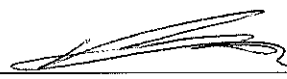


Drainage Services Department

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

**Monthly EM&A Report
September 2020**

(Version 1)



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

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

CINOTECH CONSULTANTS LTD
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong
Tel: (852) 2151 2083 Fax: (852) 3107 1388
Email: info@cinotech.com.hk

Prepared by	Ms. Echo Hung		16 October 2020
Checked by	Mr. Eric Yan		16 October 2020

Ref.: DSDSWHS1EM00_0_0075E.20.docx

16 October 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 September 2020

Reference is made to the Environmental Team's submission of Monthly EM&A Report for September 2020 (Version 1) certified by the ET Leader and provided to us via e-mail on 16 October 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)

Q:\Projects\DSDSWHS1EM00\02 Proj_Mgt\02 Corr\DSDSWHS1EM00_0_0075E.20.docx

TABLE OF CONTENTS

	Page
EXECUTIVE SUMMARY	1
Introduction.....	1
Summary of Main Works Undertaken and Key Measures Implemented	1
Summary of Exceedances, Investigation and Follow-up.....	2
Complaint Handling, Prosecution and Public Engagement.....	2
Reporting Changes.....	2
Future Key Issues.....	3
1 INTRODUCTION.....	4
Background.....	4
Purpose of the Report.....	4
Project Organizations.....	4
Construction Activities undertaken during the Reporting Month	5
Summary of EM&A Requirements	6
Statuses of Environmental Licensing and Permitting	6
2 AIR QUALITY.....	8
Monitoring Requirement.....	8
Monitoring Locations.....	8
Monitoring Parameters and Frequency	8
Monitoring Equipment.....	8
Monitoring Methodology.....	9
Results and Observations.....	11
Comparison of EM&A Result with EIA Prediction	12
3 NOISE	13
Monitoring Requirements	13
Monitoring Locations.....	13
Monitoring Parameters, Frequency and Duration.....	13
Monitoring Equipment.....	13
Monitoring Methodology and QA/QC Procedure	14
Maintenance and Calibration	14
Results and Observations.....	14
Comparison of EM&A Result with EIA Prediction	15
4 ECOLOGY	16
Monitoring Requirements	16
Monitoring Locations.....	16
Monitoring Parameters, Frequency and Duration.....	17
Monitoring Methodology.....	17
Analytical Methodology	17
Results.....	18
Analysis.....	19
Observations	20
5 WATER QUALITY.....	21
Monitoring Requirement.....	21

6	WASTE MANAGEMENT	21
	Monitoring Requirement.....	21
	Waste Management Status.....	21
7	LANDSCAPE AND VISUAL	22
	Audit Requirement.....	22
8	ENVIRONMENTAL AUDIT	23
	Site Audits.....	23
	Implementation Status of Environmental Mitigation Measures	23
	Implementation Status of Event and Action Plans	24
9	ENVIRONMENTAL NON-CONFORMANCE	25
	Summary of Complaint, Warning, Notification of any Summons and Successful Prosecution.....	25
	Summary of Exceedance.....	25
10	FUTURE KEY ISSUES	26
	Monitoring Schedule.....	27
11	CONCLUSIONS AND RECOMMENDATIONS	28
	Conclusions.....	28
	Recommendations.....	28

LIST OF TABLES

Table I	Summary Table for Major Site Activities in the Reporting Month
Table II	Summary of Complaint/Summons/Prosecution in the Reporting Month
Table III	Summary Table for Site Activities in the next Reporting Period
Table 1.1	Key Project Contacts
Table 1.2	Summary Table for Major Site Activities in the Reporting Month
Table 1.3	Summary of Environmental License and Permit
Table 2.1	Air Quality Monitoring Locations
Table 2.2	Frequency and Parameters of Air Quality Monitoring
Table 2.3	Air Quality Monitoring Equipment
Table 2.4	Major Dust Source during Air Quality Monitoring
Table 2.5	Comparison of 1-hr TSP Monitoring Data with Predictions 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)
Table 3.1	Noise Monitoring Stations
Table 3.2	Frequency and Parameters of Noise Monitoring
Table 3.3	Noise Monitoring Equipment
Table 3.4	Other Noise Source during Noise Monitoring
Table 3.5	Baseline Noise Level and Noise Limit Level for Monitoring Stations
Table 3.6	Comparison of Noise Monitoring Data with Predictions in EIA Report (As Approved in 2013)
Table 4.1	Monitoring of Measures to Minimise Disturbance to Waterbirds on Ng Tung, Sheung Yue and Shek Sheung Rivers during Pre-Construction Phase
Table 4.2	Ecological Monitoring Stations

Table 4.3	Representative Waterbirds
Table 4.4	Total Bird Species and Abundance in the Reporting Month
Table 4.5	Abundance of Representative Waterbirds in the Reporting Month
Table 4.6	T-test Result for All Waterbirds in the Reporting Month
Table 4.7	T-test Result for Representative Waterbirds in the Reporting Month
Table 4.8	Observations during Ecological Monitoring in the Reporting Month
Table 8.1	Observations and Recommendations of Site Audit of Contract No. DC/2018/06
Table 8.2	Observations and Recommendations of Site Audit of Contract No. DC/2018/07
Table 10.1	Summary Table for Site Activities in the Next Reporting Period

LIST OF FIGURES

Figure 1.1	Layout Plan of the Project Site
Figure 1.2	Project Organisation for Environmental Monitoring and Audit
Figure 2	Locations of Air Quality Monitoring Stations
Figure 3	Locations of Construction Noise Monitoring Stations
Figure 4	Survey Location for Impact Ecological Monitoring

LIST OF APPENDICES

Appendix A	Action and Limit Levels
Appendix B	Environmental Monitoring Schedules
Appendix C	Copies of Calibration Certificates for Air Quality Monitoring
Appendix D	Weather Information
Appendix E	1-hour TSP Monitoring Results and Graphical Presentations
Appendix F	24-hour TSP Monitoring Results and Graphical Presentations
Appendix G	Copies of Calibration Certificates for Noise Monitoring
Appendix H	Noise Monitoring Results and Graphical Presentations
Appendix I	Ecological Monitoring Results and Analysis
Appendix J	Photo Records of Ecological Monitoring
Appendix K	Site Audit Summary
Appendix L	Waste Flow Table
Appendix M	Event and Action Plans
Appendix N	Environmental Mitigation Implementation Schedule (EMIS)
Appendix O	Summaries of Environmental Complaint, Warning, Summon and Notification of Successful Prosecution
Appendix P	Summary of Exceedance
Appendix Q	Tentative Construction Programme

EXECUTIVE SUMMARY**Introduction**

1. This is the 9th 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 September 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"> • ELS works - excavation • Sheet piling installation • Earth mat installation
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"> • Sheet piling installation • ELS installation • Road and drainage works • Demolition work of existing sedimentation tank • Pre-drilling & foundation work • Construction of manhole
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
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)

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

Air Quality

- Stockpiles were covered by impervious sheets.
- Water spraying on haul road was done to minimize dust generation.

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 (September 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"> • ELS excavation • Sheet pile installation • Earth mat installation • Water main laying • Demolition of boundary wall • Demolition of profile barrier • Strut and waling installation
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"> • ELS installation • Sheet piling installation • Drainage diversion work • Piling installation • Cable diversion • Pipe laying • Demolition work of existing BR tank
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"> • Erection of site office in WA1-B • E&M work for site office in WA1-B • Paving work in WA3 • Ground investigation in sidestream treatment facilities • Land survey in sidestream treatment facilities
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 • Dismantle & removal of E&M equipment of the existing primary sedimentation tank no. 4 and no. 6

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 9th Monthly EM&A Report which summarises the impact monitoring results and audit findings for the EM&A programme during the reporting period in September 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"> • ELS works - excavation • Sheet piling installation • Earth mat installation
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"> • Sheet piling installation • ELS installation • Road and drainage works • Demolition work of existing sedimentation tank • Pre-drilling & foundation work • Construction of manhole
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
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)

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 September 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	449210	23 Sep 2019	11 Mar 2024	Valid
DE/2018/03	455843 (WA3)	6 May 2020	30 Sep 2020	Valid
DE/2018/03	460065 (Sidestream)	16 Sep 2020	28 Mar 2022	Valid
DE/2018/04	460181	Notified EPD on 17 Sep 2020	30 Nov 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
DE/2018/04	5213-624-B2592-01	7 Jul 2020	N/A	Valid

Contract No.	Permit / License No.	Valid Period		Status
		From	To	
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
DC/2018/07	WT00035727-2020	1 Apr 2020	30 Apr 2025	Valid
Construction Noise Permit (Routine Night Works - Concreting, Excavation, Bar Bending & Cutting at Portion A, B and C)				
DC/2018/06 and DC/2018/07	GW-RN0564-20	9 Aug 2020	8 Oct 2020	Valid
Admission Ticket for Disposal of Special Waste				
DC/2018/07	15805	6 Aug 2020	5 Nov 2020	Valid

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	3
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 (September 2020), $\mu\text{g}/\text{m}^3$
AM1 - Wai Loi Tsuen	N/A	N/A ⁽¹⁾	22.0 - 78.0
AM2 - Fu Tei Au	FLN-E28	255	16.0 - 68.0

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 (September 2020), $\mu\text{g}/\text{m}^3$
AM1a - Site Boundary of the Shek Wu Hui STW (East)	N/A ⁽¹⁾	27.6 - 162.0
AM2a - Site Boundary of the Shek Wu Hui STW (North)	N/A ⁽¹⁾	24.0 - 69.5

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	SVAN 957	2
	SVAN 979	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 (September 2020), Leq (30min) dB(A)
NM1 - Wai Loi Tsuen	N/A	N/A ⁽¹⁾	53.1 – 58.5
NM2 - Fu Tei Au	N/A	N/A ⁽¹⁾	61.1 – 69.4
NM3 – Man Kok Village	FN-18	66-75	54.3 – 67.5

Remarks:

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

3.14 The results at NM3 were slightly 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	普通鷓鴣
<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	36	556
Waterbirds	13	305

- 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	83
<i>Ardea cinerea</i>	Grey Heron	蒼鷺	11
<i>Ardeola bacchus</i>	Chinese Pond Heron	池鷺	59
<i>Phalacrocorax carbo</i>	Great Cormorant	普通鷓鴣	0
<i>Ardea alba</i>	Great Egret	大白鷺	35
<i>Bubulcus coromandus</i>	Eastern Cattle Egret	牛背鷺	41

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	2.304	✓	✓
	Seasonal	2.247	✓	✓

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	0.527	✓	✓	-1.628	✓	✓	✓
Grey Heron	N/A*						
Chinese Pond Heron	-0.750	✓	✓	-1.751	✓	✓	✓
Great Cormorant	N/A*						
Great Egret	1.136	✓	✓	2.534	✓	✓	✓
Eastern Cattle Egret	3.507	✓	✓	2.192	✓	✓	✓

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)	Breaking works, excavation, sheet-piling	Remote boating
T2 (PC3, PC4)	Breaking works, excavation, sheet-piling	N/A
PC5	N/A	Breaking works
T3 (PC6, PC7)	N/A	Oil stain

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 1, 10, 16, 22 & 29 September 2020 in the reporting month. Joint site inspection with the representative of IEC was conducted on 22 September 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>	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

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"> • ELS excavation • Sheet pile installation • Earth mat installation • Water main laying • Demolition of boundary wall • Demolition of profile barrier • Strut and waling installation
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"> • ELS installation • Sheet piling installation • Drainage diversion work • Piling installation • Cable diversion • Pipe laying • Demolition work of existing BR tank
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"> • Erection of site office in WA1-B • E&M work for site office in WA1-B • Paving work in WA3 • Ground investigation in sidestream treatment facilities • Land survey in sidestream treatment facilities
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 • Dismantle & removal of E&M equipment of the existing primary sedimentation tank no. 4 and no. 6

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;
- 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 9th 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 5 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.

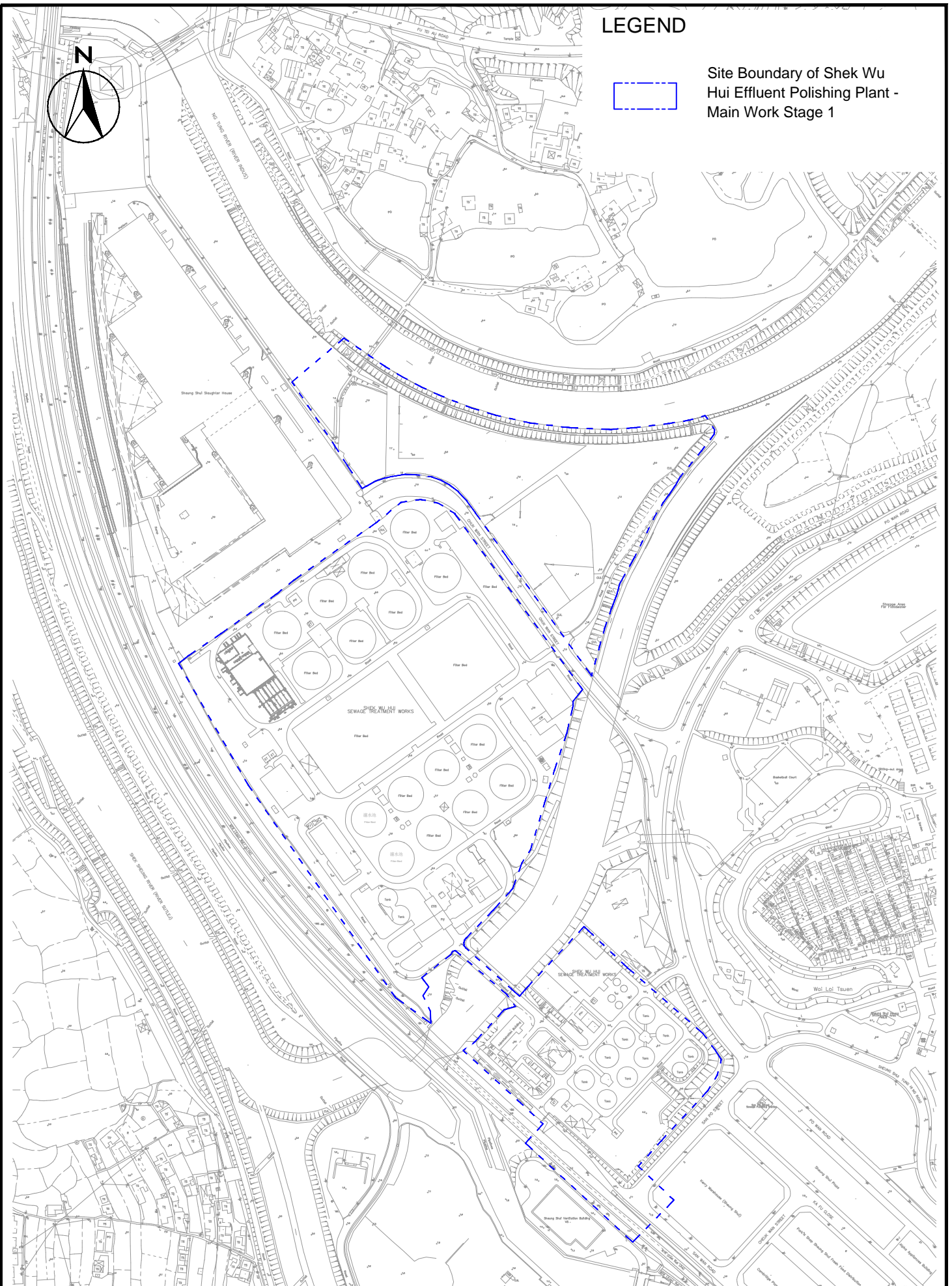
FIGURES



LEGEND



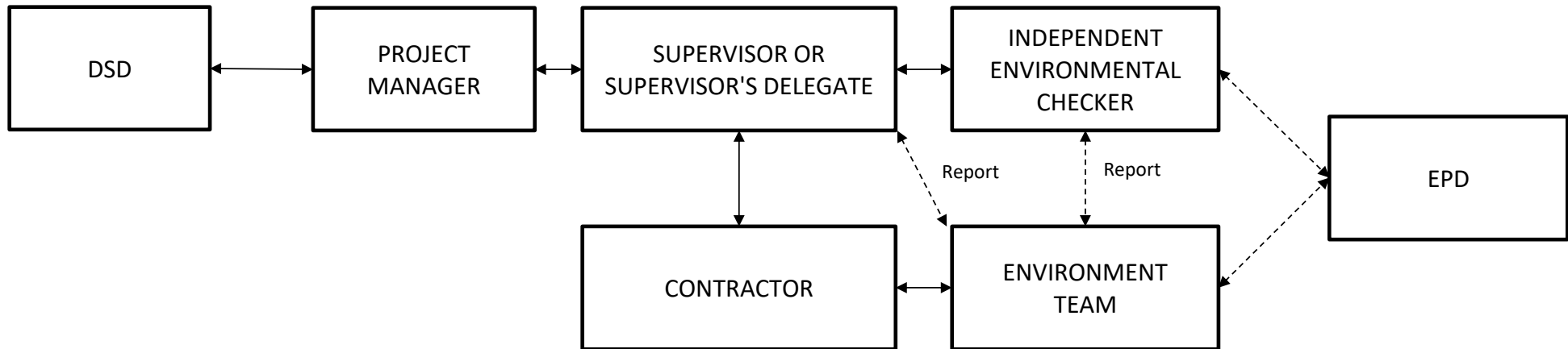
Site Boundary of Shek Wu Hui Effluent Polishing Plant - Main Work Stage 1



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

Site Layout

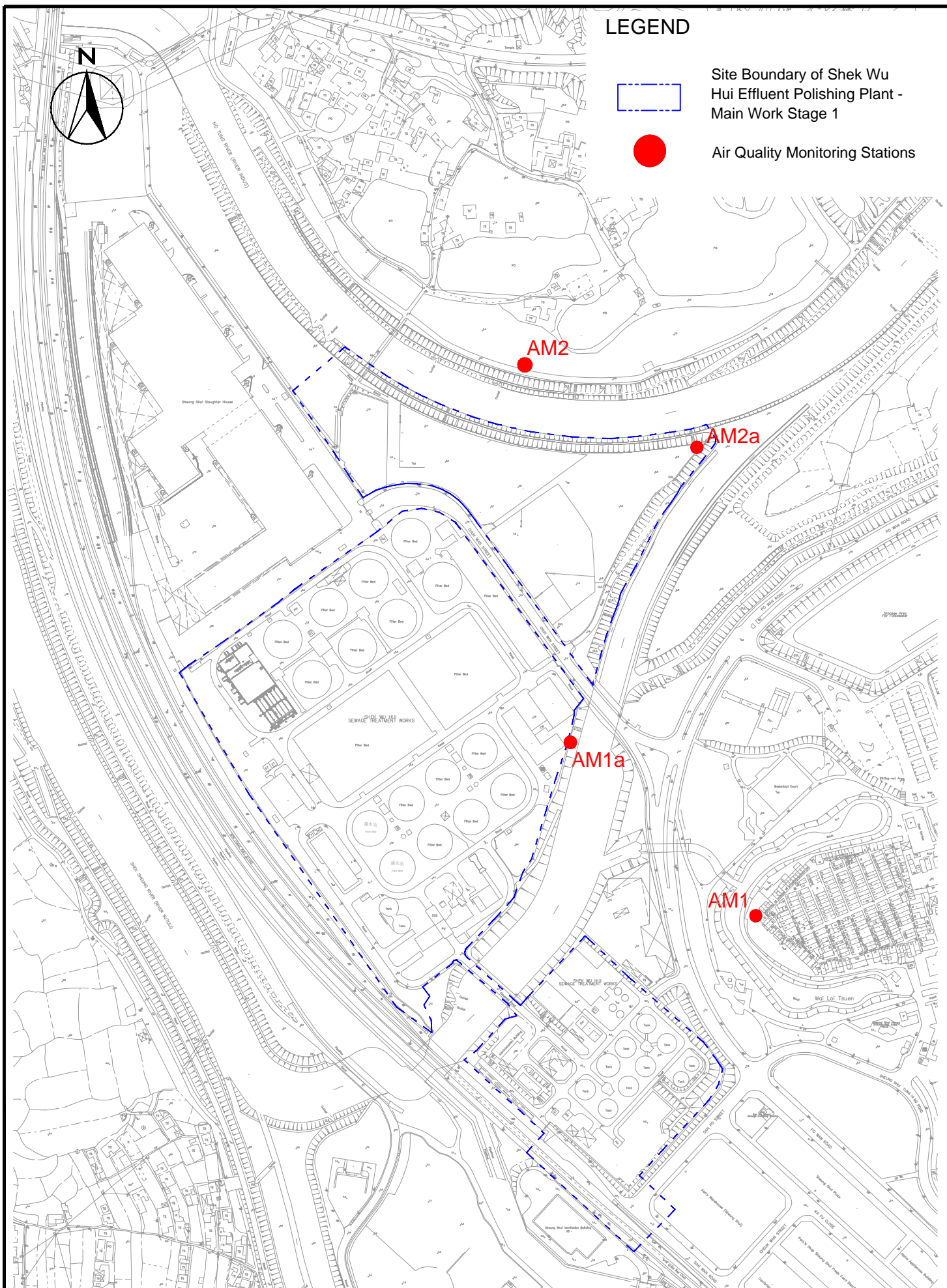
SCALE	1:4000@A4	DATE	OCT 2019	
CHECK	JM	DRAWN	SY	
JOB No.	MA19019	FIGURE NO.	1.1	REV
				-



