753	856	FS - A x 4~6 men	[Gantt bar for 854]																											
855	855 FSI		2.9.32.15	SAT for Manual and automatic fire detection and alarm system	60 days	Tue 19/9/23	Fri 17/11/23	Tue 19/9/23	Fri 17/11/23	Thu 21/12/...	Mon 23/10/...	14 days	592,639,675, 847,845,846			[Gantt bar for 855]																											
856	856 FSI		2.9.32.16	SAT for Fire hydrants, hose reels and street fire hydrant system	60 days	Tue 19/9/23	Fri 17/11/23	Tue 19/9/23	Fri 17/11/23	Thu 21/12/...	Mon 23/10/...	14 days	592,639,675, 847,845,846			[Gantt bar for 856]																											
857	857 Pb, Main		2.9.33	Commencement of Plumbing Installation	1267 days	Tue 14/7/20	Tue 2/1/24	Tue 14/7/20	Tue 2/1/24	Wed 17/1/...	Sun 2/1/22	15 days		864		[Gantt bar for 857]																											
858	858 Pb		2.9.33.1	Submission of detail design for acceptance	90 days	Tue 14/7/20	Sun 11/10/20	Tue 14/7/20	Sun 11/10/20	Thu 7/4/22	Sat 8/1/22	0 days	423	859	Pb - A x 4~6 men	[Gantt bar for 858]																											
859	859 Pb		2.9.33.2	Submission of WWO542 for WSD's approval	355 days	Mon 12/10/20	Fri 1/10/21	Mon 12/10/20	Fri 1/10/21	Tue 28/3/23	Fri 8/4/22	417 days	858	590,637,673, 7/Pb - B x 4~6 men		[Gantt bar for 859]																											
860	860 Pb, others		2.9.33.3	Connection of External Pumping System (By others)	0 days	Fri 15/9/23	Fri 15/9/23	Fri 15/9/23	Fri 15/9/23	Wed 25/10/...	Wed 25/10/...	4 days		861		[Gantt bar for 860]																											
861	861 Pb		2.9.33.4	Submission of WWO46 for WSD's inspection	45 days	Tue 19/9/23	Thu 2/11/23	Tue 19/9/23	Thu 2/11/23	Sat 9/12/23	Thu 26/10/...	0 days	590,637,673, 862			[Gantt bar for 861]																											
862	862 Pb		2.9.33.5	Obtain WWO46 Part V	45 days	Fri 3/11/23	Sun 17/12/23	Fri 3/11/23	Sun 17/12/23	Tue 23/1/24	Sun 10/12/...	15 days	861	863		[Gantt bar for 862]																											
863	863 Pb, Others		2.9.33.6	Tentative Date for connection of external water pipework (by others)	0 days	Tue 2/1/24	Tue 2/1/24	Tue 2/1/24	Tue 2/1/24	Wed 24/1/...	Wed 24/1/...	22 days	862			[Gantt bar for 863]																											
864	864 Test, Main		2.9.34	Testing and Commissioning	82 days	Wed 17/1/24	Sun 7/4/24	Wed 17/1/24	Sun 7/4/24	Sun 7/4/24	Wed 17/1/...	0 days	545,597,644,94455-90 eday			[Gantt bar for 864]																											
865	865 Test		2.9.34.1	System Commissioning Tests of the E&M systems	7 days	Wed 17/1/24	Tue 23/1/24	Wed 17/1/24	Tue 23/1/24	Tue 23/1/...	Wed 17/1/...	0 days		866		[Gantt bar for 865]																											
866	866 Test		2.9.34.2	MBR System Process Startup	40 days	Wed 24/1/24	Sun 3/3/24	Wed 24/1/24	Sun 3/3/24	Sun 3/3/24	Wed 24/1/...	0 days	865	867		[Gantt bar for 866]																											
867	867 Test		2.9.34.3	Plant Commissioning	35 days	Mon 4/3/24	Sun 7/4/24	Mon 4/3/24	Sun 7/4/24	Sun 7/4/24	Mon 4/3/...	0 days	866	868,947		[Gantt bar for 867]																											
868	868 Risk Allowance		2.9.35	Risk Allowance for completion of Section 2	5 days	Wed 10/4/24	Sun 14/4/24	Wed 10/4/24	Sun 14/4/24	Thu 18/4/24	Sun 14/4/24	4 days	867,840,825	542		[Gantt bar for 868]																											
869	869		2.10	Section 3 - Completion of all works for retrofitting of the existing PST...etc	659 days	Mon 2/12/19	Wed 22/9/21	Mon 2/12/19	Wed 22/9/21	Wed 22/9/21	Mon 2/12/...	1 day	6,2			[Gantt bar for 869]																											