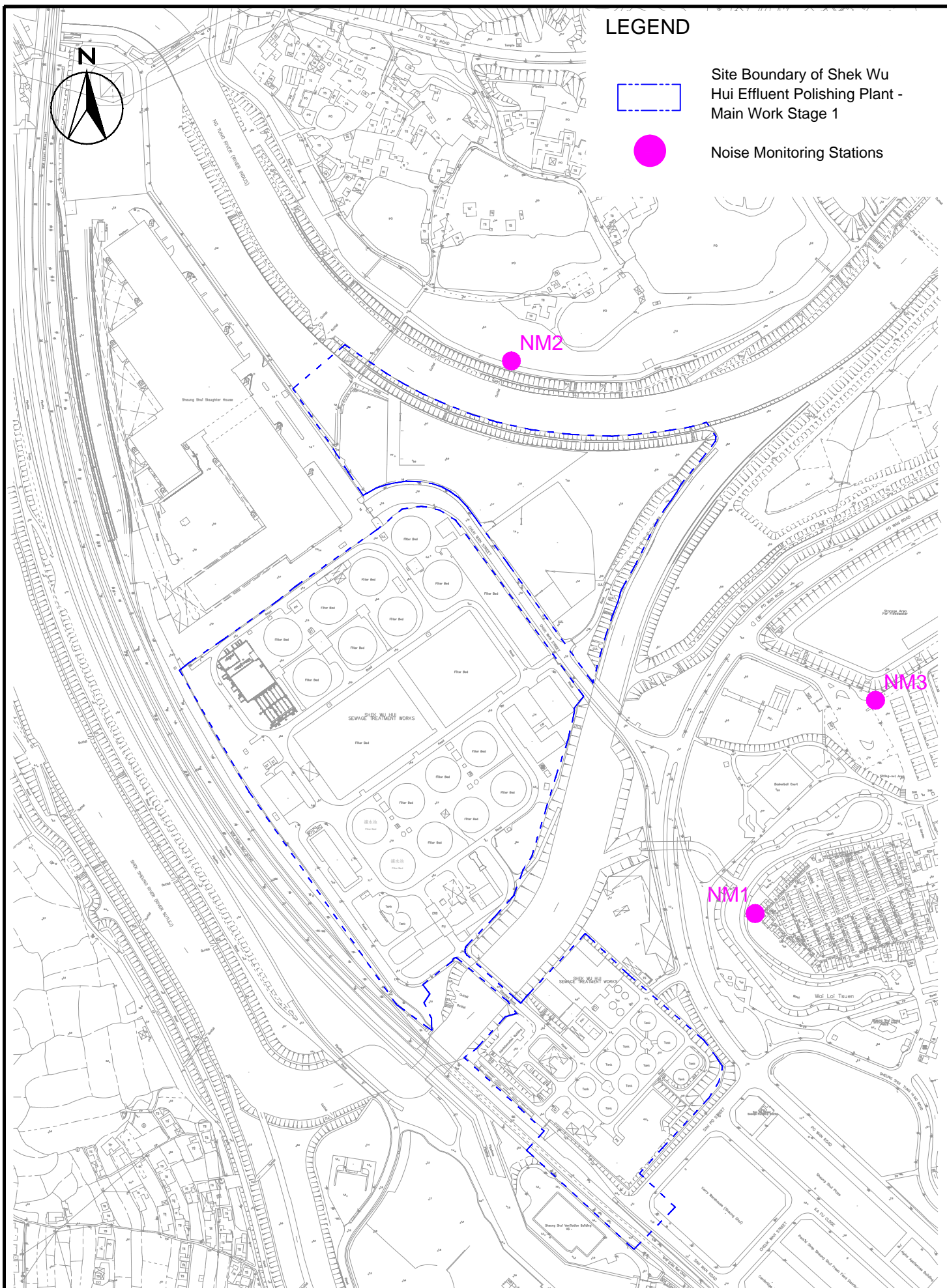
CINOTECH

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

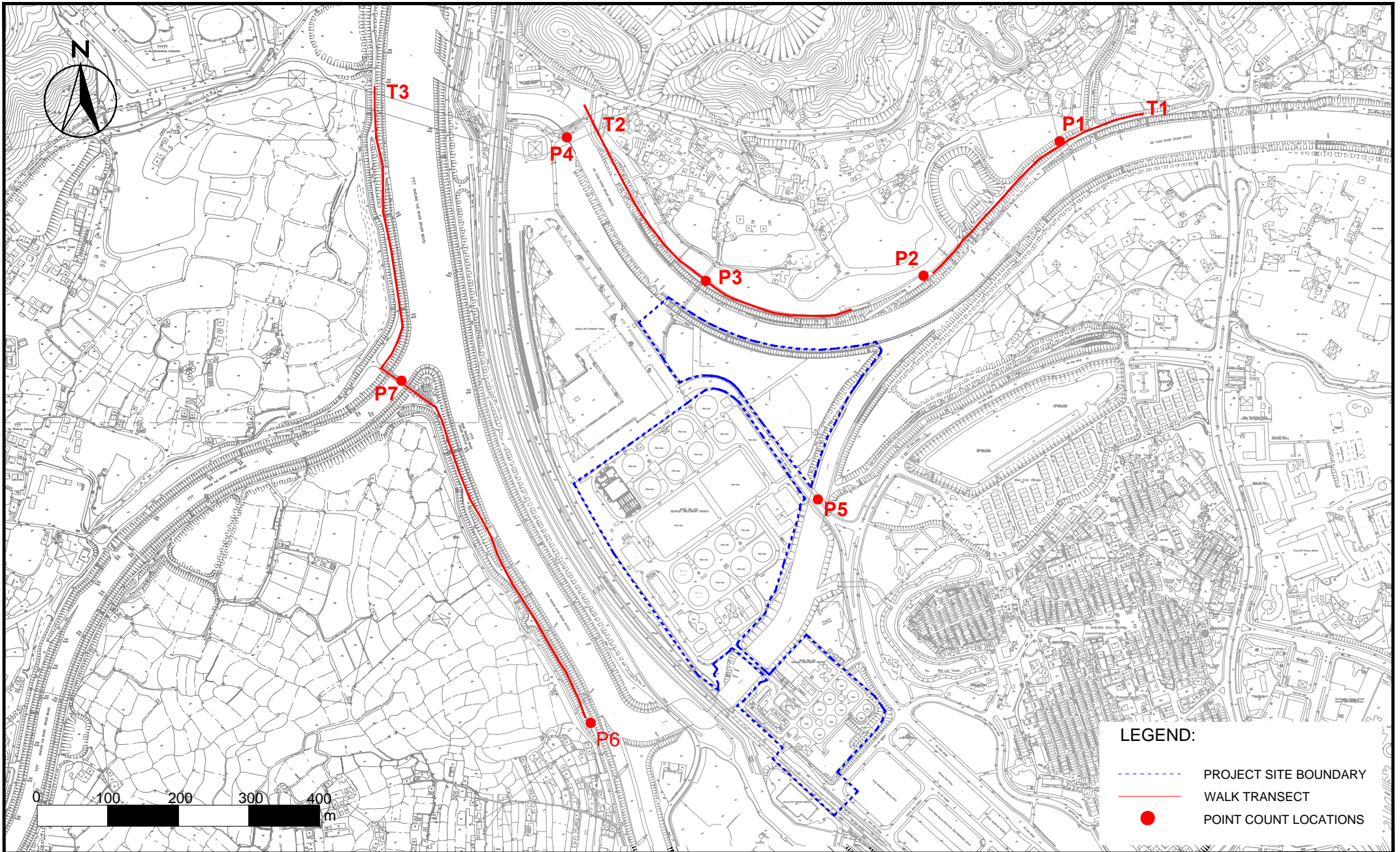
SCALE	N.T.S.	DATE	Sep 2019
CHECK	JM	DRAWN	SY
JOB NO.	MA19019	FIGURE NO.	1.2



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



SCALE	1:4000@A4	DATE	OCT 2019
CHECK	JM	DRAWN	SY
JOB No.	MA19019	FIGURE NO.	3
		REV	-



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. SPW 07/2019
Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1
Impact Air, Noise and Ecology Monitoring Schedule (September 2020)

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

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. SPW 07/2019
Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1
Tentative Impact Air, Noise and Ecology Monitoring Schedule (October 2020)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1-Oct	2-Oct	3-Oct
						1 hr TSP x 3
4-Oct	5-Oct	6-Oct	7-Oct	8-Oct	9-Oct	10-Oct
	Ecology	24 hrs TSP	1 hr TSP x 3 Noise			
11-Oct	12-Oct	13-Oct	14-Oct	15-Oct	16-Oct	17-Oct
	24 hrs TSP	1 hr TSP x 3 Noise			Ecology	24 hrs TSP
18-Oct	19-Oct	20-Oct	21-Oct	22-Oct	23-Oct	24-Oct
	1 hr TSP x 3 Noise	Ecology		24 hrs TSP	1 hr TSP x 3	
25-Oct	26-Oct	27-Oct	28-Oct	29-Oct	30-Oct	31-Oct
			24 hrs TSP Ecology	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-Aug-20
 Manufacturer: Sibata Scientific Technology LTD. Validity of Calibration Record 5-Oct-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

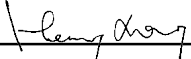
Calibration of 1 hr TSP		
Calibration Point	Laser Dust Monitor	HVS
	Mass Concentration ($\mu\text{g}/\text{m}^3$) X-axis	Mass concentration ($\mu\text{g}/\text{m}^3$) Y-axis
1	41.0	65.8
2	31.0	62.7
3	21.0	59.0
Average	31.0	62.5
By Linear Regression of Y on X Slope , mw = <u>0.3400</u> Intercept, bw = <u>51.9600</u> Correlation coefficient* = <u>0.9987</u>		
Set Correlation Factor		
Particulate Concentration by High Volume Sampler ($\mu\text{g}/\text{m}^3$)		62.5
Particulate Concentration by Dust Meter ($\mu\text{g}/\text{m}^3$)		31.0
Measureing time, (min)		60.0
Set Correlation Factor , SCF		
SCF = [K=High Volume Sampler / Dust Meter, ($\mu\text{g}/\text{m}^3$)]		<u>2.0</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-Aug-20
 Manufacturer: Sibata Scientific Technology LTD. Validity of Calibration Record 5-Oct-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

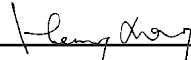
Calibration of 1 hr TSP		
Calibration Point	Laser Dust Monitor	HVS
	Mass Concentration ($\mu\text{g}/\text{m}^3$) X-axis	Mass concentration ($\mu\text{g}/\text{m}^3$) Y-axis
1	41.0	65.8
2	32.0	62.7
3	23.0	59.0
Average	32.0	62.5
By Linear Regression of Y on X Slope , mw = <u>0.3778</u> Intercept, bw = <u>50.4111</u> Correlation coefficient* = <u>0.9987</u>		
Set Correlation Factor		
Particulate Concentration by High Volume Sampler ($\mu\text{g}/\text{m}^3$)		62.5
Particulate Concentration by Dust Meter ($\mu\text{g}/\text{m}^3$)		32.0
Measureing time, (min)		60.0
Set Correlation Factor , SCF		
SCF = [K=High Volume Sampler / Dust Meter, ($\mu\text{g}/\text{m}^3$)]		<u>2.0</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-Aug-20
 Manufacturer: Sibata Scientific Technology LTD. Validity of Calibration Record 5-Oct-20
 Model No.: LD-5R
 Serial No.: 972781
 Equipment No.: SA-01-10 Sensitivity 0.001 mg/m3
 High Volume Sampler No.: A-01-01A Before Sensitivity Adjustment 734 CPM
 Tisch Calibration Orifice No.: 3607 After Sensitivity Adjustment 734 CPM

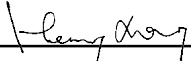
Calibration of 1 hr TSP		
Calibration Point	Laser Dust Monitor	HVS
	Mass Concentration ($\mu\text{g}/\text{m}^3$) X-axis	Mass concentration ($\mu\text{g}/\text{m}^3$) Y-axis
1	42.0	65.8
2	34.0	62.7
3	26.0	59.0
Average	34.0	62.5
By Linear Regression of Y on X Slope , mw = <u>0.4250</u> Intercept, bw = <u>48.0500</u> Correlation coefficient* = <u>0.9987</u>		
Set Correlation Factor		
Particulate Concentration by High Volume Sampler ($\mu\text{g}/\text{m}^3$)		62.5
Particulate Concentration by Dust Meter ($\mu\text{g}/\text{m}^3$)		34.0
Measureing time, (min)		60.0
Set Correlation Factor , SCF		
SCF = [K=High Volume Sampler / Dust Meter, ($\mu\text{g}/\text{m}^3$)]		<u>1.8</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= $\Delta Vol((Pa-\Delta P)/Pstd)(Tstd/Ta)$	Va= $\Delta Vol((Pa-\Delta P)/Pa)$
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. MA19019/17/0005

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. MA19019/17/0006

Project No. AM1a - Site boundary of the Shek Wu Hui STW (East)
 Date: 7-Sep-20 Next Due Date: 7-Nov-20 Operator: SK
 Equipment No.: A-01-17 Model No.: GS2310 Serial No. 3460

Ambient Condition			
Temperature, Ta (K)	302.4	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	12.8	3.54	60.27	9.2	3.00
2	10.1	3.15	53.59	6.9	2.60
3	8.0	2.80	47.75	5.5	2.32
4	5.2	2.26	38.59	3.2	1.77
5	2.6	1.60	27.42	1.8	1.33

By Linear Regression of Y on X

Slope, mw = 0.0514 Intercept, bw = -0.1349
 Correlation coefficient* = 0.9969

*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 = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 4.39

Remarks: _____

Conducted by: SK Wong Signature: Date: 7 September 2020
 Checked by: Henry Leung Signature: Date: 7 September 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

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET



File No. MA19019/24/0006

Project No. AM2a - Site Boundary of the Shek Wu Hui STW (North)
 Date: 7-Sep-20 Next Due Date: 7-Nov-20 Operator: SK
 Equipment No.: A-01-24 Model No.: TE 5170 Serial No. 1659

Ambient Condition			
Temperature, Ta (K)	302.4	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	13.3	3.61	61.43	10.3	3.18
2	10.8	3.25	55.40	8.2	2.83
3	8.3	2.85	48.63	6.4	2.50
4	6.3	2.48	42.42	4.2	2.03
5	3.2	1.77	30.37	2.0	1.40

By Linear Regression of Y on X

Slope, mw = 0.0579 Intercept, bw = -0.3697
 Correlation coefficient* = 0.9982

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

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

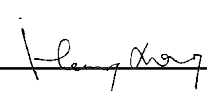
From the Regression Equation, the "Y" value according to

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

Therefore, Set Point; W = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 4.59

Remarks: _____

Conducted by: SK Wong Signature:  Date: 7 September 2020

Checked by: Henry Leung Signature:  Date: 7 September 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-Sep-20	30.3	76	1.1
2-Sep-20	30.0	77	0.4
3-Sep-20	30.2	78	0.4
4-Sep-20	29.8	82	0.1
5-Sep-20	28.4	83	43.9
6-Sep-20	29.1	80	0
7-Sep-20	29.4	82	4.7
8-Sep-20	27.1	91	68.9
9-Sep-20	27.9	86	0.2
10-Sep-20	28.5	83	8.2
11-Sep-20	28.9	81	2.7
12-Sep-20	28.2	85	27.9
13-Sep-20	28.4	83	5.7
14-Sep-20	28.1	85	38.2
15-Sep-20	27.3	92	62.6
16-Sep-20	29.5	85	4.4
17-Sep-20	28.7	87	40.6
18-Sep-20	28.3	88	15.9
19-Sep-20	27.2	92	50.8
20-Sep-20	28.6	83	0.7
21-Sep-20	27.4	91	176.8
22-Sep-20	28.6	82	0.5
23-Sep-20	29.1	77	0
24-Sep-20	28.5	80	0.6
25-Sep-20	28.3	76	0
26-Sep-20	28.0	76	Trace
27-Sep-20	27.7	81	1.3
28-Sep-20	26.6	87	26.2
29-Sep-20	26.9	89	21.9
30-Sep-20	27.4	88	104.1

* 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-Sep-20	0:00	285.7	0.1
1-Sep-20	1:00	297.9	0.1
1-Sep-20	2:00	56.7	0.1
1-Sep-20	3:00	38.2	0.1
1-Sep-20	4:00	222.9	0.1
1-Sep-20	5:00	258.5	0.1
1-Sep-20	6:00	224.8	0.1
1-Sep-20	7:00	18.4	0.1
1-Sep-20	8:00	198.6	0.1
1-Sep-20	9:00	279.3	0.1
1-Sep-20	10:00	290.0	0.3
1-Sep-20	11:00	237.0	0.1
1-Sep-20	12:00	349.0	0.1
1-Sep-20	13:00	192.6	0.1
1-Sep-20	14:00	8.8	0.1
1-Sep-20	15:00	230.8	0.8
1-Sep-20	16:00	320.6	0.1
1-Sep-20	17:00	235.1	0.1
1-Sep-20	18:00	112.1	0.1
1-Sep-20	19:00	15.4	0.1
1-Sep-20	20:00	245.8	0.1
1-Sep-20	21:00	276.3	0.1
1-Sep-20	22:00	226.7	0.1
1-Sep-20	23:00	189.6	0.1
2-Sep-20	0:00	217.3	0.1
2-Sep-20	1:00	219.4	0.1
2-Sep-20	2:00	267.0	0.1
2-Sep-20	3:00	211.8	0.1
2-Sep-20	4:00	250.7	0.1
2-Sep-20	5:00	323.9	0.1
2-Sep-20	6:00	267.6	0.1
2-Sep-20	7:00	227.4	0.1
2-Sep-20	8:00	251.9	0.1
2-Sep-20	9:00	224.5	0.2
2-Sep-20	10:00	203.1	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)
2-Sep-20	11:00	269.5	0.1
2-Sep-20	12:00	262.2	0.4
2-Sep-20	13:00	86.2	0.9
2-Sep-20	14:00	145.6	0.2
2-Sep-20	15:00	61.3	0.2
2-Sep-20	16:00	204.5	0.3
2-Sep-20	17:00	216.7	0.2
2-Sep-20	18:00	240.9	0.1
2-Sep-20	19:00	257.4	0.1
2-Sep-20	20:00	32.7	0.1
2-Sep-20	21:00	19.7	0.1
2-Sep-20	22:00	226.3	0.1
2-Sep-20	23:00	229.1	0.1
3-Sep-20	0:00	57.1	0.1
3-Sep-20	1:00	336.7	0.1
3-Sep-20	2:00	60.6	0.1
3-Sep-20	3:00	60.6	0.1
3-Sep-20	4:00	155.0	0.1
3-Sep-20	5:00	60.5	0.1
3-Sep-20	6:00	283.2	0.1
3-Sep-20	7:00	227.4	0.1
3-Sep-20	8:00	217.1	0.1
3-Sep-20	9:00	2.7	0.1
3-Sep-20	10:00	168.2	0.1
3-Sep-20	11:00	87.6	0.1
3-Sep-20	12:00	339.7	0.1
3-Sep-20	13:00	88.9	0.1
3-Sep-20	14:00	103.5	0.1
3-Sep-20	15:00	162.1	0.1
3-Sep-20	16:00	192.2	0.1
3-Sep-20	17:00	118.5	0.1
3-Sep-20	18:00	209.3	0.1
3-Sep-20	19:00	233.6	0.1
3-Sep-20	20:00	223.8	0.1
3-Sep-20	21:00	237.9	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)
3-Sep-20	22:00	232.7	0.1
3-Sep-20	23:00	231.4	0.1
4-Sep-20	0:00	55.0	0.1
4-Sep-20	1:00	71.7	0.1
4-Sep-20	2:00	218.1	0.1
4-Sep-20	3:00	295.7	0.1
4-Sep-20	4:00	242.2	0.1
4-Sep-20	5:00	39.6	0.1
4-Sep-20	6:00	181.4	0.1
4-Sep-20	7:00	62.1	0.1
4-Sep-20	8:00	223.5	0.1
4-Sep-20	9:00	64.6	0.1
4-Sep-20	10:00	94.9	0.1
4-Sep-20	11:00	59.9	0.1
4-Sep-20	12:00	133.3	0.2
4-Sep-20	13:00	149.1	0.1
4-Sep-20	14:00	163.3	0.1
4-Sep-20	15:00	85.2	0.1
4-Sep-20	16:00	84.2	0.2
4-Sep-20	17:00	91.3	0.1
4-Sep-20	18:00	85.2	0.1
4-Sep-20	19:00	109.1	0.1
4-Sep-20	20:00	80.2	0.1
4-Sep-20	21:00	56.3	0.1
4-Sep-20	22:00	43.5	0.1
4-Sep-20	23:00	66.3	0.1
5-Sep-20	0:00	40.9	0.1
5-Sep-20	1:00	90.6	0.1
5-Sep-20	2:00	82.1	0.1
5-Sep-20	3:00	69.3	0.1
5-Sep-20	4:00	113.2	0.1
5-Sep-20	5:00	70.0	0.1
5-Sep-20	6:00	73.3	0.1
5-Sep-20	7:00	83.9	0.2
5-Sep-20	8:00	73.9	0.2

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

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
5-Sep-20	9:00	52.0	0.1
5-Sep-20	10:00	231.8	0.1
5-Sep-20	11:00	113.5	0.1
5-Sep-20	12:00	289.2	0.1
5-Sep-20	13:00	302.8	0.2
5-Sep-20	14:00	55.3	0.1
5-Sep-20	15:00	223.2	0.1
5-Sep-20	16:00	314.9	0.2
5-Sep-20	17:00	59.9	0.1
5-Sep-20	18:00	66.5	0.1
5-Sep-20	19:00	118.0	0.1
5-Sep-20	20:00	74.8	0.1
5-Sep-20	21:00	87.5	0.1
5-Sep-20	22:00	64.1	0.1
5-Sep-20	23:00	84.8	0.1
6-Sep-20	0:00	221.5	0.1
6-Sep-20	1:00	42.8	0.1
6-Sep-20	2:00	37.7	0.1
6-Sep-20	3:00	2.4	0.1
6-Sep-20	4:00	217.0	0.1
6-Sep-20	5:00	218.6	0.1
6-Sep-20	6:00	77.0	0.1
6-Sep-20	7:00	253.1	0.1
6-Sep-20	8:00	59.2	0.1
6-Sep-20	9:00	53.2	0.1
6-Sep-20	10:00	79.0	0.1
6-Sep-20	11:00	196.7	0.1
6-Sep-20	12:00	94.3	0.1
6-Sep-20	13:00	76.5	0.5
6-Sep-20	14:00	70.4	0.1
6-Sep-20	15:00	208.7	0.1
6-Sep-20	16:00	80.7	0.2
6-Sep-20	17:00	106.1	0.1
6-Sep-20	18:00	146.7	0.1
6-Sep-20	19:00	119.1	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)
6-Sep-20	20:00	69.3	0.1
6-Sep-20	21:00	62.5	0.1
6-Sep-20	22:00	97.7	0.1
6-Sep-20	23:00	73.1	0.1
7-Sep-20	0:00	149.5	0.1
7-Sep-20	1:00	47.8	0.1
7-Sep-20	2:00	9.4	0.1
7-Sep-20	3:00	12.7	0.1
7-Sep-20	4:00	36.6	0.1
7-Sep-20	5:00	-52.3	0.1
7-Sep-20	6:00	95.6	0.1
7-Sep-20	7:00	44.6	0.1
7-Sep-20	8:00	126.9	0.2
7-Sep-20	9:00	206.6	0.1
7-Sep-20	10:00	141.3	0.1
7-Sep-20	11:00	86.8	0.1
7-Sep-20	12:00	73.6	0.1
7-Sep-20	13:00	143.2	0.1
7-Sep-20	14:00	117.1	0.1
7-Sep-20	15:00	84.0	0.1
7-Sep-20	16:00	48.7	0.1
7-Sep-20	17:00	53.7	0.1
7-Sep-20	18:00	69.6	0.1
7-Sep-20	19:00	90.7	0.1
7-Sep-20	20:00	99.6	0.1
7-Sep-20	21:00	95.9	0.1
7-Sep-20	22:00	90.7	0.1
7-Sep-20	23:00	58.4	0.1
8-Sep-20	0:00	84.0	0.1
8-Sep-20	1:00	62.2	0.1
8-Sep-20	2:00	76.9	0.1
8-Sep-20	3:00	89.2	0.5
8-Sep-20	4:00	172.2	0.2
8-Sep-20	5:00	66.4	0.1
8-Sep-20	6:00	72.6	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)
8-Sep-20	7:00	78.8	0.1
8-Sep-20	8:00	62.9	0.1
8-Sep-20	9:00	167.4	0.1
8-Sep-20	10:00	63.7	0.1
8-Sep-20	11:00	96.0	0.1
8-Sep-20	12:00	191.2	0.1
8-Sep-20	13:00	24.3	0.1
8-Sep-20	14:00	78.6	0.1
8-Sep-20	15:00	346.0	0.1
8-Sep-20	16:00	278.6	0.1
8-Sep-20	17:00	73.9	0.1
8-Sep-20	18:00	87.6	0.1
8-Sep-20	19:00	96.4	0.1
8-Sep-20	20:00	72.6	0.1
8-Sep-20	21:00	92.7	0.1
8-Sep-20	22:00	65.3	0.1
8-Sep-20	23:00	70.6	0.1
9-Sep-20	0:00	82.1	0.1
9-Sep-20	1:00	43.3	0.1
9-Sep-20	2:00	72.2	0.1
9-Sep-20	3:00	71.2	0.1
9-Sep-20	4:00	339.7	0.1
9-Sep-20	5:00	222.7	0.1
9-Sep-20	6:00	51.9	0.1
9-Sep-20	7:00	61.1	0.1
9-Sep-20	8:00	80.3	0.1
9-Sep-20	9:00	87.7	0.1
9-Sep-20	10:00	203.1	0.2
9-Sep-20	11:00	133.7	0.1
9-Sep-20	12:00	59.6	0.1
9-Sep-20	13:00	36.6	0.1
9-Sep-20	14:00	87.9	0.1
9-Sep-20	15:00	76.0	0.1
9-Sep-20	16:00	59.2	0.1
9-Sep-20	17:00	73.8	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)
9-Sep-20	18:00	62.1	0.1
9-Sep-20	19:00	62.1	0.1
9-Sep-20	20:00	52.0	0.1
9-Sep-20	21:00	64.8	0.1
9-Sep-20	22:00	89.9	0.1
9-Sep-20	23:00	83.3	0.1
10-Sep-20	0:00	57.1	0.1
10-Sep-20	1:00	215.2	0.1
10-Sep-20	2:00	195.3	0.1
10-Sep-20	3:00	292.5	0.1
10-Sep-20	4:00	329.2	0.1
10-Sep-20	5:00	52.2	0.1
10-Sep-20	6:00	36.2	0.1
10-Sep-20	7:00	27.2	0.1
10-Sep-20	8:00	293.4	0.1
10-Sep-20	9:00	261.3	0.1
10-Sep-20	10:00	76.0	0.1
10-Sep-20	11:00	258.7	0.1
10-Sep-20	12:00	295.6	0.1
10-Sep-20	13:00	269.4	1.7
10-Sep-20	14:00	288.2	0.5
10-Sep-20	15:00	287.0	0.4
10-Sep-20	16:00	86.6	0.1
10-Sep-20	17:00	222.4	0.1
10-Sep-20	18:00	32.2	0.1
10-Sep-20	19:00	28.2	0.1
10-Sep-20	20:00	73.3	0.1
10-Sep-20	21:00	151.6	0.1
10-Sep-20	22:00	76.8	0.1
10-Sep-20	23:00	258.4	0.1
11-Sep-20	0:00	4.5	0.1
11-Sep-20	1:00	317.8	0.1
11-Sep-20	2:00	49.6	0.1
11-Sep-20	3:00	53.5	0.1
11-Sep-20	4:00	39.6	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)
11-Sep-20	5:00	44.7	0.1
11-Sep-20	6:00	46.2	0.1
11-Sep-20	7:00	57.9	0.1
11-Sep-20	8:00	22.7	0.1
11-Sep-20	9:00	191.7	0.1
11-Sep-20	10:00	4.1	0.1
11-Sep-20	11:00	183.8	0.1
11-Sep-20	12:00	56.1	0.1
11-Sep-20	13:00	312.8	0.6
11-Sep-20	14:00	269.4	2.8
11-Sep-20	15:00	238.2	0.3
11-Sep-20	16:00	218.4	0.1
11-Sep-20	17:00	206.8	0.1
11-Sep-20	18:00	162.4	0.1
11-Sep-20	19:00	157.4	0.1
11-Sep-20	20:00	357.6	0.1
11-Sep-20	21:00	203.7	0.1
11-Sep-20	22:00	283.7	0.1
11-Sep-20	23:00	172.2	0.1
12-Sep-20	0:00	237.4	0.1
12-Sep-20	1:00	234.6	0.1
12-Sep-20	2:00	294.1	0.1
12-Sep-20	3:00	267.0	0.1
12-Sep-20	4:00	242.3	0.1
12-Sep-20	5:00	61.5	0.1
12-Sep-20	6:00	351.0	0.5
12-Sep-20	7:00	40.9	0.1
12-Sep-20	8:00	245.5	0.2
12-Sep-20	9:00	224.6	0.1
12-Sep-20	10:00	86.2	0.1
12-Sep-20	11:00	45.3	0.1
12-Sep-20	12:00	55.1	0.1
12-Sep-20	13:00	287.0	0.3
12-Sep-20	14:00	204.3	0.1
12-Sep-20	15:00	87.5	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)
12-Sep-20	16:00	225.8	0.1
12-Sep-20	17:00	259.4	0.1
12-Sep-20	18:00	5.7	0.1
12-Sep-20	19:00	67.8	0.1
12-Sep-20	20:00	115.2	0.1
12-Sep-20	21:00	139.8	0.1
12-Sep-20	22:00	71.1	0.1
12-Sep-20	23:00	87.0	0.1
13-Sep-20	0:00	66.7	0.1
13-Sep-20	1:00	88.2	0.1
13-Sep-20	2:00	54.1	0.1
13-Sep-20	3:00	39.3	0.1
13-Sep-20	4:00	217.0	0.1
13-Sep-20	5:00	234.6	0.1
13-Sep-20	6:00	203.2	0.1
13-Sep-20	7:00	234.9	0.2
13-Sep-20	8:00	75.6	0.2
13-Sep-20	9:00	83.2	0.2
13-Sep-20	10:00	73.9	0.2
13-Sep-20	11:00	62.8	0.3
13-Sep-20	12:00	77.9	0.3
13-Sep-20	13:00	52.3	0.5
13-Sep-20	14:00	102.3	0.6
13-Sep-20	15:00	146.7	0.3
13-Sep-20	16:00	47.2	0.2
13-Sep-20	17:00	83.5	0.3
13-Sep-20	18:00	74.8	0.2
13-Sep-20	19:00	94.1	0.2
13-Sep-20	20:00	93.5	0.2
13-Sep-20	21:00	84.2	0.1
13-Sep-20	22:00	76.5	0.2
13-Sep-20	23:00	49.2	0.2
14-Sep-20	0:00	75.4	0.2
14-Sep-20	1:00	86.3	0.2
14-Sep-20	2:00	63.3	0.2

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

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
14-Sep-20	3:00	72.0	0.2
14-Sep-20	4:00	151.8	0.1
14-Sep-20	5:00	89.6	0.1
14-Sep-20	6:00	9.8	0.1
14-Sep-20	7:00	118.4	0.2
14-Sep-20	8:00	70.7	0.2
14-Sep-20	9:00	77.1	0.7
14-Sep-20	10:00	126.9	0.4
14-Sep-20	11:00	82.7	0.3
14-Sep-20	12:00	64.9	0.2
14-Sep-20	13:00	235.3	0.3
14-Sep-20	14:00	92.4	0.4
14-Sep-20	15:00	166.6	0.3
14-Sep-20	16:00	88.8	0.3
14-Sep-20	17:00	135.2	0.2
14-Sep-20	18:00	67.0	0.2
14-Sep-20	19:00	72.8	0.2
14-Sep-20	20:00	96.6	0.2
14-Sep-20	21:00	59.8	0.2
14-Sep-20	22:00	88.8	0.1
14-Sep-20	23:00	71.3	0.1
15-Sep-20	0:00	86.4	0.1
15-Sep-20	1:00	93.8	0.3
15-Sep-20	2:00	55.5	0.1
15-Sep-20	3:00	72.1	0.1
15-Sep-20	4:00	80.2	0.3
15-Sep-20	5:00	81.5	0.1
15-Sep-20	6:00	72.2	0.1
15-Sep-20	7:00	66.1	0.1
15-Sep-20	8:00	49.1	0.1
15-Sep-20	9:00	57.5	0.3
15-Sep-20	10:00	85.9	0.1
15-Sep-20	11:00	82.2	0.1
15-Sep-20	12:00	96.2	0.2
15-Sep-20	13:00	254.4	0.2

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

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
15-Sep-20	14:00	130.8	0.1
15-Sep-20	15:00	53.0	0.1
15-Sep-20	16:00	56.8	0.1
15-Sep-20	17:00	70.7	0.1
15-Sep-20	18:00	31.5	0.1
15-Sep-20	19:00	58.9	0.1
15-Sep-20	20:00	62.2	0.1
15-Sep-20	21:00	53.0	0.1
15-Sep-20	22:00	9.9	0.1
15-Sep-20	23:00	312.9	0.1
16-Sep-20	0:00	56.2	0.1
16-Sep-20	1:00	81.2	0.1
16-Sep-20	2:00	69.3	0.1
16-Sep-20	3:00	51.9	0.1
16-Sep-20	4:00	44.3	0.1
16-Sep-20	5:00	67.9	0.1
16-Sep-20	6:00	162.2	0.1
16-Sep-20	7:00	53.4	0.2
16-Sep-20	8:00	85.4	0.1
16-Sep-20	9:00	82.6	0.1
16-Sep-20	10:00	73.5	1.0
16-Sep-20	11:00	79.1	0.3
16-Sep-20	12:00	112.0	0.3
16-Sep-20	13:00	245.2	0.3
16-Sep-20	14:00	336.3	0.3
16-Sep-20	15:00	163.3	0.3
16-Sep-20	16:00	172.2	0.1
16-Sep-20	17:00	87.6	0.1
16-Sep-20	18:00	102.3	0.2
16-Sep-20	19:00	79.2	0.2
16-Sep-20	20:00	80.5	0.2
16-Sep-20	21:00	84.2	0.2
16-Sep-20	22:00	104.3	0.2
16-Sep-20	23:00	82.4	0.2
17-Sep-20	0:00	69.5	0.2

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

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
17-Sep-20	1:00	78.9	0.2
17-Sep-20	2:00	62.9	0.1
17-Sep-20	3:00	52.8	0.1
17-Sep-20	4:00	49.4	0.1
17-Sep-20	5:00	41.4	0.1
17-Sep-20	6:00	70.1	0.1
17-Sep-20	7:00	77.4	0.1
17-Sep-20	8:00	44.1	0.1
17-Sep-20	9:00	58.7	0.2
17-Sep-20	10:00	112.1	0.2
17-Sep-20	11:00	81.8	0.3
17-Sep-20	12:00	82.0	0.4
17-Sep-20	13:00	67.5	0.8
17-Sep-20	14:00	105.0	0.2
17-Sep-20	15:00	152.0	0.2
17-Sep-20	16:00	73.5	0.3
17-Sep-20	17:00	81.0	0.5
17-Sep-20	18:00	81.9	0.1
17-Sep-20	19:00	58.2	0.2
17-Sep-20	20:00	108.5	0.2
17-Sep-20	21:00	89.8	0.1
17-Sep-20	22:00	46.3	0.2
17-Sep-20	23:00	85.2	0.1
18-Sep-20	0:00	72.2	0.1
18-Sep-20	1:00	83.3	0.1
18-Sep-20	2:00	77.8	0.1
18-Sep-20	3:00	94.5	0.1
18-Sep-20	4:00	85.5	0.1
18-Sep-20	5:00	82.5	0.1
18-Sep-20	6:00	72.5	0.2
18-Sep-20	7:00	93.1	0.3
18-Sep-20	8:00	79.5	0.2
18-Sep-20	9:00	71.3	0.2
18-Sep-20	10:00	146.2	0.3
18-Sep-20	11:00	98.0	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)
18-Sep-20	12:00	132.0	0.4
18-Sep-20	13:00	298.0	0.1
18-Sep-20	14:00	127.5	1.4
18-Sep-20	15:00	309.0	0.3
18-Sep-20	16:00	15.9	0.3
18-Sep-20	17:00	54.6	0.1
18-Sep-20	18:00	55.5	0.1
18-Sep-20	19:00	62.9	0.1
18-Sep-20	20:00	121.9	0.2
18-Sep-20	21:00	82.7	0.2
18-Sep-20	22:00	98.0	0.2
18-Sep-20	23:00	89.2	0.1
19-Sep-20	0:00	94.1	0.1
19-Sep-20	1:00	57.0	0.2
19-Sep-20	2:00	45.1	0.2
19-Sep-20	3:00	72.0	0.1
19-Sep-20	4:00	293.7	0.2
19-Sep-20	5:00	119.8	0.1
19-Sep-20	6:00	68.8	0.2
19-Sep-20	7:00	141.9	0.2
19-Sep-20	8:00	65.0	0.3
19-Sep-20	9:00	158.8	0.1
19-Sep-20	10:00	153.4	0.2
19-Sep-20	11:00	249.9	0.1
19-Sep-20	12:00	64.2	0.1
19-Sep-20	13:00	261.5	2.9
19-Sep-20	14:00	64.6	0.2
19-Sep-20	15:00	79.6	0.2
19-Sep-20	16:00	14.8	0.1
19-Sep-20	17:00	80.2	0.1
19-Sep-20	18:00	120.5	0.1
19-Sep-20	19:00	19.9	0.1
19-Sep-20	20:00	85.7	0.1
19-Sep-20	21:00	64.9	0.1
19-Sep-20	22:00	70.1	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)
19-Sep-20	23:00	87.5	0.1
20-Sep-20	0:00	140.9	0.1
20-Sep-20	1:00	65.0	0.1
20-Sep-20	2:00	52.8	0.1
20-Sep-20	3:00	81.0	0.1
20-Sep-20	4:00	71.1	0.1
20-Sep-20	5:00	83.1	0.1
20-Sep-20	6:00	74.1	0.1
20-Sep-20	7:00	67.6	0.1
20-Sep-20	8:00	36.5	0.1
20-Sep-20	9:00	44.0	0.1
20-Sep-20	10:00	22.6	0.2
20-Sep-20	11:00	117.3	0.2
20-Sep-20	12:00	279.7	0.3
20-Sep-20	13:00	232.4	0.4
20-Sep-20	14:00	312.7	0.5
20-Sep-20	15:00	142.5	0.4
20-Sep-20	16:00	148.9	0.4
20-Sep-20	17:00	120.2	0.2
20-Sep-20	18:00	70.4	0.2
20-Sep-20	19:00	187.5	0.3
20-Sep-20	20:00	114.4	0.3
20-Sep-20	21:00	94.1	0.3
20-Sep-20	22:00	48.7	0.2
20-Sep-20	23:00	62.2	0.2
21-Sep-20	0:00	70.1	0.2
21-Sep-20	1:00	350.9	0.2
21-Sep-20	2:00	244.3	0.2
21-Sep-20	3:00	67.5	0.2
21-Sep-20	4:00	212.8	0.2
21-Sep-20	5:00	144.1	0.3
21-Sep-20	6:00	335.8	0.3
21-Sep-20	7:00	59.4	0.1
21-Sep-20	8:00	98.8	0.1
21-Sep-20	9:00	105.6	0.5

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

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
21-Sep-20	10:00	75.3	0.4
21-Sep-20	11:00	97.5	0.4
21-Sep-20	12:00	127.2	0.5
21-Sep-20	13:00	96.9	0.6
21-Sep-20	14:00	130.2	0.5
21-Sep-20	15:00	159.6	0.2
21-Sep-20	16:00	158.7	0.3
21-Sep-20	17:00	181.0	0.3
21-Sep-20	18:00	76.0	0.3
21-Sep-20	19:00	141.1	0.3
21-Sep-20	20:00	125.5	0.2
21-Sep-20	21:00	76.5	0.2
21-Sep-20	22:00	53.7	0.2
21-Sep-20	23:00	217.4	0.2
22-Sep-20	0:00	57.0	0.2
22-Sep-20	1:00	38.9	0.1
22-Sep-20	2:00	139.2	0.1
22-Sep-20	3:00	132.5	0.1
22-Sep-20	4:00	58.6	0.1
22-Sep-20	5:00	75.8	0.1
22-Sep-20	6:00	70.4	0.1
22-Sep-20	7:00	57.2	0.1
22-Sep-20	8:00	151.0	0.2
22-Sep-20	9:00	63.1	0.3
22-Sep-20	10:00	88.5	0.4
22-Sep-20	11:00	97.8	0.4
22-Sep-20	12:00	52.9	0.5
22-Sep-20	13:00	102.6	0.5
22-Sep-20	14:00	83.3	0.3
22-Sep-20	15:00	113.3	0.2
22-Sep-20	16:00	71.1	0.2
22-Sep-20	17:00	97.0	0.2
22-Sep-20	18:00	96.9	0.3
22-Sep-20	19:00	76.8	0.2
22-Sep-20	20:00	70.0	0.2

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

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
22-Sep-20	21:00	91.1	0.2
22-Sep-20	22:00	48.5	0.2
22-Sep-20	23:00	70.1	0.2
23-Sep-20	0:00	132.4	0.2
23-Sep-20	1:00	91.6	0.2
23-Sep-20	2:00	121.8	0.2
23-Sep-20	3:00	63.9	0.2
23-Sep-20	4:00	231.5	0.1
23-Sep-20	5:00	57.4	0.1
23-Sep-20	6:00	33.7	0.1
23-Sep-20	7:00	34.7	0.1
23-Sep-20	8:00	182.9	0.1
23-Sep-20	9:00	131.7	0.1
23-Sep-20	10:00	69.9	0.3
23-Sep-20	11:00	91.3	0.3
23-Sep-20	12:00	169.7	0.3
23-Sep-20	13:00	96.9	0.1
23-Sep-20	14:00	192.2	0.4
23-Sep-20	15:00	207.9	0.6
23-Sep-20	16:00	140.1	0.2
23-Sep-20	17:00	110.2	0.2
23-Sep-20	18:00	40.1	0.2
23-Sep-20	19:00	73.5	0.2
23-Sep-20	20:00	147.3	0.2
23-Sep-20	21:00	86.7	0.2
23-Sep-20	22:00	63.2	0.2
23-Sep-20	23:00	57.7	0.1
24-Sep-20	0:00	59.2	0.1
24-Sep-20	1:00	81.4	0.1
24-Sep-20	2:00	25.6	0.1
24-Sep-20	3:00	87.0	0.1
24-Sep-20	4:00	46.9	0.1
24-Sep-20	5:00	39.1	0.1
24-Sep-20	6:00	70.6	0.1
24-Sep-20	7:00	25.4	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)
24-Sep-20	8:00	66.9	0.2
24-Sep-20	9:00	83.1	0.3
24-Sep-20	10:00	37.0	0.3
24-Sep-20	11:00	96.2	0.3
24-Sep-20	12:00	74.5	0.3
24-Sep-20	13:00	270.6	0.4
24-Sep-20	14:00	56.5	0.4
24-Sep-20	15:00	85.3	0.2
24-Sep-20	16:00	75.2	0.1
24-Sep-20	17:00	77.1	0.1
24-Sep-20	18:00	59.0	0.2
24-Sep-20	19:00	17.1	0.1
24-Sep-20	20:00	82.0	0.1
24-Sep-20	21:00	56.3	0.1
24-Sep-20	22:00	41.1	0.1
24-Sep-20	23:00	57.0	0.1
25-Sep-20	0:00	74.7	0.1
25-Sep-20	1:00	66.1	0.1
25-Sep-20	2:00	55.7	0.1
25-Sep-20	3:00	67.4	0.1
25-Sep-20	4:00	57.7	0.1
25-Sep-20	5:00	11.3	0.1
25-Sep-20	6:00	97.0	0.1
25-Sep-20	7:00	47.5	0.1
25-Sep-20	8:00	47.1	0.1
25-Sep-20	9:00	83.5	0.1
25-Sep-20	10:00	354.1	0.1
25-Sep-20	11:00	109.6	0.1
25-Sep-20	12:00	80.4	0.2
25-Sep-20	13:00	79.8	0.3
25-Sep-20	14:00	100.5	0.1
25-Sep-20	15:00	93.6	0.1
25-Sep-20	16:00	150.1	0.1
25-Sep-20	17:00	209.0	0.1
25-Sep-20	18:00	126.7	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-Sep-20	19:00	60.8	0.1
25-Sep-20	20:00	25.2	0.1
25-Sep-20	21:00	70.8	0.1
25-Sep-20	22:00	94.7	0.1
25-Sep-20	23:00	129.0	0.1
26-Sep-20	0:00	67.1	0.1
26-Sep-20	1:00	80.9	0.1
26-Sep-20	2:00	69.7	0.1
26-Sep-20	3:00	79.3	0.1
26-Sep-20	4:00	86.8	0.1
26-Sep-20	5:00	93.3	0.2
26-Sep-20	6:00	87.0	0.1
26-Sep-20	7:00	74.2	0.3
26-Sep-20	8:00	141.1	0.1
26-Sep-20	9:00	130.6	0.1
26-Sep-20	10:00	35.4	0.2
26-Sep-20	11:00	66.4	0.1
26-Sep-20	12:00	120.3	0.1
26-Sep-20	13:00	74.7	0.4
26-Sep-20	14:00	136.6	3.2
26-Sep-20	15:00	82.5	0.7
26-Sep-20	16:00	122.7	0.2
26-Sep-20	17:00	105.3	0.2
26-Sep-20	18:00	90.4	0.2
26-Sep-20	19:00	154.7	0.1
26-Sep-20	20:00	209.6	0.1
26-Sep-20	21:00	121.2	0.2
26-Sep-20	22:00	79.8	0.1
26-Sep-20	23:00	69.3	0.1
27-Sep-20	0:00	69.9	0.1
27-Sep-20	1:00	80.0	0.1
27-Sep-20	2:00	77.2	0.3
27-Sep-20	3:00	76.2	0.2
27-Sep-20	4:00	110.2	0.9
27-Sep-20	5:00	69.7	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)
27-Sep-20	6:00	64.0	0.6
27-Sep-20	7:00	71.5	0.1
27-Sep-20	8:00	164.8	0.1
27-Sep-20	9:00	96.0	1.2
27-Sep-20	10:00	72.6	0.2
27-Sep-20	11:00	65.4	0.4
27-Sep-20	12:00	103.1	0.1
27-Sep-20	13:00	138.3	0.2
27-Sep-20	14:00	55.0	0.2
27-Sep-20	15:00	66.5	0.5
27-Sep-20	16:00	109.4	0.3
27-Sep-20	17:00	77.0	0.1
27-Sep-20	18:00	94.1	0.1
27-Sep-20	19:00	64.4	0.1
27-Sep-20	20:00	88.6	0.1
27-Sep-20	21:00	101.7	0.1
27-Sep-20	22:00	99.8	0.6
27-Sep-20	23:00	85.2	0.1
28-Sep-20	0:00	74.6	0.1
28-Sep-20	1:00	93.6	0.1
28-Sep-20	2:00	70.4	0.1
28-Sep-20	3:00	103.2	0.1
28-Sep-20	4:00	100.6	0.2
28-Sep-20	5:00	76.9	0.1
28-Sep-20	6:00	53.9	0.1
28-Sep-20	7:00	81.7	0.1
28-Sep-20	8:00	93.8	0.2
28-Sep-20	9:00	55.5	0.2
28-Sep-20	10:00	87.7	0.2
28-Sep-20	11:00	75.2	0.1
28-Sep-20	12:00	74.7	0.1
28-Sep-20	13:00	76.0	0.1
28-Sep-20	14:00	84.9	0.2
28-Sep-20	15:00	78.2	0.2
28-Sep-20	16:00	146.2	0.2