870	870 Filter Press, Filter Plates		2.10.1	Section 3 - Latest Completion Date	0 days	Wed 22/9/21	Wed 22/9/21	Wed 22/9/21	Wed 22/9/21	Wed 22/9/...	Wed 22/9/...	0 days	655+660 eday			[Gantt bar for 870]																											
871	871 existing genset		2.10.2	Key Date KD3A, E&M Installation works of existing power house	0 days	Wed 29/7/20	Wed 29/7/20	Wed 29/7/20	Wed 29/7/20	Wed 29/7/...	Wed 29/7/...	1 day	655+240 eday			[Gantt bar for 871]																											
872	872 PST No. 4 & No. 6		2.10.3	Key Date KD3B, E&M work for provision of the existing PSTs	0 days	Wed 9/6/21	Wed 9/6/21	Wed 9/6/21	Wed 9/6/21	Wed 9/6/21	Wed 9/6/21	1 day	655+555 eday			[Gantt bar for 872]																											
873	873 Temp Filtrate, LA		2.10.4	Access Date for Portion B-3B, Temporary Filtrate Lifting Well and Eq. Tank	0 edays	Mon 2/12/19	Mon 2/12/19	Mon 2/12/19	Mon 2/12/19	Mon 2/12/...	Mon 2/12/...	0 edays	655,255	874		[Gantt bar for 873]																											
874	874 Temp Filtrate		2.10.5	Commencement of E&M Installation at Temp. Filtrate Lifting Well and Eq. Tank	287 days	Mon 27/4/20	Sun 7/2/21	Mon 27/4/20	Sun 7/2/21	Mon 8/2/21	Tue 28/4/20	1 day	873	892		[Gantt bar for 874]																											
875	875 Temp Filtrate		2.10.5.1	Civil on-site survey and report submission for acceptance	14 days	Mon 27/4/20	Sun 10/5/20	Mon 27/4/20	Sun 10/5/20	Mon 11/5/...	Tue 28/4/20	0 days	449	876		[Gantt bar for 875]																											
876	876 Temp Filtrate		2.10.5.2	Civil structural design and drawing submission for acceptance	21 days	Mon 11/5/20	Sun 31/5/20	Mon 11/5/20	Sun 31/5/20	Mon 1/6/20	Tue 12/5/20	0 days	875	877		[Gantt bar for 876]																											
877	877 Temp Filtrate		2.10.5.3	Civil formation and underground work	21 days	Mon 1/6/20	Sun 21/6/20	Mon 1/6/20	Sun 21/6/20	Mon 22/6/...	Tue 2/6/20	0 days	876	883,878		[Gantt bar for 877]																											
878	878 Temp Filtrate		2.10.5.4	RC structure works including cast-in items	180 days	Mon 22/6/20	Fri 18/12/20	Mon 22/6/20	Fri 18/12/20	Sat 19/12/20	Tue 23/6/20	0 days	877	879,882,885,81		[Gantt bar for 878]																											
879	879 Temp Filtrate		2.10.5.5	Installation of Lifting Appliances at Temporary Filtrate Lifting Well and Eq. Tank	7 days	Mon 18/1/21	Sun 24/1/21	Mon 18/1/21	Sun 24/1/21	Mon 8/2/21	Tue 2/2/21	15 days	878			[Gantt bar for 879]																											
880	880 Temp Filtrate, LA		2.10.5.5.1	GF MR LA-09-01 SWL 1t	7 days	Mon 18/1/21	Sun 24/1/21	Mon 18/1/21	Sun 24/1/21	Mon 8/2/21	Tue 2/2/21	15 days	878		LA - A x 4~6 men	[Gantt bar for 880]																											
881	881 Temp Filtrate, LA		2.10.5.5.2	GF MR LA-09-02 SWL 1t	7 days	Mon 18/1/21	Sun 24/1/21	Mon 18/1/21	Sun 24/1/21	Mon 8/2/21	Tue 2/2/21	15 days	878		LA - B x 4~6 men	[Gantt bar for 881]																											
882	882 Temp Filtrate, Mech		2.10.5.6	Mechanical Installations for Temp. Filtrate Lifting Well and Eq. Tank	37 days	Sat 19/12/20	Sun 24/1/21	Sat 19/12/20	Sun 24/1/21	Mon 25/1/...	Sun 20/12/...	0 days	878	886FS-30 days		[Gantt bar for 882]																											
883	883 Temp Filtrate, Mech		2.10.5.6.1	Installation of pipework and valves	30 days	Sat 19/12/20	Sun 17/1/21	Sat 19/12/20	Sun 17/1/21	Mon 18/1/...	Sun 20/12/...	0 days	877	884	ME - A x 4~6 men	[Gantt bar for 883]																											