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

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
28-Sep-20	17:00	47.1	0.2
28-Sep-20	18:00	36.1	0.1
28-Sep-20	19:00	81.5	0.2
28-Sep-20	20:00	73.1	0.1
28-Sep-20	21:00	54.9	0.1
28-Sep-20	22:00	63.1	0.1
28-Sep-20	23:00	85.7	0.1
29-Sep-20	0:00	81.3	0.1
29-Sep-20	1:00	84.8	0.1
29-Sep-20	2:00	74.1	0.1
29-Sep-20	3:00	109.8	0.1
29-Sep-20	4:00	45.5	0.1
29-Sep-20	5:00	87.0	0.1
29-Sep-20	6:00	67.1	0.1
29-Sep-20	7:00	69.7	0.1
29-Sep-20	8:00	63.1	0.2
29-Sep-20	9:00	62.2	0.1
29-Sep-20	10:00	13.5	0.1
29-Sep-20	11:00	78.2	0.2
29-Sep-20	12:00	111.6	0.1
29-Sep-20	13:00	125.3	0.1
29-Sep-20	14:00	108.0	0.1
29-Sep-20	15:00	71.2	0.1
29-Sep-20	16:00	86.6	0.1
29-Sep-20	17:00	59.9	0.1
29-Sep-20	18:00	81.4	0.1
29-Sep-20	19:00	132.7	0.1
29-Sep-20	20:00	103.7	0.1
29-Sep-20	21:00	78.6	0.1
29-Sep-20	22:00	42.8	0.1
29-Sep-20	23:00	21.2	0.1
30-Sep-20	0:00	59.0	0.1
30-Sep-20	1:00	68.5	0.1
30-Sep-20	2:00	50.3	0.1
30-Sep-20	3:00	50.3	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)
30-Sep-20	4:00	221.7	0.1
30-Sep-20	5:00	266.1	0.1
30-Sep-20	6:00	34.6	0.1
30-Sep-20	7:00	21.6	0.1
30-Sep-20	8:00	139.9	0.2
30-Sep-20	9:00	141.1	0.1
30-Sep-20	10:00	146.0	0.1
30-Sep-20	11:00	10.2	0.1
30-Sep-20	12:00	192.9	0.2
30-Sep-20	13:00	64.8	0.1
30-Sep-20	14:00	267.7	0.1
30-Sep-20	15:00	82.5	0.1
30-Sep-20	16:00	127.2	0.5
30-Sep-20	17:00	43.0	0.2
30-Sep-20	18:00	60.6	0.5
30-Sep-20	19:00	51.3	0.2
30-Sep-20	20:00	50.8	0.2
30-Sep-20	21:00	29.3	0.2
30-Sep-20	22:00	91.0	0.2
30-Sep-20	23:00	76.8	1.4

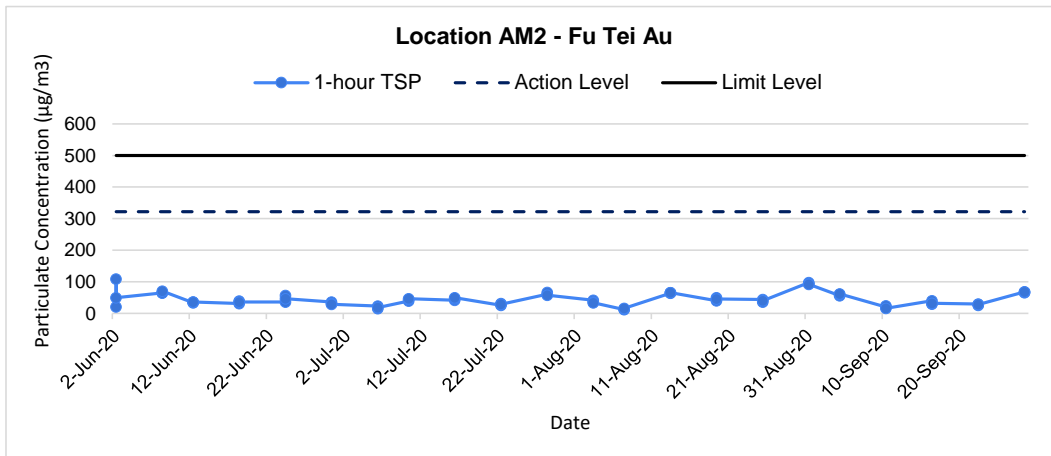
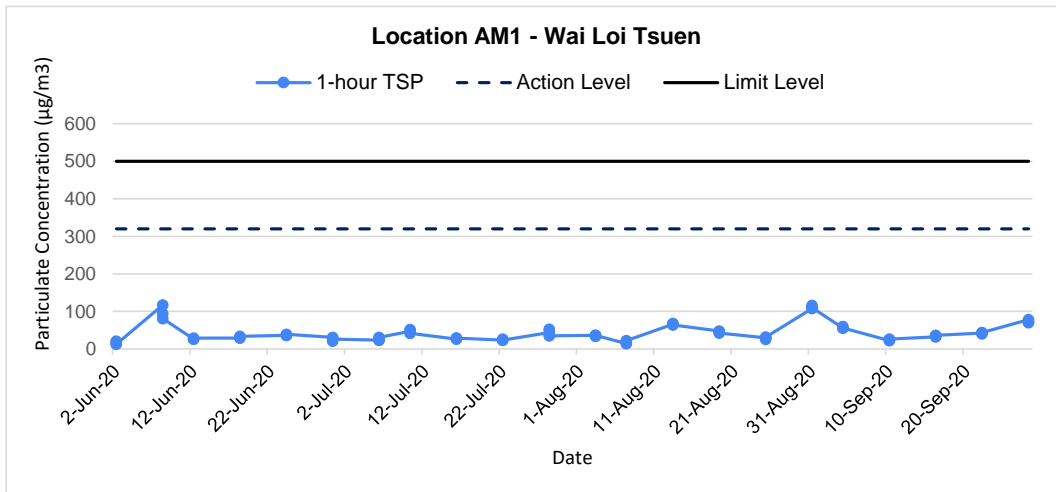
**APPENDIX E
1-HOUR TSP MONITORING RESULTS
AND GRAPHICAL PRESENTATIONS**

Appendix E - 1-hour TSP Monitoring Results

Location AM1 - Wai Loi Tsuen			
Date	Time	Weather	Particulate Concentration ($\mu\text{g}/\text{m}^3$)
4-Sep-20	9:30	Cloudy	56.0
4-Sep-20	10:30	Cloudy	60.0
4-Sep-20	11:30	Cloudy	56.0
10-Sep-20	14:55	Sunny	22.0
10-Sep-20	15:55	Sunny	24.0
10-Sep-20	16:55	Sunny	26.0
16-Sep-20	9:15	Sunny	32.0
16-Sep-20	10:15	Sunny	34.0
16-Sep-20	11:15	Sunny	36.0
22-Sep-20	9:10	Sunny	42.0
22-Sep-20	10:10	Sunny	40.0
22-Sep-20	11:10	Sunny	44.0
28-Sep-20	9:25	Cloudy	78.0
28-Sep-20	10:25	Cloudy	72.0
28-Sep-20	11:25	Cloudy	70.0
		Average	46.1
		Maximum	78.0
		Minimum	22.0

Location AM2 - Fu Tei Au			
Date	Time	Weather	Particulate Concentration ($\mu\text{g}/\text{m}^3$)
4-Sep-20	13:00	Cloudy	56.0
4-Sep-20	14:00	Cloudy	60.0
4-Sep-20	15:00	Cloudy	62.0
10-Sep-20	9:00	Sunny	20.0
10-Sep-20	10:00	Sunny	24.0
10-Sep-20	11:00	Sunny	16.0
16-Sep-20	13:15	Sunny	40.0
16-Sep-20	14:15	Sunny	30.0
16-Sep-20	15:15	Sunny	32.0
22-Sep-20	13:20	Sunny	30.0
22-Sep-20	14:20	Sunny	26.0
22-Sep-20	15:20	Sunny	28.0
28-Sep-20	13:30	Cloudy	68.0
28-Sep-20	14:30	Cloudy	66.0
28-Sep-20	15:30	Cloudy	68.0
		Average	41.7
		Maximum	68.0
		Minimum	16.0

1-hr TSP Concentration Levels



Title	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1	Date	Sep 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

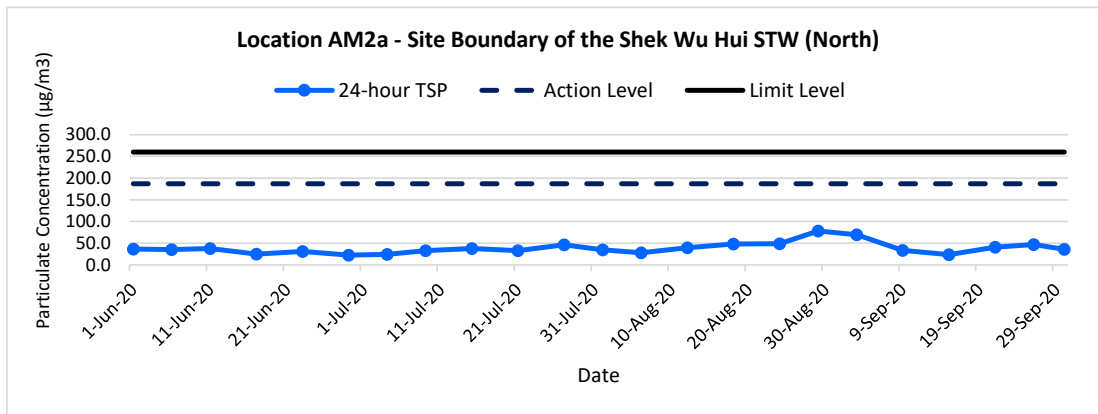
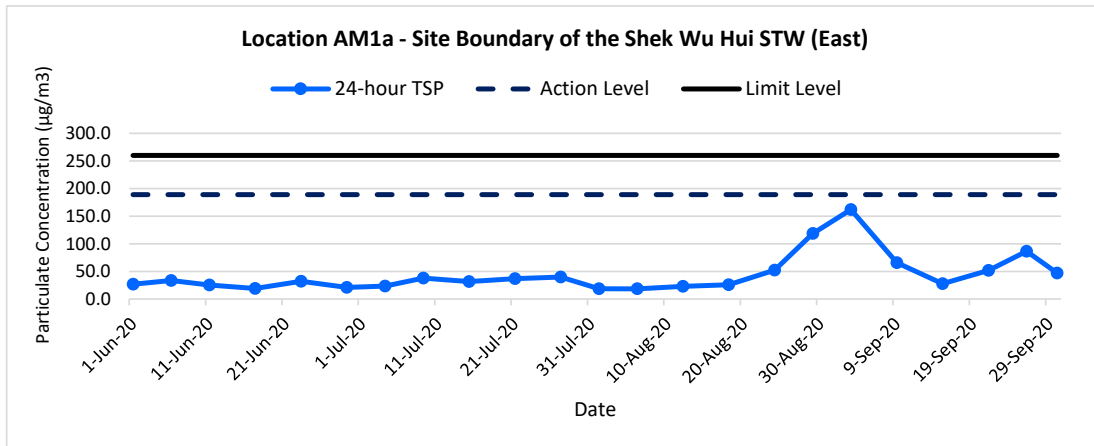
Location AM1a - Site Boundary of the Shek Wu Hui STW (East)

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			
3-Sep-20	Cloudy	303.0	757.4	3.4907	3.7750	0.2843	9138.6	9162.6	24.0	1.22	1.22	1.22	1755.4	162.0
9-Sep-20	Sunny	301.2	757.4	3.4881	3.6033	0.1152	9162.6	9186.6	24.0	1.22	1.22	1.22	1756.4	65.6
15-Sep-20	Sunny	301.4	757.3	3.5119	3.5603	0.0484	9186.6	9210.6	24.0	1.22	1.22	1.22	1755.8	27.6
21-Sep-20	Sunny	301.0	758.9	3.4715	3.5624	0.0909	9210.6	9234.6	24.0	1.22	1.22	1.22	1758.7	51.7
26-Sep-20	Cloudy	300.9	758.4	3.4915	3.6434	0.1519	9234.6	9258.6	24.0	1.22	1.22	1.22	1758.5	86.4
30-Sep-20	Sunny	300.1	757.3	3.4794	3.5621	0.0827	9258.6	9282.6	24.0	1.22	1.22	1.22	1759.5	47.0
													Min	27.6
													Max	162.0
													Average	73.4

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			
3-Sep-20	Cloudy	303.0	757.4	3.5110	3.6329	0.1219	19332.8	19356.8	24.0	1.22	1.22	1.22	1753.7	69.5
9-Sep-20	Sunny	301.2	757.4	3.4755	3.5340	0.0585	19356.8	19380.8	24.0	1.22	1.22	1.22	1757.5	33.3
15-Sep-20	Sunny	301.4	757.3	3.4961	3.5383	0.0422	19380.8	19404.8	24.0	1.22	1.22	1.22	1756.9	24.0
21-Sep-20	Sunny	301.0	758.9	3.5062	3.5777	0.0715	19404.8	19428.8	24.0	1.22	1.22	1.22	1759.6	40.6
26-Sep-20	Cloudy	300.9	758.4	3.4936	3.5763	0.0827	19428.8	19452.8	24.0	1.22	1.22	1.22	1759.4	47.0
30-Sep-20	Sunny	300.1	757.3	3.4705	3.5340	0.0635	19452.8	19476.8	24.0	1.22	1.22	1.22	1760.3	36.1
													Min	24.0
													Max	69.5
													Average	41.8

24-hr TSP Concentration Levels



Title Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 Graphical Presentation of 24-hour TSP Monitoring Results	Date Sep 2020	Project No. MA19019	
		Appendix F	

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

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	32151
Date of Issue:	2019-09-27
Date Received:	2019-09-26
Date Tested:	2019-09-26
Date Completed:	2019-09-27
Next Due Date:	2020-09-26

ATTN: Mr. Henry Leung

Page: 1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 21455
Microphone No.	: 43730
Equipment No.	: N-08-07

Test conditions:

Room Temperature	: 17-22 degree Celsius
Relative Humidity	: 40-70%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**



PATRICK TSE
Laboratory 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

0023155

Customer : Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong	Object 1 : SVAN979 SLM Serial No. /Ref. No. : 27189 / SN-01-01 Object 2 : Microphone Serial No. /Ref. No. : 25204
Customer Code : SVEC09005	Manufacturer : BSWAtech
Date of calibration: 08/01/2020 Date of the recommended re-calibration: 08/01/2021	Certificate No.: 0023155 Handle by: E0002

Measuring results

Reference value	Indication value	Deviation	Allowed deviation	Object
94.0dB	93.7dB	-0.3dB	+/- 1.5dB	1
114.0dB	113.6dB	-0.4dB	+/- 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

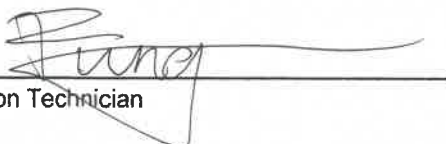
+/- 0.2dB for probability not less than 95%.

Conformity

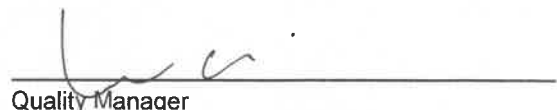
- 1.The resulted values were those obtained at the time of test and applies only to the item calibrated.
- 2.The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring 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

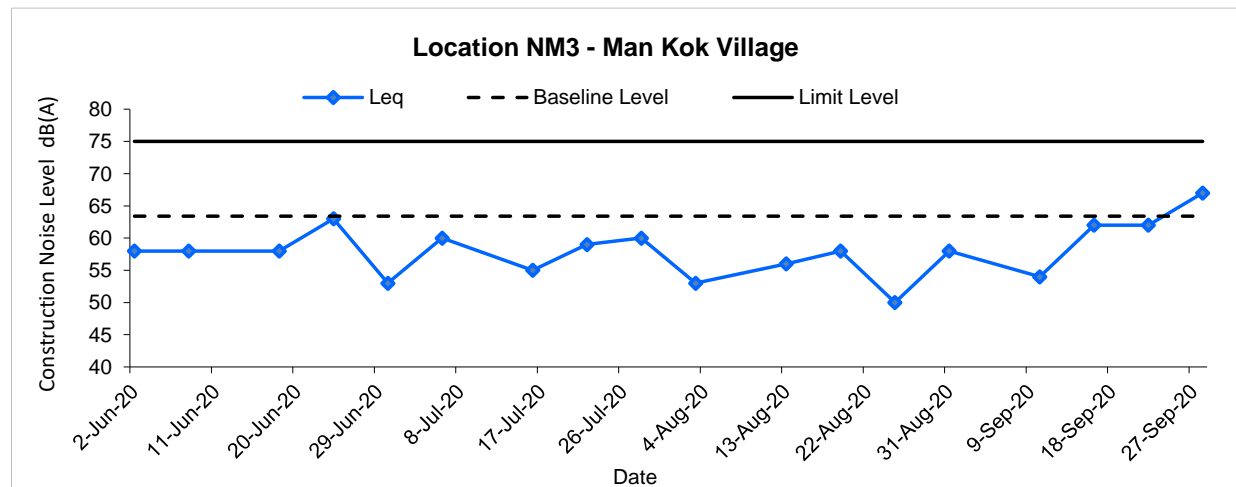
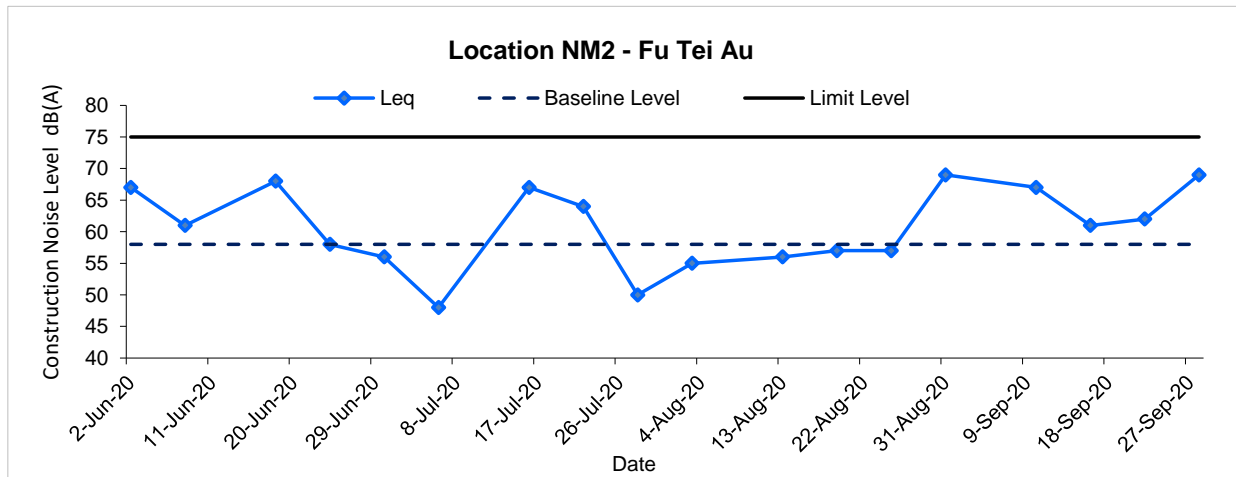
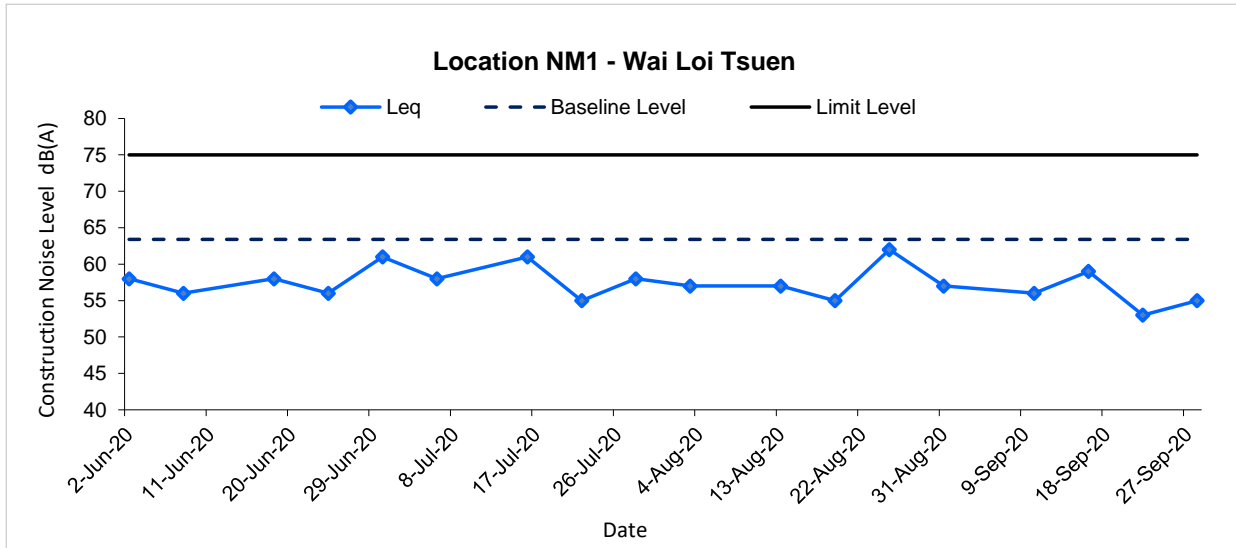
(0700-1900 hrs on Normal Weekdays)

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}
10-Sep-20	14:27	Sunny	56.0	57.7	51.6	63.4	56 Measured ≤ Baseline
16-Sep-20	9:50	Sunny	58.5	61.0	53.8	63.4	58.5 Measured ≤ Baseline
22-Sep-20	9:10	Sunny	53.1	55.0	48.6	63.4	53.1 Measured ≤ Baseline
28-Sep-20	13:10	Cloudy	54.8	56.8	51.4	63.4	54.8 Measured ≤ 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}
10-Sep-20	13:10	Sunny	67.3	72.0	60.1	58.0	66.8
16-Sep-20	11:10	Sunny	62.8	64.1	55.7	58.0	61.1
22-Sep-20	13:05	Sunny	63.2	68.8	56.5	58.0	61.6
28-Sep-20	15:15	Cloudy	69.7	70.9	57.9	58.0	69.4

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}
10-Sep-20	15:17	Sunny	63.9	65.4	60.7	63.4	54.3
16-Sep-20	10:30	Sunny	62.2	64.0	59.7	63.4	62.2 Measured ≤ Baseline
22-Sep-20	14:05	Sunny	62.0	63.4	58.0	63.4	62 Measured ≤ Baseline
28-Sep-20	14:00	Cloudy	68.9	71.5	61.1	63.4	67.5

Noise Levels



Title Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 Graphical Presentation of Construction Noise Monitoring Results	Date Sep 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		91	+++++
<i>Actitis hypoleucos</i>	Common Sandpiper	磯鵲	*	2	+
<i>Alcedo atthis</i>	Common Kingfisher	普通翠鳥	*	1	+
<i>Anthus hodgsoni</i>	Olive Backed Pipit	樹鵲		11	++
<i>Apus nipalensis</i>	House Swift	小白腰雨燕		2	
<i>Ardea alba</i>	Great Egret	大白鷺	*	35	+++
<i>Ardea cinerea</i>	Grey Heron	蒼鷺	*	11	++
<i>Ardeola bacchus</i>	Chinese Pond Heron	池鷺	*	59	+++++
<i>Bubulcus coromandus</i>	Eastern Cattle Egret	牛背鷺	*	41	++++
<i>Ceryle rudis</i>	Pied Kingfisher	斑魚狗	*	0	+
<i>Copsychus saularis</i>	Magpie Robin	鵲鴝		2	+
<i>Corvus macrorhynchos</i>	Jungle Crow	大嘴烏鴉		6	+
<i>Corvus torquatus</i>	Collared Crow	白頸鴉	*	2	+
<i>Egretta garzetta</i>	Little Egret	小白鷺	*	83	+++++
<i>Garrulax perspicillatus</i>	Masked Laughing Thrush	黑臉噪鵲		35	++++
<i>Halcyon smyrnensis</i>	White-throated Kingfisher	白胸翡翠	*	1	+
<i>Himantopus himantopus</i>	Black-winged Stilt	黑翅長腳鵲	*	67	+++++
<i>Hirundo rustica</i>	Barn Swallow	家燕		5	
<i>Lonchura punctulata</i>	Spotted Munia	斑文鳥		0	+++
<i>Lonchura striata</i>	White-rumped Munia	白腰文鳥		0	+
<i>Motacilla alba</i>	White Wagtail	白鵲鴝		16	++
<i>Muscicapa latirostris</i>	Asian Brown Flycatcher	北灰鵲		1	
<i>Myophonus caeruleus</i>	Blue Whistling Thrush	紫嘯鵲		1	
<i>Nycticorax nycticorax</i>	Black-crowned Night Heron	夜鷺	*	2	+
<i>Orthotomus sutorius</i>	Common Tailorbird	長尾縫葉鷺		4	++
<i>Passer montanus</i>	Eurasian Tree Sparrow	樹麻雀		2	+
<i>Phylloscopus fuscatus</i>	Dusky Warbler	褐柳鷺		0	+
<i>Pica pica</i>	Magpie	喜鵲		2	+
<i>Psittacula eupatria</i>	Alexandrine Parakeet	亞歷山大鸚鵡		2	
<i>Pycnonotus jocosus</i>	Crested bulbul	紅耳鸚		8	++++
<i>Pycnonotus sinensis</i>	Chinese Bulbul	白頭鸚		2	+++
<i>Streptopelia chinensis</i>	Spotted Dove	珠頸斑鳩		35	+++
<i>Sturnus nigricollis</i>	Black-necked Starling	黑領椋鳥		24	+++++
<i>Tringa ochropus</i>	Green Sandpiper	白腰草鷺	*	1	+
<i>Urocissa erythrorhyncha</i>	Red-billed Blue Magpie	紅咀藍鵲		0	+
<i>Zosterops japonicus</i>	Japanese White-eye	暗綠繡眼鳥		2	++
Total Point Count Abundance				556	
Total Waterbirds				305	

*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	
Monthly Data Analysis for Ecological Monitoring		Date September 2020	

MA19019 - Waterbird Ecological Monitoring Result

Monitoring Month Sep
 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 Sep 2020	11:00	High	22	96	10
		16:00	Low	74		8
#2	8 Sep 2020	12:00	High	31	113	9
		8:00	Low	82		12
#3	15 Sep 2020	10:00	High	29	79	9
		14:30	Low	50		12
#4	22 Sep 2020	12:00	High	41	138	8
		8:00	Low	97		16
#5	28 Sep 2020	10:00	High	37	130	11
		14:30	Low	93		16
Overall Total					556	

Table III: Total Waterbird Abundance from Point Count						
Survey Information				Numbers of Waterbirds		
No.	Date	Time	Tide Level	Individuals Recorded	Total	
#1	3 Sep 2020	11:00	High	13	79	
		16:00	Low	66		
#2	8 Sep 2020	12:00	High	8	38	
		8:00	Low	30		
#3	15 Sep 2020	10:00	High	15	59	
		14:30	Low	44		
#4	22 Sep 2020	12:00	High	11	59	
		8:00	Low	48		
#5	28 Sep 2020	10:00	High	14	70	
		14:30	Low	56		
Overall Total					305	
Average					61	

Table IV: T-Test Analysis for All Waterbirds

Baseline Data
 Monthly Average Abundance (Sep) 43.75
 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)

T-values of Data in Reporting Month		Confidence Level		
		95%	99%	
Abundance	Monthly	2.304	✓	✓
	Season	2.247	✓	✓
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		Project No. MA19019	CINOTECH
Shek Wu Hui Effluent Polishing Plant - Main Work Stage 1			
Monthly Data Analysis for Ecological Monitoring	Date September 2020	Appendix I	

MA19019 - Waterbird Ecological Monitoring Result

Monitoring Month Sep
Season Summer

Representative Species			Recorded Abundance							Baseline Data	
Species Name	Common Name	Chinese Name	3 Sep 2020	8 Sep 2020	15 Sep 2020	22 Sep 2020	28 Sep 2020	Total	Average	Avg (Sep)	Avg (Summer)
<i>Egretta garzetta</i>	Little Egret	小白鷺	16	11	24	16	16	83	17	16	20
<i>Ardea cinerea</i>	Grey Heron	蒼鷺	0	0	3	2	6	11	2	5	1
<i>Ardeola bacchus</i>	Chinese Pond Heron	池鷺	7	10	19	15	8	59	12	14	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	4	8	3	7	13	35	7	5	3
<i>Bubulcus coromandus</i>	Eastern Cattle Egret	牛背鷺	12	1	7	7	14	41	8	0	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 compared to the baseline monitoring data.

H₁ The data collected does not fall within the normal distribution when compared 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	0.527	✓	✓	-1.628	✓	✓	✓
<i>Ardea cinerea</i> *	Grey Heron*	蒼鷺*				N/A*			
<i>Ardeola bacchus</i>	Chinese Pond Heron	池鷺	-0.750	✓	✓	-1.751	✓	✓	✓
<i>Phalacrocorax carbo</i> *	Great Cormorant*	普通鸕鶿*				N/A*			
<i>Ardea alba</i>	Great Egret	大白鷺	1.136	✓	✓	2.534	✓	✓	✓
<i>Bubulcus coromandus</i>	Eastern Cattle Egret	牛背鷺	3.507	✓	✓	2.192	✓	✓	✓

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 Shek Wu Hui Effluent Polishing Plant - Main Work Stage 1		Project No. MA19019	CINOTECH
Monthly Data Analysis for Ecological Monitoring		Date September 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 22 Sep 20)








Ng Tung River (Taken on 15 Sep 20)



Shek Sheung River (Taken on 8 Sep 20)

Part B – Waterbird Species

 <p>A photograph of a sandpiper (Actitis hypoleucos) standing on a sandy or gravelly shore. The bird has a brown back and wings, a white breast, and a long, straight bill. It is facing right. The background consists of tall green grasses.</p>	 <p>A photograph of a grey heron (Ardea cinerea) in flight over a body of water. The bird's wings are fully extended, showing a dark grey upper surface and a lighter underside. The water is a calm, brownish-green color.</p>
<p><i>Actitis hypoleucos</i> (Taken on 3 Sep 20)</p>	<p><i>Ardea cinerea</i> (Taken on 8 Sep 20)</p>
 <p>A photograph of a green heron (Ardeola bacchus) standing on a muddy bank next to a body of water. The bird has a brown back with white streaks, a long neck, and a long, straight bill. It is facing left.</p>	 <p>A photograph of a white egret (Bubulcus coromandus) standing in a field of tall green grass. The bird is facing left. In the background, the lower legs and hooves of a brown cow are visible.</p>
<p><i>Ardeola bacchus</i> (Taken on 8 Sep 20)</p>	<p><i>Bubulcus coromandus</i> (Taken on 3 Sep 20)</p>
 <p>A photograph of a black crow (Corvus torquatus) standing on a log or branch in a field of green grass. The bird has a black body with a white patch on its neck. It is facing left.</p>	 <p>A photograph of a white egret (Egretta garzetta) standing in a shallow body of water. The bird is facing left. The background is filled with green reeds and other aquatic plants.</p>
<p><i>Corvus torquatus</i> (Taken on 15 Sep 20)</p>	<p><i>Egretta garzetta</i> (Taken on 3 Sep 20)</p>



Halcyon smyrnensis (Taken on 28 Sep 20)



Himantopus himantopus (Taken on 3 Sep 20)



Nycticorax nycticorax (Taken on 15 Sep 20)



Muscicapa latirostris (Taken on 22 Sep 20)

Part C – Human Activities & Site Conditions



Oil stain (Non project related, taken on 28 Sep 20)



Remote Boating (Taken on 28 Sep 20)



Excavation & breaking (Taken on 8 Sep 20)



Sheet Piling (Taken on 28 Sep 20)

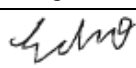

**APPENDIX K
SITE AUDIT SUMMARY**

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	200901
Date	1 September 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.: 200825).	

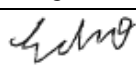

	Name	Signature	Date
Recorded by	Ms. Echo Hung		1 September 2020
Checked by	Mr. Eric Yan		2 September 2020

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	200910
Date	10 September 2020 (Thursday)
Time	13:30 – 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 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.: 200901).	

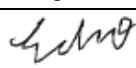

	Name	Signature	Date
Recorded by	Ms. Echo Hung		10 September 2020
Checked by	Mr. Eric Yan		11 September 2020

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	200916
Date	16 September 2020 (Wednesday)
Time	13:45 – 15:00

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.: 200910).	

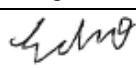

	Name	Signature	Date
Recorded by	Ms. Echo Hung		16 September 2020
Checked by	Mr. Eric Yan		17 September 2020

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	200922
Date	22 September 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.: 200916).	

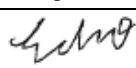

	Name	Signature	Date
Recorded by	Ms. Echo Hung		22 September 2020
Checked by	Mr. Eric Yan		23 September 2020

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	200929
Date	29 September 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.: 200922).	

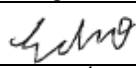

	Name	Signature	Date
Recorded by	Ms. Echo Hung		29 September 2020
Checked by	Mr. Eric Yan		30 September 2020

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	200901
Date	1 September 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.: 200825).	

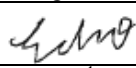

	Name	Signature	Date
Recorded by	Ms. Echo Hung		1 September 2020
Checked by	Mr. Eric Yan		2 September 2020

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	200910
Date	10 September 2020 (Thursday)
Time	13:30 – 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 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.: 200901).	

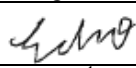

	Name	Signature	Date
Recorded by	Ms. Echo Hung		10 September 2020
Checked by	Mr. Eric Yan		11 September 2020

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	200916
Date	16 September 2020 (Wednesday)
Time	13:45 – 15:00

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.: 200910).	

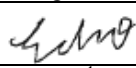

	Name	Signature	Date
Recorded by	Ms. Echo Hung		16 September 2020
Checked by	Mr. Eric Yan		17 September 2020

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	200922
Date	22 September 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.: 200916).	

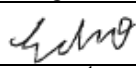

	Name	Signature	Date
Recorded by	Ms. Echo Hung		22 September 2020
Checked by	Mr. Eric Yan		23 September 2020

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	200929
Date	29 September 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.: 200922).	

	Name	Signature	Date
Recorded by	Ms. Echo Hung		29 September 2020
Checked by	Mr. Eric Yan		30 September 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	2.587	0.000	0.000	0.140	2.408	0.000	0.000	0.000	0.016	0.000	0.022
Sep	3.346	0.000	0.000	0.046	3.283	0.000	0.000	0.000	0.000	0.000	0.018
Oct											
Nov											
Dec											
Total	18.331	0.000	0.000	1.376	16.898	0.000	0.000	0.000	0.016	0.060	0.552

- 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	31.23	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	151.78	0.000	0.000	0.000	0.009
Sub-total	0.862	0.000	0.000	0.000	0.862	0.000	202.72	0.000	0.000	0.000	0.028
Jul	0.180	0.000	0.000	0.056	0.124	0.076	92.86	0.000	0.000	9.600	0.006
Aug	0.847	0.000	0.000	0.000	0.847	0.104	115.29	0.000	0.016	0.000	0.010
Sep	0.455	0.000	0.000	0.000	0.455	0.000	0.000	0.000	0.000	0.000	0.009
Oct											
Nov											
Dec											
Total	2.344	0.000	0.000	0.056	2.288	0.180	410.87	0.000	0.016	9.600	0.054

- 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/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:

- (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

Name of Department: ArchSD/CEDD/DSD/EMSD/HyD/WSD

Contract No.: DE/2018/03

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 (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)
Jan	0	0	0	0	0	0	0	0	0	0	0
Feb	0	0	0	0	0	0	0	0	0	0	0
Mar	0	0	0	0	0	0	0	0	0	0	0
Apr	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	12.46 T
June	0	0	0	0	0	0	0	0	0	0	51.46 T
Sub-total	0	0	0	0	0	0	0	0	0	0	63.92 T
July	0	0	0	0	0	0	0	0	0	0	0
Aug	92.45 T	0	0	0	92.45 T	0	0	0	0	0	0
Sept	0	0	0	0	0	0	0	0	0	0	0
Oct											
Nov											
Dec											
Total	92.45 T	0	0	0	92.45 T	0	0	0	0	0	63.92 T

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)

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	^ ^ ^ ^ ^ ^ ^

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 banded. 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	<p>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.</p> <p>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</p>	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	<p>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.</p> <p>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.</p>	Minimize the impact to the landscape and visual	Contractor	Work Sites	Prior to construction and construction phase		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 referred to.</p>	<p>Transplant Trees where suitable for transplantation</p>	<p>Designer / Contractor</p>	<p>Work Sites where possible. Otherwise consider offsite locations</p>	<p>Prior to construction, construction phase and operation phase</p>	<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>	<p>N/A</p>
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> <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>	<p>To avoid substantial slope cutting and fill slopes.</p> <p>To prevent erosion and subsequent loss of landscape resources and character.</p> <p>To ensure man-made slopes are as visually amenable as possible.</p>	<p>Designer / Contractor</p>	<p>Work Sites</p>	<p>Prior to construction, construction phase and operation phase</p>	<p>GEO Publication (1999) - Use of Vegetation as Surface Protection on Slope; GEO Publication No. 1/2011-Technical Guidelines on Landscape Treatment for Slopes</p>	<p>N/A</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
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>Rhodymyrtus tomentosa</i> , <i>Rhaphiolepis 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/Urbis 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/rectified by the contractor;
#	Recommendation was made during site audit but not yet improved/rectified 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**