884	884 Temp Filtrate, Mech		2.10.5.6.2	Installation of pumps	7 days	Mon 18/1/21	Sun 24/1/21	Mon 18/1/21	Sun 24/1/21	Mon 25/1/...	Tue 19/1/21	1 day	883,350		ME - A x 4~6 men	[Gantt bar for 884]																											
885	885 Temp Filtrate, Mech		2.10.5.6.3	Installation of instrumentations	14 days	Sat 19/12/20	Fri 1/1/21	Sat 19/12/20	Fri 1/1/21	Mon 25/1/...	Tue 12/1/21	24 days	878		ME - A x 4~6 men	[Gantt bar for 885]																											
886	886 Temp Filtrate		2.10.5.7	Electrical Installations for Temp. Filtrate Lifting Well and Eq. Tank	21 days	Sat 26/12/20	Fri 15/1/21	Sat 26/12/20	Fri 15/1/21	Mon 18/1/...	Tue 29/12/...	0 days	882FS-30 day	889,891FS-7 d		[Gantt bar for 886]																											
887	887 Temp Filtrate, Elec		2.10.5.7.1	Installation of cable trays and cable containments	21 days	Sat 26/12/20	Fri 15/1/21	Sat 26/12/20	Fri 15/1/21	Mon 18/1/...	Tue 29/12/...	3 days				[Gantt bar for 887]																											
888	888 Temp Filtrate, Elec		2.10.5.7.2	Cables laying and terminations	21 days	Sat 26/12/20	Fri 15/1/21	Sat 26/12/20	Fri 15/1/21	Mon 18/1/...	Tue 29/12/...	3 days				[Gantt bar for 888]																											
889	889 Temp Filtrate		2.10.5.8	Site Acceptance Test for E&M Equip at Filtrate Lifting Well and Eq. Tank	7 days	Mon 25/1/21	Sun 31/1/21	Mon 25/1/21	Sun 31/1/21	Mon 1/2/21	Tue 26/1/21	0 days	882,886	890		[Gantt bar for 889]																											
890	890 Temp Filtrate		2.10.5.9	System Commissioning for E&M Equip at Temp. Filtrate Lifting Well and Eq. Tank	7 days	Mon 1/2/21	Sun 7/2/21	Mon 1/2/21	Sun 7/2/21	Mon 8/2/21	Tue 2/2/21	1 day	889,891			[Gantt bar for 890]																											
891	891 Temp Filtrate		2.10.5.10	Building Services Installations for Filtrate Lifting Well and Eq. Tank	21 days	Sat 9/1/21	Fri 29/1/21	Sat 9/1/21	Fri 29/1/21	Mon 1/2/21	Tue 12/1/21	2 days	886FS-7 days	890		[Gantt bar for 891]																											
892	892 Temp Filtrate		2.10.6	Work completion for Temp. Filtrate Lifting Well and Eq. Tank	0 days	Mon 8/2/21	Mon 8/2/21	Mon 8/2/21	Mon 8/2/21	Mon 8/2/21	Mon 8/2/21	0 days	874			[Gantt bar for 892]																											
893	893 PST No. 4 & No. 6		2.10.7	Access Date for Portion B-3A, Existing PST No. 4 and No. 6	0 edays	Mon 2/12/19	Mon 2/12/19	Mon 2/12/19	Mon 2/12/19	Mon 2/12/...	Mon 2/12/...	0 edays	6,2			[Gantt bar for 893]																											
894	894 PST No. 4 & No. 6, Others		2.10.8	Tentative Commencement Date	1 day	Mon 8/2/21	Mon 8/2/21	Mon 8/2/21	Mon 8/2/21	Thu 11/2/21	Thu 11/2/21	0 days		896		[Gantt bar for 894]																											
895	895 PST No. 4 & No. 6		2.10.9	Commencement of retrofitting the existing PST No. 4 and No. 6	117 days	Tue 9/2/21	Sat 5/6/21	Tue 9/2/21	Sat 5/6/21	Tue 8/6/21	Fri 12/2/21	3 days				[Gantt bar for 895]																											
896	896 PST No. 4 & No. 6		2.10.9.1	Site Clearance	10 days	Tue 9/2/21	Thu 18/2/21	Tue 9/2/21	Thu 18/2/21	Sun 21/2/21	Fri 12/2/21	0 days	344,894	898		[Gantt bar for 896]																											
897	897 PST No. 4 & No. 6, Mech		2.10.9.2	Mechanical Installations of existing PSTs	76 days	Fri 19/2/21	Wed 5/5/21	Fri 19/2/21	Wed 5/5/21	Tue 11/5/21	Mon 22/2/...	3 days				[Gantt bar for 897]																											
898	898 PST No. 4 & No. 6, Mech		2.10.9.2.1	Installation of PST influent feed pipe	7 days	Fri 19/2/21	Thu 25/2/21	Fri 19/2/21	Thu 25/2/21	Sun 28/2/21	Mon 22/2/...	0 days	896	899	ME - A x 4~6 men	[Gantt bar for 898]																											