**Agreement No. SPW 07/2019
 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: September 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: September 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	Time Risk Allowance	Gantt Chart (Q2 2020 to Q2 2025)																			
1		Contract Dates	1957 day	Mon 16/9/19	Thu 23/1/25	Mon 16/9/19	NA	0 days			35%		16/9 - 23/1																			
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+181 days,6,7,8,9,11,12,10	100%		16/9 - 16/9																			
3		Access Date (cal. day)	180 days	Mon 16/9/19	Sat 14/3/20	Mon 16/9/19	Sat 14/3/20	0 days			100%		16/9 - 14/3																			
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%		16/9 - 16/9																			
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+181 days		100%		16/9 - 16/9																			
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%		16/9 - 16/9																			
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%		16/9 - 16/9																			
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%		16/9 - 16/9																			
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%		16/9 - 16/9																			
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%		16/9 - 16/9																			
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%		16/9 - 16/9																			
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%		16/9 - 16/9																			
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%		16/9 - 16/9																			
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%		16/9 - 16/9																			
15		Portion C-6	0 days	Sat 14/3/20	Sat 14/3/20	Sat 14/3/20	Sat 14/3/20	0 days	2FS+181 days	376,351	100%		16/9 - 14/3																			
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%		16/9 - 16/9																			
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%		16/9 - 16/9																			
18		Key Date (cal. day)	848.2 day	Tue 17/9/19	Wed 12/1/22	Tue 17/9/19	NA	0 days			44%		17/9 - 12/1																			
19		KD1A (525 days after starting date)	525 days	Tue 17/9/19	Thu 4/3/21	Tue 17/9/19	NA	0 days	2FS+1 day		59%		17/9 - 4/3																			
20		KD2A (660 days after starting date)	660 days	Tue 17/9/19	Fri 16/7/21	Tue 17/9/19	NA	0 days	2FS+1 day		47%		17/9 - 16/7																			
21		KD3A (760 days after starting date)	760 days	Tue 17/9/19	Sat 23/10/21	Tue 17/9/19	NA	0 days	2FS+1 day		41%		17/9 - 23/10																			
22		KD3B (750 days after starting date)	750 days	Tue 17/9/19	Sun 17/10/21	Tue 17/9/19	NA	0 days	2FS+1 day		41%		17/9 - 17/10																			
23		KD3C (750 days after starting date)	750 days	Tue 17/9/19	Sun 17/10/21	Tue 17/9/19	NA	0 days	2FS+1 day		41%		17/9 - 17/10																			
24		KD3D (660 days after starting date)	660 days	Tue 17/9/19	Fri 16/7/21	Tue 17/9/19	NA	0 days	2FS+1 day		47%		17/9 - 16/7																			
25		KD3E (840 days after starting date)	840 days	Tue 17/9/19	Wed 12/1/22	Tue 17/9/19	NA	0 days	2FS+1 day		37%		17/9 - 12/1																			
26		Completion Date (cal. day)	1956 day	Tue 17/9/19	Thu 23/1/25	Tue 17/9/19	NA	0 days			29%		17/9 - 23/1																			
27		Section 1 of Works (675 days after starting date)	675 days	Tue 17/9/19	Thu 22/7/21	Tue 17/9/19	NA	0 days	2FS+1 day		82%		17/9 - 22/7																			
28		Section 2 of Works (1,295 days after starting date)	1295 days	Tue 17/9/19	Mon 3/4/23	Tue 17/9/19	NA	0 days	2FS+1 day		25%		17/9 - 3/4																			
29		Section 3 of Works (1,120 days after starting date)	1120 days	Tue 17/9/19	Sun 16/10/22	Tue 17/9/19	NA	0 days	2FS+1 day		28%		17/9 - 16/10																			
30		Section 4 of Works (900 days after starting date)	900 days	Tue 17/9/19	Tue 8/3/22	Tue 17/9/19	NA	0 days	2FS+1 day		35%		17/9 - 8/3																			
31		Section 5 of Works (1,590 days after starting date)	1590 days	Tue 17/9/19	Wed 24/1/24	Tue 17/9/19	NA	0 days	2FS+1 day	32,33,57	20%		17/9 - 24/1																			
32		Defect Liability Period	365 days	Thu 25/1/24	Thu 23/1/25	Thu 25/1/24	NA	0 days	31,48FF		0%		17/9 - 23/1																			
33		Soft Landscape Establishment Works	365 days	Thu 25/1/24	Thu 23/1/25	Thu 25/1/24	NA	0 days	31,49FF		0%		17/9 - 23/1																			
34	*	Planned Completion - Key Date (cal. day)	312 days	Mon 22/2/21	Fri 31/12/21	NA	NA	0 days			0%		22/2 - 31/12																			
35		KD1A (525 days after starting date)	0 days	Mon 22/2/21	Mon 22/2/21	NA	NA	0 days	184FF,182FF,403,404,154		0%		22/2 - 22/2																			
36		KD2A (660 days after starting date)	0 days	Wed 7/7/21	Wed 7/7/21	NA	NA	-98 days	448FF,449FF,446FF,444FF,443		0%		22/2 - 7/7																			
37		KD3A (760 days after starting date)	0 days	Mon 4/10/21	Mon 4/10/21	NA	NA	11 days	207FF,208FF		0%		22/2 - 4/10																			
38		KD3B (750 days after starting date)	0 days	Thu 23/9/21	Thu 23/9/21	NA	NA	12 days	227FF,228FF		0%		22/2 - 23/9																			
39		KD3C (750 days after starting date)	0 days	Thu 29/7/21	Thu 29/7/21	NA	NA	68 days	240FF,241FF		0%		22/2 - 29/7																			
40		KD3D (660 days after starting date)	0 days	Wed 7/7/21	Wed 7/7/21	NA	NA	0 days	268FF,269FF		0%		22/2 - 7/7																			
41		KD3E (840 days after starting date)	0 days	Fri 31/12/21	Fri 31/12/21	NA	NA	0 days	288FF,282FF,326FF,331FF,340		0%		22/2 - 31/12																			
42	*	Planned Completion - Section of the Works (cal. day)	1281 day	Thu 22/7/21	Thu 23/1/25	NA	NA	0 days			0%		22/7 - 23/1																			
43	SW1	Section 1 of Works (675 days after starting date)	0 days	Thu 22/7/21	Thu 22/7/21	NA	NA	-56 days	186FF,372FF,185FF		0%		22/7 - 22/7																			
44	SW2	Section 2 of Works (1,295 days after starting date)	0 days	Mon 3/4/23	Mon 3/4/23	NA	NA	0 days	451FF,465FF,452FF,454FF,464		0%		22/7 - 3/4																			
45	SW3	Section 3 of Works (1,120 days after starting date)	0 days	Sat 26/2/22	Sat 26/2/22	NA	NA	226 days	242FF,243FF,270FF,271FF,21,419		0%		22/7 - 26/2																			
46	SW4	Section 4 of Works (900 days after starting date)	0 days	Fri 4/3/22	Fri 4/3/22	NA	NA	0 days	307FF,312FF,409FF,406FF,401,419		0%		22/7 - 4/3																			
47	SW5	Section 5 of Works (1,590 days after starting date)	0 days	Tue 23/1/24	Tue 23/1/24	NA	NA	-1 day	414FF,412FF,413FF,415FF,414,48FS+1 day		0%		22/7 - 23/1																			
48		Defect Liability Period	365 days	Thu 25/1/24	Thu 23/1/25	NA	NA	-1 day	47FS+1 day	32FF	0%		22/7 - 23/1																			
49		Soft Landscape Establishment Works	365 days	Wed 24/1/24	Wed 22/1/25	NA	NA	1 day	420FF	33FF	0%		22/7 - 22/1																			
50		Effects from Inclement Weather and Other Time Affected Events	39 days	Thu 25/1/24	Wed 13/3/24	NA	NA	0 days			0%		25/1 - 13/3																			
51		Inclement Weather	19 days	Wed 21/2/24	Wed 13/3/24	NA	NA	0 days			0%		21/2 - 13/3																			
52		Delay and Disruption of Works for the month of February and March 2020 (NCE no. 0018A)	1 day	Wed 21/2/24	Wed 21/2/24	NA	NA	0 days	58	53	0%		21/2 - 21/2																			
53		Delay and Disruption of Works for the month of April 2020 (NCE no. 0025)	3 days	Thu 22/2/24	Sat 24/2/24	NA	NA	0 days	52	54	0%		22/2 - 24/2																			
54		Delay and Disruption of Works for the month of May 2020 (NCE no. 0027)	7 days	Sun 25/2/24	Sat 2/3/24	NA	NA	0 days	53	55	0%		25/2 - 2/3																			
55		Delay and Disruption of Works for the month of June 2020 (NCE no. 0032)	11 days	Sun 3/3/24	Wed 13/3/24	NA	NA	0 days	54		0%		3/3 - 13/3																			
56		Other Time Affected Events	20 days	Thu 25/1/24	Tue 20/2/24	NA	NA	0 days			0%		25/1 - 20/2																			
57		Unforeseen Social Activities in Hong Kong in November 2019 (NCE no. 0002)	6 days	Thu 25/1/24	Wed 31/1/24	NA	NA	0 days	31	58	0%		25/1 - 31/1																			
58		Disruption from Coronavirus Outbreak in February 2020 (NCE no. 0022)	14 days	Thu 1/2/24	Tue 20/2/24	NA	NA	0 days	57	52	0%		1/2 - 20/2																			
59		Submissions (cal. day)	1592 day	Mon 16/9/19	Wed 24/1/24	Mon 16/9/19	NA	-1 day			69%		16/9 - 24/1																			
60		Subletting Package	1418 day	Mon 16/9/19	Thu 3/8/23	Mon 16/9/19	NA	173 days			67%		16/9 - 3/8																			
61		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	62	100%		16/9 - 16/9																			
62		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	61	64,66,63,65,73,79,74,69,78,77	100%		16/9 - 7/10																			
63		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	62		100%		7/10 - 6/11																			
64		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	62	369	100%		8/10 - 20/11																			
65		Subletting for the Temporary Site accommodation	114 days	Tue 22/10/19	Wed 12/2/20	Tue 22/10/19	Wed 12/2/20	0 days	62	154	100%		22/10 - 12/2																			
66		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	62	67SS+15 days,68SS+15 days,21	100%		12/10 - 29/11																			
67		Subletting for Pre-bored Socketed Steel H-Pile	13.98 day	Fri 13/12/19	Fri 3/1/20	Fri 13/12/19	Fri 3/1/20	0 days	66SS+15 days	431,196,220,237,250,262,279,16	100%		13/12 - 3/1																			
68		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	66SS+15 days	71,70,84,76	100%		25/10 - 27/11																			
69		Subletting for Independent Checking Engineer	27 days	Wed 30/10/19	Mon 25/11/19	Wed 30/10/19	Mon 25/11/19	0 days	62	171,199,206,222,239,253,264,43	100%		30/10 - 25/11																			
70		Subletting for Sheetpile and ELS Works	58 days	Wed 8/1/20	Fri 20/3/20	Wed 8/1/20	Fri 20/3/20	0 days	68	171,199,206,222,239,253,264,28	100%		8/1 - 20/3																			
71		Subletting for R.C Works	60 days	Mon 1/6/20	Thu 30/7/20	NA	NA	7 days	68	172,223,240,254,437,311,287,29	0%		1/6 - 30/7																			
72		Subletting for Waterproofing	60 days	Mon 6/7/20	Thu 3/9/20	NA	NA	42 days	2	175,178,181,200,255,294	0%		6/7 - 3/9																			
73		Subletting for ABWF & BS Works	60 days	Mon 4/1/21	Thu 4/3/21	NA	NA	27 days	62	186,211,230,243,255,271,289,29	0%		4/1 - 4/3																			
74		Subletting for External Works including pipeworks and road works for UV System no.1 (Diversion)	12 days	Thu 20/2/20	Mon 2/3/20	Thu 20/2/20	Mon 2/3/20	0 days	62	369,75,402	100%		20/2 - 2/3																			

ID	KD	Task Name	Duration	Start	Finish	Actual Start	Actual Finish	Total Slack	Predecessors	Successors	% Complete	Time Risk Allowance	Gantt Chart (Q2 2020 to Q2 2025)																							
75		Subletting for Drainage and Pipe works at UV System no.1	22 days	Wed 15/4/20	Wed 6/5/20	Wed 15/4/20	Wed 6/5/20	0 days	74	372	100%		[Gantt Chart Data]																							
76		Subletting for Pipeworks, Utilities, and Roadworks	22 days	Wed 15/4/20	Wed 6/5/20	Wed 15/4/20	Wed 6/5/20	0 days	68	409,406,407,408,405	100%		[Gantt Chart Data]																							
77		Subletting for trenchless construction	7 days	Wed 22/4/20	Tue 28/4/20	Wed 22/4/20	Tue 28/4/20	0 days	62	376	100%		[Gantt Chart Data]																							
78		Subletting for Traffic Management Consultant	43 days	Thu 9/1/20	Thu 20/2/20	Thu 9/1/20	Thu 20/2/20	0 days	62	91,92	100%		[Gantt Chart Data]																							
79		Subletting for Hard Landscape and Soft Landscape	60 days	Mon 5/6/23	Thu 3/8/23	NA	NA	173 days	62	420	0%		[Gantt Chart Data]																							
80		Statutory Submission, Submission & Approval	1592 day	Mon 16/9/19	Wed 24/1/24	Mon 16/9/19	NA	-2 days			62%		[Gantt Chart Data]																							
81		Prepare and Submit Subcontractor Management Plan (SMP)	1 day	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2	192	100%		[Gantt Chart Data]																							
82		Prepare and Submit Interface Management Plan	60 days	Mon 16/9/19	Thu 6/8/20	Mon 16/9/19	NA	0 days	2	192	90%		[Gantt Chart Data]																							
83		Prepare, submit & approve the layout plan of the Temporary Site accommodation	51 days	Fri 20/9/19	Thu 6/8/20	Fri 20/9/19	NA	132.9 days	2	154	90%		[Gantt Chart Data]																							
84		Prepare, submit & accept the ELS design for deep excavation	207 days	Thu 24/10/19	Sun 21/6/20	Thu 24/10/19	Sun 21/6/20	0 days	68	171,199,206,222,239,253,264,28	100%		[Gantt Chart Data]																							
85		Prepare, submit & accept the Method Statement for Drainage Diversion Works	57 days	Tue 21/4/20	Tue 16/6/20	Tue 21/4/20	Tue 16/6/20	0 days	2	86,369	100%		[Gantt Chart Data]																							
86		PM approve the Method Statement for Drainage Diversion Works	13 days	Wed 17/6/20	Mon 29/6/20	Wed 17/6/20	Mon 29/6/20	0 days	85	369	100%		[Gantt Chart Data]																							
87		TTA Management	654 days	Mon 16/9/19	Wed 30/6/21	Mon 16/9/19	NA	151 days		459	86%		[Gantt Chart Data]																							
88		Excavation Permit Application for San Wan Road (Portion A)	288 days	Wed 16/9/20	Wed 30/6/21	Wed 16/9/20	NA	151 days		455	99%		[Gantt Chart Data]																							
89		Excavation Permit Application for Chuk Wan Street (Portion C)	284 days	Mon 7/10/19	Thu 16/7/20	Mon 7/10/19	NA	0 days	2FS+21 days	92FS-45 days	80%		[Gantt Chart Data]																							
90		Prepare TTA Plan, submit & approve for footpath for Stage 1 - Drainage Diversion	67 days	Mon 16/9/19	Thu 21/11/19	Mon 16/9/19	Thu 21/11/19	0 days	2	369	100%		[Gantt Chart Data]																							
91		Prepare TTA Plan, submit & approve for carriageway at San Wan Road for CLP 13kV substation	45 days	Wed 15/7/20	Fri 28/8/20	Wed 15/7/20	NA	457 days	78	457	0%		[Gantt Chart Data]																							
92		Prepare TTA Plan, submit & approve for carriageway at Chuk Wan Street for trenchless works	45 days	Mon 1/6/20	Thu 16/7/20	Mon 1/6/20	Thu 16/7/20	0 days	89FS-45 days,78	375	100%		[Gantt Chart Data]																							
93		Environmental Aspect Submissions	332 days	Mon 16/9/19	Wed 12/8/20	Mon 16/9/19	NA	0 days	2		98%		[Gantt Chart Data]																							
94		Notification to EPD for Works Commencement	1 day	Wed 18/9/19	Wed 18/9/19	Wed 18/9/19	Wed 18/9/19	0 days	2	192	100%		[Gantt Chart Data]																							
95		Apply & approve for Registration as a Chemical Waste Producer	1 day	Wed 18/9/19	Wed 18/9/19	Wed 18/9/19	Wed 18/9/19	0 days	2	192	100%		[Gantt Chart Data]																							
96		Apply & approve for a Billing Account for Disposal of Construction Waste	1 day	Wed 18/9/19	Wed 18/9/19	Wed 18/9/19	Wed 18/9/19	0 days	2	192	100%		[Gantt Chart Data]																							
97		Apply & approve for Effluent Discharge Licence	21 days	Thu 9/1/20	Mon 3/8/20	Thu 9/1/20	NA	0 days	2	192	90%		[Gantt Chart Data]																							
98		Prepare & submit of Project Layout Plan & O-Chart for EP	1 day	Fri 20/9/19	Fri 20/9/19	Fri 20/9/19	Fri 20/9/19	0 days	2	192	100%		[Gantt Chart Data]																							
99		Prepare & submit Construction Noise Permits	121 days	Mon 16/9/19	Tue 14/1/20	Mon 16/9/19	Tue 14/1/20	0 days	2	100	100%		[Gantt Chart Data]																							
100		Approval of Construction Noise Permits	60 days	Tue 14/1/20	Wed 12/8/20	Tue 14/1/20	NA	0 days	99	192	80%		[Gantt Chart Data]																							
101		Prepare, submit Site Management Plan for Trip Ticket System	9 days	Mon 16/9/19	Tue 24/9/19	Mon 16/9/19	Tue 24/9/19	0 days	2	100	100%		[Gantt Chart Data]																							
102		Approval of Site Management Plan for Trip Ticket System	249 days	Tue 24/9/19	Fri 29/5/20	Tue 24/9/19	Fri 29/5/20	0 days	2	192	100%		[Gantt Chart Data]																							
103		Prepare & submit approve Waste Management Plan	9 days	Mon 16/9/19	Tue 24/9/19	Mon 16/9/19	Tue 24/9/19	0 days	2	104	100%		[Gantt Chart Data]																							
104		Approval of Waste Management Plan	119 days	Tue 24/9/19	Tue 21/1/20	Tue 24/9/19	Tue 21/1/20	0 days	103	192	100%		[Gantt Chart Data]																							
105		Prepare & submit Environmental Management Plan	15 days	Mon 16/9/19	Mon 30/9/19	Mon 16/9/19	Mon 30/9/19	0 days	2	106	100%		[Gantt Chart Data]																							
106		Approval of Environmental Management Plan	37 days	Mon 30/9/19	Wed 6/11/19	Mon 30/9/19	Wed 6/11/19	0 days	105	192	100%		[Gantt Chart Data]																							
107		Prepare & submit for Temporary Drainage and Management Plan	201 days	Mon 16/9/19	Fri 3/4/20	Mon 16/9/19	Fri 3/4/20	0 days	2	108	100%		[Gantt Chart Data]																							
108		Approval of Temporary Drainage and Management Plan	30 days	Fri 20/12/19	Mon 3/8/20	Fri 20/12/19	NA	0 days	107	369	90%		[Gantt Chart Data]																							
109		Prepare, submit & approve for the FSD submissions for CLP 132kV Substation	90 days	Sat 20/11/21	Thu 17/2/22	NA	NA	0 days			0%		[Gantt Chart Data]																							
110		Prepare and submit arrangement and schedule to FSD	30 days	Sat 20/11/21	Sun 19/12/21	NA	NA	0 days		111	0%		[Gantt Chart Data]																							
111		FSD approve the arrangement and schedule	60 days	Mon 20/12/21	Thu 17/2/22	NA	NA	0 days	110		0%		[Gantt Chart Data]																							
112		Trees Related Submissions	1592 day	Mon 16/9/19	Wed 24/1/24	Mon 16/9/19	NA	-2 days			36%		[Gantt Chart Data]																							
113		Initial Tree survey and report submission	194 days	Fri 4/10/19	Tue 14/4/20	Fri 4/10/19	Tue 14/4/20	0 days	2	151	100%		[Gantt Chart Data]																							
114		Prepare and submit and approve the Method Statement of Erection of the protective fencing	26 days	Mon 16/9/19	Fri 11/10/19	Mon 16/9/19	Fri 11/10/19	0 days	2	151	100%		[Gantt Chart Data]																							
115		Prepare and submit and approve the Method Statement of Tree felling, Preservation, Pruning works & Transplanting	74 days	Fri 11/10/19	Mon 23/12/19	Fri 11/10/19	Mon 23/12/19	0 days	2	151,191	100%		[Gantt Chart Data]																							
116		Submit Yearly Tree Risk Assessment and Inspection Report	1590 days	Mon 16/9/19	Wed 24/1/24	Mon 16/9/19	NA	-2 days	2	47FF	20%		[Gantt Chart Data]																							
117		Others	1138 day	Fri 20/9/19	Mon 31/10/22	Fri 20/9/19	NA	0 days			64%		[Gantt Chart Data]																							
118		Approval for Lighting Removal at Portion C-1A of the Site from Hyd	114 days	Thu 26/9/19	Fri 17/1/20	Thu 26/9/19	Fri 17/1/20	0 days	2	164	100%		[Gantt Chart Data]																							
119		Prepare, submit & approve for commencement of Works near MTRCL protection zone at Sun Wan Road from MTRCL	43 days	Fri 20/9/19	Fri 1/11/19	Fri 20/9/19	Fri 1/11/19	0 days	2	428	100%		[Gantt Chart Data]																							
120		Prepare, submit & approve for commencement Works along the riverbank by DSD	90 days	Wed 3/8/22	Mon 31/10/22	NA	NA	0 days		415,416,418,417FS+124 days	0%		[Gantt Chart Data]																							
121		Procurement	548 days	Mon 16/9/19	Tue 16/3/21	Mon 16/9/19	NA	15 days			89%		[Gantt Chart Data]																							
122		Prepare and submit the Procurement Procedure	34 days	Mon 16/9/19	Sat 19/10/19	Mon 16/9/19	Sat 19/10/19	0 days	2	123	100%		[Gantt Chart Data]																							
123		PM Review & Accept Procurement Procedure	0 days	Sat 19/10/19	Sat 19/10/19	Sat 19/10/19	Sat 19/10/19	0 days	122	124,141,145,146,147,148,152	100%		[Gantt Chart Data]																							
124		Pipe works material	408 days	Fri 8/11/19	Sat 19/12/20	Fri 8/11/19	NA	9 days	123		89%		[Gantt Chart Data]																							
125		Prepare & submit concrete pipe material particular	199 days	Tue 12/11/19	Thu 28/5/20	Tue 12/11/19	Thu 28/5/20	0 days	2	126	100%		[Gantt Chart Data]																							
126		Approval of concrete pipe material	205 days	Thu 28/5/20	Sat 19/12/20	Thu 28/5/20	Sat 19/12/20	0 days	125	127	100%		[Gantt Chart Data]																							
127		Procurement, deliver & testing of concrete pipe material (1st batch)	0 days	Fri 8/11/19	Mon 25/11/19	Fri 8/11/19	Mon 25/11/19	0 days	126	368,369	100%		[Gantt Chart Data]																							
128		Procurement, deliver & testing of concrete pipe material (remaining)	90 days	Mon 16/12/19	Tue 18/8/20	Mon 16/12/19	NA	131 days		406	80%		[Gantt Chart Data]																							
129		Prepare & submit ductile iron pipe material particular	90 days	Thu 19/12/19	Tue 17/3/20	Thu 19/12/19	Tue 17/3/20	0 days	2	130	100%		[Gantt Chart Data]																							
130		Approval of ductile iron pipe material	28 days	Tue 17/3/20	Tue 14/4/20	Tue 17/3/20	Tue 14/4/20	0 days	129	131	100%		[Gantt Chart Data]																							
131		Procurement, deliver & testing of ductile iron pipe material	0 days	Wed 18/12/19	Tue 21/1/20	Wed 18/12/19	Tue 21/1/20	0 days	130	408	100%		[Gantt Chart Data]																							
132		Prepare & submit HDPE pipe material particular	127 days	Tue 21/1/20	Tue 26/5/20	Tue 21/1/20	Tue 26/5/20	0 days	2FS+120 days	133	100%		[Gantt Chart Data]																							
133		Approval of HDPE pipe material	21 days	Tue 26/5/20	Tue 16/6/20	Tue 26/5/20	Tue 16/6/20	0 days	132	134	100%		[Gantt Chart Data]																							
134		Procurement, deliver & testing of HDPE pipe material	0 days	Fri 8/5/20	Mon 8/6/20	Fri 8/5/20	Mon 8/6/20	0 days	133	407,408	100%		[Gantt Chart Data]																							
135		Prepare & submit stainless steel pipe material particular	8 days	Fri 1/5/20	Fri 8/5/20	Fri 1/5/20	Fri 8/5/20	0 days	2	136	100%		[Gantt Chart Data]																							
136		Approval of stainless steel pipe material	21 days	Sat 9/5/20	Wed 5/8/20	Sat 9/5/20	NA	55.8 days	135	137	80%		[Gantt Chart Data]																							
137		Procurement, deliver & testing of stainless steel pipe material	90 days	Wed 5/8/20	Tue 3/11/20	NA	NA	55.8 days	136	405	0%		[Gantt Chart Data]																							
138		Prepare & submit mild steel pipe material particular	1 day	Thu 19/12/19	Thu 19/12/19	Thu 19/12/19	Thu 19/12/19	0 days	2	139	100%		[Gantt Chart Data]																							
139		Approval of mild steel pipe material	30 days	Thu 19/12/19	Sat 18/1/20	Thu 19/12/19	Sat 18/1/20	0 days	138	140	100%		[Gantt Chart Data]																							
140		Procurement, deliver & testing of mild steel pipe material	133 days	Mon 9/12/19	Sat 30/5/20	Mon 9/12/19	Sat 30/5/20	0 days	139	405	100%		[Gantt Chart Data]																							

ID	KD	Task Name	Duration	Start	Finish	Actual Start	Actual Finish	Total Slack	Predecessors	Successors	% Complete	Time Risk Allowance	Gantt Chart (Q2 2020 to Q2 2025)																			
213	*	Sludge Dewatering Building	774 days	Tue 26/11/19	Sun 10/7/22	Tue 26/11/19	NA	458 days			30%		26/11 10/7																			
214		Site Clearance & Site Set Up	6 days	Tue 26/11/19	Mon 2/12/19	Tue 26/11/19	Mon 2/12/19	0 days	2	215	100%		26/11 2/12																			
215		Predrilling Works (39no.4rig, 3days/drillhole/rig)(additional length NCE no.10)	20 days	Thu 28/11/19	Fri 20/12/19	Thu 28/11/19	Fri 20/12/19	0 days	66,214	217	100%		28/11 20/12																			
216		Additional Predrilling Works (11no.)	8 days	Mon 23/12/19	Mon 30/12/19	Mon 23/12/19	Mon 30/12/19	0 days			100%		23/12 30/12																			
217		Installation of Monitoring Points	6 days	Fri 3/1/20	Thu 9/1/20	Fri 3/1/20	Thu 9/1/20	0 days	215	218	100%		3/1 9/1																			
218		Sheet Pile Installation (NCE no. 10, 14, 24)	205 days	Wed 15/1/20	Tue 22/9/20	Wed 15/1/20	NA	0 days	217	351,219SS+15 days,222FS+5 da	80%		15/1 22/9																			
219		Setting up plant for pre-bored socked H-pile Installation	5 days	Sat 7/3/20	Thu 12/3/20	Sat 7/3/20	Thu 12/3/20	0 days	218SS+15 days	220,349SS-14 days	100%		7/3 12/3																			
220		Pre-bored Socketed H-Pile Installation (202 Nos, 4 Rig, 3days/rig/pile)	67 days	Fri 13/3/20	Fri 5/6/20	Fri 13/3/20	Fri 5/6/20	0 days	67,219	249,221	100%	6	13/3 5/6																			
221		Pile Loading Test	20 days	Tue 30/6/20	Thu 23/7/20	Tue 30/6/20	Thu 23/7/20	0 days	220	222,238FS+5 days	100%		30/6 23/7																			
222		ELS Works (incl. Strut (3-layers) Installation & Excavation (25,000 cu.m))	60 days	Tue 29/9/20	Thu 10/12/20	NA	NA	9 days	84,70,221,69,218FS+5 days	223,224,405,406,407,409,408	0%	10	29/9 10/12																			
223		R.C. Structure	232 days	Fri 11/12/20	Thu 23/9/21	NA	NA	9 days	145,146,147,71,222,144	230,229	0%	10	11/12 23/9																			
224		Basement Consturction & waterproofing works	70 days	Fri 11/12/20	Tue 9/3/21	NA	NA	9 days	222	225	0%		11/12 9/3																			
225		Ground Floor Construction @ +7.55mpD	65 days	Wed 10/3/21	NA	NA	NA	9 days	224	226	0%		10/3 29/5																			
226		1/F Construction @ +15.3m mPD	65 days	Mon 31/5/21	Mon 16/8/21	NA	NA	9 days	225	227	0%		31/5 16/8																			
227	KD3B	Roof Construction @ +25.65mPD	32 days	Tue 17/8/21	Thu 23/9/21	NA	NA	9 days	226	38FF,329FS-7 days,228	0%		17/8 23/9																			
228	KD3B	Allow access to Contarctor DE/2018/03 for E&M Installation	0 days	Thu 23/9/21	Thu 23/9/21	NA	NA	9 days	227	38FF	0%		23/9 23/9																			
229		Allow access to Contarctor DE/2018/03 for E&M Installation	90 days	Fri 24/9/21	Wed 12/1/22	NA	NA	218 days	223	45FF	0%		24/9 12/1																			
230	SW5	ABWF Works & BS Works	89 days	Fri 24/9/21	Tue 11/1/22	NA	NA	218 days	223,148,73	45FF,231	0%		24/9 11/1																			
231	SW5	Surrounding Site formation works and road works	180 days	Wed 12/1/22	Sun 10/7/22	NA	NA	561 days	230	47FF	0%		12/1 10/7																			
232	*	Combined Heat Power Building	714 days	Tue 10/12/19	Thu 12/5/22	Tue 10/12/19	NA	506 days			5%		10/12 12/5																			
233		Site Clearance & Site Set Up	6 days	Tue 10/12/19	Mon 16/12/19	Tue 10/12/19	Mon 16/12/19	0 days	2,234SF		100%		10/12 16/12																			
234		Predrilling Works (15no. 2rig, 3days/drillhole/rig) (NCE no. 10)	15 days	Tue 10/12/19	Sat 28/12/19	Tue 10/12/19	Sat 28/12/19	0 days	66FS+28 days	235,233SF	100%		10/12 28/12																			
235		Installation of Monitoring Points	6 days	Fri 3/1/20	Thu 9/1/20	Fri 3/1/20	Thu 9/1/20	0 days	234	237	100%		3/1 9/1																			
236		Setting up plant for pre-bored socked H-pile Installation (NCE no. 10)	5 days	Tue 14/1/20	Tue 18/1/20	Tue 14/1/20	Tue 18/1/20	0 days	237	237	100%		14/1 18/1																			
237		Pre-bored Socketed H-Pile Installation (50 Nos, 2 Rig 3days/rig/pile)	0 days	Wed 15/1/20	Tue 21/4/20	Wed 15/1/20	Tue 21/4/20	0 days	67,235,236,431	238	100%	6	15/1 21/4																			
238		Pile Loading Test	4 days	Wed 29/7/20	Sat 1/8/20	Wed 29/7/20	Sat 1/8/20	0 days	237,221FS+5 days	239	100%		29/7 1/8																			
239		Excavation for Pile Cap (2,060 cu.m)	93 days	Mon 3/8/20	Sat 21/11/20	NA	NA	56 days	84,70,238,69	240	0%	10	3/8 21/11																			
240	KD3C	R.C. Structure	200 days	Mon 23/11/20	Wed 28/7/21	NA	NA	56 days	145,146,147,71,239,144	39FF,242,243,241,319	0%	10	23/11 28/7																			
241	KD3C	Allow access to Contarctor DE/2018/03 for E&M Installation	1 day	Thu 29/7/21	Thu 29/7/21	NA	NA	56 days	240	39FF	0%		29/7 29/7																			
242		Drainage System (within Bldg/ Structure) Installation	60 days	Thu 29/7/21	Fri 8/10/21	NA	NA	296 days	240	45FF	0%		29/7 8/10																			
243	SW3	ABWF Works & BS Works & Apply Internal Anti-corrosion Protective Lining	90 days	Thu 29/7/21	Sat 13/1/21	NA	NA	265 days	240,148,73	45FF,244	0%		29/7 13/1																			
244	SW5	Surrounding Site formation works and road works	180 days	Sun 14/1/21	Thu 12/5/22	NA	NA	620 days	243	47FF	0%		14/1 12/5																			
245	*	Sewage Pumping Station	746 days	Mon 2/12/19	Sun 12/6/22	Mon 2/12/19	NA	481 days			8%		2/12 12/6																			
246		Site Clearance & Site Set Up	6 days	Mon 25/5/20	Sat 30/5/20	Mon 25/5/20	Sat 30/5/20	0 days	2	247	100%		25/5 30/5																			
247		Predrilling Works (4no.1rig, 3days/drillhole/rig)	0 days	Mon 2/12/19	Mon 30/12/19	Mon 2/12/19	Mon 30/12/19	0 days	66FS+14 days,246	248	100%		2/12 30/12																			
248		Installation of Monitoring Points	4 days	Fri 21/2/20	Tue 25/2/20	Fri 21/2/20	Tue 25/2/20	0 days	247	247	100%		21/2 25/2																			
249		Setting up plant for pre-bored socked H-pile Installation	0 days	Thu 27/2/20	Tue 3/3/20	Thu 27/2/20	Tue 3/3/20	0 days	250	250	100%		27/2 3/3																			
250		Pre-bored Socketed H-Pile Installation (22 Nos, 1 Rig, 3days/rig/pile)	27 days	Mon 27/4/20	Fri 29/5/20	Mon 27/4/20	Fri 29/5/20	0 days	67,249	251	100%	6	27/4 29/5																			
251		Pile Loading Test	11 days	Sat 27/6/20	Fri 10/7/20	Sat 27/6/20	Fri 10/7/20	0 days	250,263FS+5 days	253,169FS+5 days,252	100%		27/6 10/7																			
252		Sheet Pile Installation	30 days	Thu 13/8/20	Wed 16/9/20	NA	NA	103 days	251,194FS-5 days	253	0%		13/8 16/9																			
253		ELS Works (incl. Strut (3-layers) Installation & Excavation (1,440 cu.m))	80 days	Thu 17/9/20	Tue 22/12/20	NA	NA	103 days	84,70,251,69,252	254	0%	10	17/9 22/12																			
254	KD3E	R.C. Structure & waterproofing works	200 days	Wed 23/12/20	Fri 27/8/21	NA	NA	103 days	145,146,147,71,282,253,144	41FF,255	0%	10	23/12 27/8																			
255	SW3	ABWF Works & BS Works & Apply Internal Anti-corrosion Protective Lining	90 days	Sat 28/8/21	Tue 14/12/21	NA	NA	239 days	148,73,254,72	45FF,256	0%		28/8 14/12																			
256	SW5	Surrounding Site formation works and road works	180 days	Wed 15/12/21	Sun 12/6/22	NA	NA	589 days	255	47FF	0%		15/12 12/6																			
257	*	Workshop No. 2	685 days	Tue 24/12/19	Wed 20/4/22	Tue 24/12/19	NA	523 days			14%		24/12 20/4																			
258		Site Clearance & Site Set Up	3 days	Tue 24/12/19	Sun 29/12/19	Tue 24/12/19	Sun 29/12/19	0 days	2	259	100%		24/12 29/12																			
259		Predrilling Works (10no.1rig, 3days/drillhole/rig) (NCE no. 10)	8 days	Thu 2/1/20	Fri 10/1/20	Thu 2/1/20	Fri 10/1/20	0 days	66,258	260	100%		2/1 10/1																			
260		Installation of Monitoring Points	4 days	Tue 25/2/20	Fri 28/2/20	Tue 25/2/20	Fri 28/2/20	0 days	259	262,261	100%		25/2 28/2																			
261		Setting up plant for pre-bored socked H-pile Installation	0 days	Tue 10/3/20	Tue 17/3/20	Tue 10/3/20	Tue 17/3/20	0 days	260,168	262	100%		10/3 17/3																			
262		Pre-bored Socketed H-Pile Installation (36 Nos, 2 Rig, 3days/rig/pile)	64 days	Wed 18/3/20	Sat 6/6/20	Wed 18/3/20	Sat 6/6/20	0 days	67,260,261	263,279	100%	6	18/3 6/6																			
263		Pile Loading Test	16 days	Sun 7/6/20	Fri 26/6/20	Sun 7/6/20	Fri 26/6/20	0 days	262,432FS+5 days	264,251FS+5 days	100%		7/6 26/6																			
264		Excavation for Pile Cap (1,800 cu.m)	20 days	Tue 25/8/20	Wed 16/9/20	NA	NA	0 days	84,70,263,69	266,405,406,407,409,408	0%		25/8 16/9																			
265		R.C. Structure	235 days	Thu 17/9/20	Tue 6/7/21	NA	NA	0 days	264,144	267	0%	10	17/9 6/7																			
266		Ground Floor Construction @ +6.30mpD	80 days	Thu 17/9/20	Tue 22/12/20	NA	NA	0 days	264,144	267	0%		17/9 22/12																			
267		First Floor Construction @ +13.50mpD	80 days	Wed 23/12/20	Thu 1/4/21	NA	NA	0 days	266	268	0%		23/12 1/4																			
268	KD3D	Roof Construction @+19.00mPD	75 days	Tue 6/4/21	Tue 6/7/21	NA	NA	0 days	267	270,271,40FF,269,285FS-36 day	0%		6/4 6/7																			
269	KD3D	Allow access to Contarctor DE/2018/03 for E&M Installation	1 day	Wed 7/7/21	Wed 7/7/21	NA	NA	0 days	268	40FF	0%		7/7 7/7																			
270		Drainage System (within Bldg/ Structure) Installation	60 days	Wed 7/7/21	Tue 14/9/21	NA	NA	315 days	268	45FF	0%		7/7 14/9																			
271	SW3	ABWF Works & BS Works & Apply Internal Anti-corrosion Protective Lining	90 days	Wed 7/7/21	Fri 22/10/21	NA	NA	284 days	148,73,268	45FF,272	0%		7/7 22/10																			
272	SW5	Surrounding Site formation works and road works	180 days	Sat 23/10/21	Wed 20/4/22	NA	NA	642 days	271	47FF	0%		23/10 20/4																			
273	*	Thermal Hydrolysis Pretreatment	404 days	Thu 19/12/19	Tue 4/5/21	Thu 19/12/19	NA	808 days			12%		19/12 4/5																			
274		Site Clearance & Site Set Up	18 days	Thu 19/12/19	Sun 12/1/20	Thu 19/12/19	Sun 12/1/20	0 days	2	275,276	100%		19/12 12/1																			
275		Predrilling Works (3no.1rig, 3days/drillhole/rig) (NCE no. 10)	1 day	Fri 10/1/20	Mon 13/1/20	Fri 10/1/20	Mon 13/1/20	0 days	66FS+24 days,274	277	100%		10/1 13/1																			
276		Additional Predrilling Works (4no.) (NCE no. 12)	1 day	Fri 10/1/20	Mon 13/1/20	Fri 10/1/20	Mon 13/1/20	0 days	274	277	100%		10/1 13/1																			
277		Installation of Monitoring Points	6 days	Fri 1/5/20	Fri 8/5/20	Fri 1/5/20	Fri 8/5/20	0 days	275,276	279	100%		1/5 8/5																			
278		Setting up plant for pre-bored socked H-pile Installation	5 days	Tue 12/5/20	Sat 16/5/20	Tue 12/5/20	Sat 16/5/20	0 days	279	279	100%		12/5 16/5																			
279		Pre-bored Socketed H-Pile Installation (15 Nos, 1 Rig, 3days/rig/pile)	0 days	Mon 18/5/20	Sat 20/6/20	Mon 18/5/20	Sat 20/6/20	0 days	67,277,278,262	280	100%	6	18/5 20/6																			
280		Pile Loading Test	25 days	Mon 27/7/20	Mon 24/8/20	Mon 27/7/20	NA	143 days	279,169FS+5 days	281,197SS+10 days	20%		27/7 24/8																			
281		Excavation for Pile Cap (160 cu.m)	20 days	Tue 25/8/20	Wed 16/9/20	NA	NA	143 days	84,70,280	282	0%		25/8 16/9																			
282	KD3E	R.C. Plinth	40 days	Thu 17/9/20	Thu 5/1/20	NA	NA	143 days	281	41FF,254,283	0%		17/9 5/11																			
283	SW5	Surrounding Site formation works and road works	180 days	Fri 6/11/20	Tue 4/5/21	NA	NA	993 days	282	47FF	0%		6/11 4/5																			
284	*	Ferric Chloride Dosing Facilities	375 days	Mon 24/5/21	Thu 25/8																											

ID	KD	Task Name	Duration	Start	Finish	Actual Start	Actual Finish	Total Slack	Predecessors	Successors	% Complete	Time Risk Allowance	Gantt Chart (Q2 2020 - Q2 2025)																							
363		R.C. Structure	60 days	Thu 28/10/21	Sat 8/1/22	NA	NA	0 days	362	364	0%		28/10 8/1																							
364	SW4	Backfilling and Road works reinstatement	44 days	Mon 10/1/22	Fri 4/3/22	NA	NA	0 days	363	46FF,365	0%		10/1 4/3																							
365	SW5	ABWF & BS Works	90 days	Sat 5/3/22	Thu 2/6/22	NA	NA	599 days	364	47FF	0%		5/3 2/6																							
366	*	Pipe Works and Utility Installation	1582 day	Mon 16/9/19	Wed 22/1/25	Mon 16/9/19	NA	1 day			1%		16/9 22/1																							
367		Pipe Works At Chuk Wan Street	623 days	Mon 16/9/19	Thu 21/10/21	Mon 16/9/19	NA	668 days			12%		16/9 21/10																							
368		Drainage Diversion (Existing Drainage Culvert)	482 days	Wed 5/2/20	Thu 16/9/21	Wed 5/2/20	NA	-48 days	164,127		39%		5/2 16/9																							
369		Stage 1 - Drainage Diversion of Drainage btw Reconstructed Storm Water Manhole SMH1003177A and Reconstructed Storm Water Manhole MHD33	50 days	Wed 5/2/20	Thu 2/4/20	Wed 5/2/20	Thu 2/4/20	0 days	64,85,90,86,74,108,127	370	100%		5/2 2/4																							
370		Stage 1 - Backfilling Works for Drainage Diversion	0 days	Tue 28/4/20	Wed 6/5/20	Tue 28/4/20	Wed 6/5/20	0 days	369	168,371	100%		6/5																							
371		Stage 1 - Additional concrete surround at MH18, MH16 and additional manhole (Type 1) (NCE no. 8, 17)	28 days	Fri 3/4/20	Tue 12/5/20	Fri 3/4/20	Tue 12/5/20	0 days	370	168	100%		3/4 12/5																							
372	KD1A	Stage 2 - Drainage Diversion of Drainage b/w MHD26 and SMHH1003177A, to Abandon of Existing Drainage Culvert (1 Cell,	120 days	Mon 26/4/21	Thu 16/9/21	NA	NA	-48 days	397,75	43FF	0%		26/4 16/9																							
373	SW4	Trenchless Work for Pipe Installation	623 days	Mon 16/9/19	Thu 21/10/21	Mon 16/9/19	NA	668 days			0%		16/9 21/10																							
374		Installation of Monitoring Points	4 days	Mon 16/9/19	Thu 19/9/19	NA	NA	0 days		377	0%		16/9 19/9																							
375		Implementation of TTA	2 days	Fri 17/7/20	Sat 18/7/20	NA	NA	0 days	92	377	0%		17/7 18/7																							
376		Construction of Temporary Jacking Pit	36 days	Thu 18/6/20	Fri 31/7/20	Thu 18/6/20	NA	0 days	15,77		0%		18/6 31/7																							
377		Trial Pit Excavation & UU Detection Works	0 days	Thu 18/6/20	Thu 18/6/20	Thu 18/6/20	Thu 18/6/20	0 days	2,374,375	378	100%		18/6																							
378		Pit Construction (11m x 9m)	30 days	Fri 26/6/20	Fri 31/7/20	Fri 26/6/20	NA	-47 days	377	381	0%		26/6 31/7																							
379		Pipe Jacking Operation	157 days	Sat 1/8/20	Sat 6/2/21	NA	NA	-48 days			0%		1/8 6/2																							
380		Twin DN900 DI pipe (CHAT & CHAU)	96 days	Sat 1/8/20	Tue 24/11/20	NA	NA	-48 days			0%		1/8 24/11																							
381		Setting Up of Entrance Ring & Gantry, and Trenchless Equipment	7 days	Sat 1/8/20	Sat 8/8/20	NA	NA	-47 days	378	382	0%		1/8 8/8																							
382		Pipe Jacking Operation for CHAT DN900 DI pipe (30m, 3m/day)	16 days	Mon 10/8/20	Thu 27/8/20	NA	NA	-47 days	381	385,384,383	0% 6		10/8 27/8																							
383		Setting Up of Entrance Ring & Gantry, and Trenchless Equipment	7 days	Fri 28/8/20	Thu 3/9/20	NA	NA	-55 days	382	384	0%		28/8 3/9																							
384		Pipe Jacking Operation for CHAU DN900 DI pipe (30m, 3m/day)	16 days	Fri 4/9/20	Sat 19/9/20	NA	NA	-55 days	382,383	385	0%		4/9 19/9																							
385		Installation of grouting pipe and rail	7 days	Mon 21/9/20	Mon 28/9/20	NA	NA	-48 days	382,384	386	0%		21/9 28/9																							
386		Pipe Laying Works	25 days	Tue 29/9/20	Fri 30/10/20	NA	NA	-48 days	385	387	0%		29/9 30/10																							
387		Formwork Erection and grouting works	7 days	Sat 31/10/20	Sat 7/11/20	NA	NA	-48 days	386	388	0%		31/10 7/11																							
388		Backfilling works	14 days	Mon 9/11/20	Tue 24/11/20	NA	NA	-48 days	387	390	0%		9/11 24/11																							
389		Pipe Jacking Operation for DN2200 MS pipe (CHAV)	61 days	Wed 25/11/20	Sat 6/2/21	NA	NA	-48 days			0%		25/11 6/2																							
390		Setting Up of Entrance Ring & Gantry, and Trenchless Equipment	7 days	Wed 25/11/20	Wed 2/12/20	NA	NA	-48 days	388	391	0%		25/11 2/12																							
391		Pipe Jacking Operation for twin DN900 DI pipe (30m, 3m/day)	16 days	Thu 3/12/20	Mon 21/12/20	NA	NA	-48 days	390	392	0% 6		3/12 21/12																							
392		Installation of grouting pipe and rail	7 days	Tue 22/12/20	Thu 31/12/20	NA	NA	-48 days	391	393	0%		22/12 31/12																							
393		Pipe Laying Works	10 days	Sat 2/1/21	Wed 13/1/21	NA	NA	-48 days	392	394	0%		2/1 13/1																							
394		Formwork Erection and grouting works	7 days	Thu 14/1/21	Thu 21/1/21	NA	NA	-48 days	393	396,395	0%		14/1 21/1																							
395		Backfilling works	14 days	Fri 22/1/21	Sat 6/2/21	NA	NA	-48 days	394	396	0%		22/1 6/2																							
396		Reinstatement of Temporary Launching Pit	30 days	Mon 8/2/21	Wed 17/3/21	NA	NA	-48 days	394,395	397	0%		8/2 17/3																							
397		Reinstatement of Temporary Receiving Pit	30 days	Thu 18/3/21	Sat 24/4/21	NA	NA	-48 days	396	372,398	0%		18/3 24/4																							
398	SW5	Surrounding Site formation works and road works	180 days	Sun 25/4/21	Thu 21/10/21	NA	NA	823 days	397	47FF	0%		25/4 21/10																							
399		Process Pipeworks, All Sewerage, Utilities & Roadworks in Portion C of the Site	407 days	Mon 5/10/20	Thu 17/2/22	NA	NA	13 days			0%		5/10 17/2																							
400		Process Pipeworks	60 days	Mon 5/10/20	Mon 14/12/20	NA	NA	53 days			0%		5/10 14/12																							
401	KD1A	Connection pipe at UV System no.1 & Effluent Pumping Staion no.1	60 days	Mon 5/10/20	Mon 14/12/20	NA	NA	53 days			0%		5/10 14/12																							
402		Effluent Pipe (approx. 70m, dia 300 - 1600)	40 days	Mon 5/10/20	Fri 20/11/20	NA	NA	53 days	74	404,403	0%		5/10 20/11																							
403		Effluent Pipe Flowmeter Chamber (3.8mx3.95mx3.42m(D))	20 days	Sat 21/11/20	Mon 14/12/20	NA	NA	53 days	402	35	0%		21/11 14/12																							
404		Plant Services Water Pipe (approx. 15m, dia 150-350)	20 days	Sat 21/11/20	Mon 14/12/20	NA	NA	54 days	402	35	0%		21/11 14/12																							
405	SW4	Remaining Effluent Pipes & testing works	350 days	Fri 11/12/20	Thu 17/2/22	NA	NA	13 days	76,222,264,137,140	46FF	0%		11/12 17/2																							
406	SW4	Stormdrain Pipeworks & testing works	350 days	Fri 11/12/20	Thu 17/2/22	NA	NA	12 days	76,222,264,128	46FF	0%		11/12 17/2																							
407	SW4	Sewerage Pipeworks, manhole, protective lining & testing works	350 days	Fri 11/12/20	Thu 17/2/22	NA	NA	12 days	76,222,264,134	46FF	0%		11/12 17/2																							
408	SW4	Watermain Pipeworks & testing works	350 days	Fri 11/12/20	Thu 17/2/22	NA	NA	12 days	76,222,264,131,134	46FF	0%		11/12 17/2																							
409	SW4	Cable & Other Underground Utility Pipeworks	350 days	Fri 11/12/20	Thu 17/2/22	NA	NA	12 days	76,222,264	46FF	0%		11/12 17/2																							
410	SW4	Pipe Bridge No.1	175 days	Mon 2/8/21	Thu 3/3/22	NA	NA	1 day	2	46FF	0%		2/8 3/3																							
411	*	Remaining Works & Landscape Works	1316 day	Mon 10/8/20	Wed 22/1/25	NA	NA	0 days			0%		10/8 22/1																							
412	SW5	Irrigation System	1025 days	Mon 10/8/20	Mon 22/1/24	NA	NA	0 days	2FS+266 days	47FF	0%		10/8 22/1																							
413	SW5	Hard Landscape Works	1025 days	Mon 10/8/20	Mon 22/1/24	NA	NA	0 days	2FS+266 days	47FF	0%		10/8 22/1																							
414	SW5	Soft Landscape Works	1025 days	Mon 10/8/20	Mon 22/1/24	NA	NA	0 days	2FS+266 days	420,47FF	0%		10/8 22/1																							
415		Outfall for Effluent Pipes	124 days	Tue 1/11/22	Fri 31/3/23	NA	NA	0 days	120	47FF	0%		1/11 31/3																							
416		Slope Formation Works near Outfall	124 days	Tue 1/11/22	Fri 31/3/23	NA	NA	0 days	120	47FF	0%		1/11 31/3																							
417		Removal of invasive trees along River Embankment (NCE no. 37)	90 days	Sat 1/4/23	Mon 24/7/23	NA	NA	71 days	120FS+124 days	418	0%		1/4 24/7																							
418	SW5	Retaining Wall along River Embankment, street furniture & road works	80 days	Wed 18/10/23	Tue 23/1/24	NA	NA	0 days	120,417	47FF	0%		18/10 23/1																							
419	SW5	Remaining Site formation works, road works and boundary fence wall	250 days	Sat 5/3/22	Wed 9/11/22	NA	NA	439 days	45,46	47FF	0%		5/3 9/11																							
420		Establishment Works (365 Calendar Days)	291 days	Tue 23/1/24	Wed 22/1/25	NA	NA	1 day	414,79	49FF	0%		23/1 22/1																							
421	*	Construction of Portion A of the Site	993 days	Wed 27/11/19	Mon 3/4/23	Wed 27/11/19	NA	0 days			14%		27/11 3/4																							
422	*	CLP 132kV Substation	993 days	Wed 27/11/19	Mon 3/4/23	Wed 27/11/19	NA	0 days			14%		27/11 3/4																							
423		Internal Works	737 days	Wed 27/11/19	Thu 26/5/22	Wed 27/11/19	NA	256 days			18%		27/11 26/5																							
424		Site Clearance & Site Set Up	4 days	Tue 10/12/19	Fri 13/12/19	Tue 10/12/19	Fri 13/12/19	0 days		426	100%		10/12 13/12																							
425		Additional Tree Felling Works (NCE no.29)	4 days	Fri 20/12/19	Mon 23/12/19	Fri 20/12/19	Mon 23/12/19	0 days			100%		20/12 23/12																							
426		Trial Pit Excavation & UU Detection Works	0 days	Mon 2/12/19	Thu 12/12/19	Mon 2/12/19	Thu 12/12/19	0 days	424	428	100%		2/12 12/12																							
427		Additional Demolition of existing warehouse structure (NCE no.002)	35 days	Wed 27/11/19	Tue 31/12/19	Wed 27/11/19	Tue 31/12/19	0 days			100%		27/11 31/12																							
428		Predrilling Works (11no., 1rig, 3days/drillhole/1rig) (NCE no. 10)	11 days	Sat 4/1/20	Thu 16/1/20	Sat 4/1/20	Thu 16/1/20	0 days	66,426,119	429	100%		4/1 16/1																							
429		Installation of Monitoring Points	3 days	Thu 16/1/20	Mon 20/1/20	Thu 16/1/20	Mon 20/1/20	0 days	428	430	100%		16/1 20/1																							

Task  Milestone  Summary  Critical 

Contract No. DC/2018/07 Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1														Revised Works Programme (Status Date: 26/8/2020) (Rev. 01)																								
														[Delay of the works due to some, but not all of, NCE/CE/EWN are shown in this programme]																								
ID	Activity ID	Key Date	Task Name	Baseline Duration	Baseline Start	Baseline Finish	Duration	Start	Finish	Actual Start	Actual Finish	Predecessors	Successors	Total Slack	Risk Allowance	% Complete	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2			
121	ETSS-1100		Incident Weather to Section 3 of the Works	0 days	NA	NA	37 days	Sat 13/4/24	Tue 28/5/24	NA	NA	NA	NA	253 days		0%																						
122	ETSS-1110		Delay and Disruption of Works before July 2020	0 days	NA	NA	25 days	Sat 13/4/24	Mon 13/5/24	NA	NA	NA 125	123	253 days		0%																						
123	ETSS-1120		Delay and Disruption of Works for the month of July 2020	0 days	NA	NA	12 days	Tue 14/5/24	Tue 28/5/24	NA	NA	NA 122		253 days		0%																						
124	ETSS-1200		Other Time Affected Events to KD2A	0 days	NA	NA	4 days	Wed 27/3/24	Wed 3/4/24	NA	NA	NA	NA	253 days		0%																						
125	ETSS-1210		Special working arrangement due to COVID-19 in January 2020	0 days	NA	NA	4 days	Wed 27/3/24	Wed 3/4/24	NA	NA	NA 37	122	253 days		0%																						
126	SUB-1000		Submissions (cal.day)	1956 days	Mon 18/1/19	Wed 26/3/25	1956 days	Mon 18/1/19	Wed 26/3/25	Mon 18/1/19	NA	NA	NA	1 day		48%																						
127	SUBS-1000		Subletting Package	354 days	Mon 18/1/19	Thu 5/11/20	525 days	Mon 18/1/19	Sun 25/4/21	Mon 18/1/19	NA	NA	NA	611 days		49%																						
128	SUBS-1010		Prepare & submit subletting procedure	12 days	Mon 18/1/19	Fri 29/1/19	12 days	Mon 18/1/19	Fri 29/1/19	Mon 18/1/19	Fri 29/1/19	Fri 29/1/19	129	0 days		100%																						
129	SUBS-1020		PM review and accept subletting procedure	15 days	Sat 30/1/19	Sat 14/12/19	12 days	Sat 30/1/19	Wed 11/12/19	Sat 30/1/19	Wed 11/12/19	128	150,130,133,132,131	0 days		100%																						
130	SUBS-1030		Subletting for demolition works	22 days	Sun 15/12/19	Sun 5/1/20	93 days	Tue 17/12/19	Wed 18/3/20	Tue 17/12/19	Wed 18/3/20	129,154	277,293,353,243,307,399	0 days		100%																						
131	SUBS-1040		Subletting for UU diversion for Inlet Works No.1	24 days	Sun 15/12/19	Tue 7/1/20	78 days	Fri 10/1/20	Fri 27/3/20	Fri 10/1/20	Fri 27/3/20	129	199	0 days		100%																						
132	SUBS-1050		Subletting for inspection pit excavation	24 days	Sun 15/12/19	Tue 7/1/20	56 days	Thu 19/12/19	Wed 12/2/20	Thu 19/12/19	Wed 12/2/20	129,154	201,134	0 days		100%																						
133	SUBS-1060		Subletting for Preliminary Works (topographic surveying)	45 days	Sun 15/12/19	Tue 28/1/20	54 days	Fri 20/12/19	Tue 11/2/20	Fri 20/12/19	Tue 11/2/20	129,154	159,191,137,138,139,135	0 days		100%																						
134	SUBS-1070		Subletting for AR3 access road	30 days	Wed 8/1/20	Thu 6/2/20	0 days	Fri 13/12/19	Tue 11/2/20	Fri 13/12/19	Tue 11/2/20	132	135,197	0 days		100%																						
135	SUBS-1080		Subletting for pre-drilling works	24 days	Fri 7/2/20	Sun 1/3/20	38 days	Thu 6/2/20	Fri 20/3/20	Thu 6/2/20	Fri 20/3/20	133,134	344,252,278,294,318,136	0 days		100%																						
136	SUBS-1090		Subletting for Contractor designer for temporary works and ICE	30 days	Mon 2/3/20	Tue 31/3/20	71 days	Mon 16/12/19	Mon 24/2/20	Mon 16/12/19	Mon 24/2/20	135	282,298,348,355,361,368,374,380	0 days		100%																						
137	SUBS-1100		Subletting for independent BIM consultant	30 days	Wed 29/1/20	Thu 27/2/20	0 days	Wed 11/12/19	Thu 23/1/20	Wed 11/12/19	Thu 23/1/20	133	187	0 days		100%																						
138	SUBS-1110		Subletting for independent BIM services	30 days	Wed 29/1/20	Thu 27/2/20	15 days	Tue 14/1/20	Wed 26/2/20	Tue 14/1/20	Wed 26/2/20	133	187	0 days		100%																						
139	SUBS-1120		Subletting for Design, Supply & Install of Temporary Activated Carbon Deodorization Units (E&M Works)	45 days	Wed 29/1/20	Fri 13/3/20	0 days	Fri 13/12/19	Tue 11/2/20	Fri 13/12/19	Tue 11/2/20	133	140,141	0 days		100%																						
140	SUBS-1130		Subletting for pre-bored H pile works	45 days	Sat 14/3/20	Mon 27/4/20	45 days	Sun 5/7/20	Tue 18/8/20	Sun 5/7/20	NA	139	253,279,295,319,345	-85 days		36%																						
141	SUBS-1140		Subletting for Sheeplite installation works	45 days	Sat 14/3/20	Mon 27/4/20	45 days	Tue 1/9/20	Thu 15/10/20	NA	NA	139	254,280,296,347,142,143	35 days		0%																						
142	SUBS-1150		Subletting for ELS works for Inlet Works No.1	48 days	Tue 28/4/20	Sun 14/6/20	48 days	Fri 16/10/20	Wed 2/12/20	NA	NA	141	256	142 days		0%																						
143	SUBS-1160		Subletting for ELS works for Membrane Facilities Building and other buildings	48 days	Tue 28/4/20	Sun 14/6/20	48 days	Fri 16/10/20	Wed 2/12/20	NA	NA	141	282,298,348,144,145,146,147,148	35 days		0%																						
144	SUBS-1170		Subletting for structural works for Inlet Works Building	48 days	Mon 15/6/20	Sat 1/8/20	48 days	Thu 3/12/20	Tue 19/1/21	NA	NA	143	259	239 days		0%																						
145	SUBS-1180		Subletting for structural works for Primary Sedimentation Tanks	48 days	Mon 15/6/20	Sat 1/8/20	48 days	Thu 3/12/20	Tue 19/1/21	NA	NA	143	283	633 days		0%																						
146	SUBS-1190		Subletting for structural works for Bioreactors	48 days	Mon 15/6/20	Sat 1/8/20	48 days	Thu 3/12/20	Tue 19/1/21	NA	NA	143	299	462 days		0%																						
147	SUBS-1200		Subletting for structural works for Membrane Facilities Building	48 days	Mon 15/6/20	Sat 1/8/20	48 days	Thu 3/12/20	Tue 19/1/21	NA	NA	143	326	210 days		0%																						
148	SUBS-1210		Subletting for structural works for SAS pumping house and ancillary structures	48 days	Mon 15/6/20	Sat 1/8/20	48 days	Thu 3/12/20	Tue 19/1/21	NA	NA	143	349,149	61 days		0%																						
149	SUBS-1220		Subletting for ABWF works	48 days	Sun 2/8/20	Fri 18/9/20	48 days	Wed 20/1/21	Mon 8/3/21	NA	NA	148	273,285,304,332,351,359,365,372	611 days		0%																						
150	SUBS-1230		Subletting for Process Pipeworks, Utilities and Roadworks	48 days	Sun 15/3/20	Fri 1/5/20	48 days	Fri 22/5/20	Wed 8/7/20	Fri 22/5/20	Wed 8/7/20	129	398,402,403,404,405,406,407	0 days		100%																						
151	SUBS-1240		Subletting for Landscape Hardworks and Softworks	48 days	Sat 19/9/20	Thu 5/11/20	48 days	Tue 9/3/21	Sun 25/4/21	NA	NA	149	411,412,413	611 days		0%																						
152	SUBA-1000		Statutory Submission, Submission and Approval	1956 days	Mon 18/1/19	Wed 26/3/25	1956 days	Mon 18/1/19	Wed 26/3/25	Mon 18/1/19	NA	NA	NA	1 day		47%																						
153	SUBA-1010		Liaison with operator of SWHSTW and obtain their consent of associated method statement of major activities	1584 days	Mon 18/1/19	Wed 26/3/25	1584 days	Mon 18/1/19	Wed 26/3/25	Mon 18/1/19	NA	2	59FF	1 day		12%																						
154	SUBA-1020		Prepare and submit Subcontractor Management Plan (SMP)	24 days	Mon 18/1/19	Wed 11/12/19	24 days	Mon 18/1/19	Wed 11/12/19	Mon 18/1/19	Wed 11/12/19	2	130,133,132	0 days		100%																						
155	SUBA-1030		Prepare and submit Interface Management Plan	36 days	Mon 18/1/19	Mon 23/12/19	36 days	Mon 18/1/19	Mon 23/12/19	Mon 18/1/19	Mon 23/12/19	2	0 days		100%																							
156	SUBA-1040		Prepare and submit the TTA plans inside Treatment Plant for UU diversion and buildings construction	24 days	Mon 18/1/19	Wed 11/12/19	24 days	Mon 18/1/19	Wed 11/12/19	Mon 18/1/19	Wed 11/12/19	2	194	0 days		100%																						
157	SUBA-1050		Prepare and submit method statement for UU diversion for Inlet Works No.1	12 days	Mon 18/1/19	Fri 29/1/19	12 days	Mon 18/1/19	Fri 29/1/19	Mon 18/1/19	Fri 29/1/19	2	158	0 days		100%																						
158	SUBA-1060		PM review and accept the method statement	12 days	Sat 30/1/19	Wed 11/12/19	0 days	Sat 30/1/19	Wed 11/12/19	Sat 30/1/19	Wed 11/12/19	157	200,201	0 days		100%																						
159	SUBA-1070		Prepare and submit combine underground services drawing for PM's review the alignment	24 days	Wed 29/1/20	Fri 21/2/20	23 days	Thu 26/12/19	Sat 18/1/20	Thu 26/12/19	Sat 18/1/20	133	0 days		100%																							
160	SUBA-1080		Prepare and submit method statement for demolition existing structures	24 days	Mon 18/1/19	Wed 11/12/19	66 days	Mon 18/1/19	Wed 22/1/20																													

Contract No. DC/2018/07 Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1													Revised Works Programme (Status Date: 26/8/2020) (Rev. 01) [Delay of the works due to some, but not all of, NCE/CE/EWN are shown in this programme]															
ID	Activity ID	Key Date	Task Name	Baseline Duration	Baseline Start	Baseline Finish	Duration	Start	Finish	Actual Start	Actual Finish	Predecessors	Successors	Total Slack	Risk Allowance	% Complete	Gantt Chart (2020-2024)											
194	CAR-0000	*	Access Road (AR3), B-1	223 days	Thu 12/12/19	Sat 12/9/20	220 days	Mon 20/1/20	Fri 16/10/20	Mon 20/1/20	NA, 4, 156			0 days		71%	[Gantt Chart Data]											
195	CAR-1000		Site setup and clearance works	28 days	Thu 12/12/19	Thu 16/1/20	38 days	Mon 20/1/20	Fri 6/3/20	Mon 20/1/20	Fri 6/3/20	196		0 days		100%	[Gantt Chart Data]											
196	CAR-2000		Drainage and Utilities Works	75 days	Fri 17/1/20	Tue 21/4/20	75 days	Sat 7/3/20	Tue 9/6/20	Sat 7/3/20	Tue 9/6/20	195		0 days		100%	[Gantt Chart Data]											
197	CAR-3000	KD1A	Roadworks (NCEs)	120 days	Wed 22/4/20	Sat 12/9/20	145 days	Fri 24/4/20	Fri 16/10/20	Fri 24/4/20	NA, 196, 134	42FF		-27 days		49%	[Gantt Chart Data]											
198	CIW-0000	*	Inlet Works No.1, B-2	897 days	Wed 29/1/20	Mon 6/2/23	972 days	Fri 13/12/19	Sat 25/3/23	Fri 13/12/19	NA			591 days		20%	[Gantt Chart Data]											
199	CIW-1000		Diversion Works (1. Inlet Trunk Sewer, Leachate Rising Mains, Sludge Pipes, Tank Drains and Pipelines near Primary Sludge Thickeners)	237 days	Wed 29/1/20	Thu 12/1/20	490 days	Fri 13/12/19	Tue 10/8/21	Fri 13/12/19	NA, 178, 131	43FF		-219 days		46%	[Gantt Chart Data]											
200	CIW-1100		Utilities scanning to identify existing UU arrangement	12 days	Wed 29/1/20	Tue 11/2/20	0 days	Fri 13/12/19	Sat 18/1/20	Fri 13/12/19	Sat 18/1/20	158	201SS, 203	0 days		100%	[Gantt Chart Data]											
201	CIW-1200		Trial pits to locate the collection points	24 days	Wed 29/1/20	Tue 25/2/20	0 days	Mon 6/1/20	Tue 10/3/20	Mon 6/1/20	Tue 10/3/20	158, 200SS, 132	212, 237FS+13 days, 222	0 days		100%	[Gantt Chart Data]											
202	CIW-1300		Installation and Commissioning of Temporary Activated Carbon Deodorization Unit for the Existing Inlet Works	84 days	Mon 17/2/20	Sat 30/5/20	98 days	Wed 11/3/20	Sat 11/7/20	Wed 11/3/20	Sat 11/7/20			0 days		100%	[Gantt Chart Data]											
203	CIW-1310		Construction of concrete plinth	24 days	Mon 17/2/20	Sat 14/3/20	24 days	Wed 11/3/20	Wed 8/4/20	Wed 11/3/20	Wed 8/4/20	200	204	0 days		100%	[Gantt Chart Data]											
204	CIW-1320		Installation of Deodorizer	26 days	Mon 16/3/20	Sat 18/4/20	40 days	Thu 9/4/20	Sat 30/5/20	Thu 9/4/20	Sat 30/5/20	203	205	0 days		100%	[Gantt Chart Data]											
205	CIW-1330		Testing & commissioning	15 days	Mon 20/4/20	Fri 8/5/20	15 days	Mon 1/6/20	Wed 17/6/20	Mon 1/6/20	Wed 17/6/20	204	206FS-1 day	0 days		100%	[Gantt Chart Data]											
206	CIW-1340		Demolishment of the existing carbon deodorization unit	20 days	Fri 8/5/20	Sat 30/5/20	20 days	Wed 17/6/20	Sat 11/7/20	Wed 17/6/20	Sat 11/7/20	205FS-1 day		0 days		100%	[Gantt Chart Data]											
207	CIW-1400		Diversion of Inlet Trunk Sewer (approx. 40m 1800mm dia concrete pipe, 4 deep manholes and Inlet Reception Chamber)	213 days	Wed 26/2/20	Thu 12/1/20	417 days	Sat 14/3/20	Tue 10/8/21	Sat 14/3/20	NA			-219 days		31%	[Gantt Chart Data]											
208	CIW-1410		Remedial Works for uncharted sludge Pipe leakage (CE030)	0 days	NA	NA	1 day	Sat 14/3/20	Sat 14/3/20	Sat 14/3/20	Sat 14/3/20		209	0 days		100%	[Gantt Chart Data]											
209	CIW-1420		Diversion of uncharted DN250 sludge pipe (CE 030)	0 days	NA	NA	39 days	Sat 14/3/20	Tue 5/5/20	Sat 14/3/20	Tue 5/5/20	208	210	0 days		100%	[Gantt Chart Data]											
210	CIW-1430		Removal of concrete surround and uncharted sludge pipe (CE 030)	0 days	NA	NA	2 days	Wed 6/5/20	Thu 7/5/20	Wed 6/5/20	Thu 7/5/20	209	211	0 days		100%	[Gantt Chart Data]											
211	CIW-1440		Remedial works for uncharted pipe and unforeseen water seepage (NCE 0021)	0 days	NA	NA	10 days	Fri 8/5/20	Tue 19/5/20	Fri 8/5/20	Tue 19/5/20	210	212, 213	0 days		100%	[Gantt Chart Data]											
212	CIW-1450		Trench Excavation for 1800mm dia pipeline and manholes	68 days	Wed 26/2/20	Thu 21/5/20	104 days	Wed 20/5/20	Sat 19/9/20	Wed 20/5/20	NA, 201, 211			-14 days		73%	[Gantt Chart Data]											
213	CIW-1451		Sheetpile installation (on hold due to identification of uncharted obstruction) (EWN 0045)	0 days	NA	NA	26 days	Wed 20/5/20	Thu 18/6/20	Wed 20/5/20	Thu 18/6/20	211	214	0 days		100%	[Gantt Chart Data]											
214	CIW-1452		Identification of uncharted concrete surround and pipes near MHA01 (EWN 0045)	0 days	NA	NA	41 days	Thu 18/6/20	Thu 6/8/20	Thu 18/6/20	Thu 6/8/20	213	215	0 days		100%	[Gantt Chart Data]											
215	CIW-1453		Removal of uncharted concrete surround and pipes near MHA01 (EWN 0045) and Sheetpile installation	0 days	NA	NA	10 days	Fri 7/8/20	Tue 18/8/20	Fri 7/8/20	Tue 18/8/20	214	216	0 days		100%	[Gantt Chart Data]											
216	CIW-1454		Removal of top 500mm soil and replace with rockfill at MHA01, MHA02, IRC, trench MHA01 to MHA02 (NCE 0073 & 78)	0 days	NA	NA	14 days	Tue 11/8/20	Thu 3/9/20	Tue 11/8/20	NA, 215	217		-219 days		0%	[Gantt Chart Data]											
217	CIW-1455		Removal of existing DSD drawpits near IRC & exposure of CLP cables with installation of additional temporary support (EWN 0051)	0 days	NA	NA	14 days	Fri 4/9/20	Sat 19/9/20	NA	NA, 216	218		-219 days		0%	[Gantt Chart Data]											
218	CIW-1460		Construct MH MHA01, MHA02, MHA03, MHA04 and Inlet Reception Chamber (NCE 0022)	88 days	Fri 22/5/20	Wed 3/6/20	150 days	Mon 21/9/20	Wed 24/3/21	NA	NA, 217	219		-219 days		0%	[Gantt Chart Data]											
219	CIW-1470		Lay 1800mm dia concrete pipe (NCE 0022)	45 days	Fri 4/9/20	Thu 29/10/20	82 days	Thu 25/3/21	Tue 6/7/21	NA	NA, 218	220		-219 days		0%	[Gantt Chart Data]											
220	CIW-1480	KD1B	Collection to existing Inlet Chamber -->10/8/21	12 days	Fri 30/10/20	Thu 12/11/20	30 days	Wed 7/7/21	Tue 10/8/21	NA	NA, 219	43FF		-219 days		0%	[Gantt Chart Data]											
221	CIW-1500		Diversion of Leachate Rising Main, Sludge Pipes and Tank Drain	120 days	Wed 1/4/20	Thu 27/8/20	166 days	Mon 11/5/20	Wed 25/11/20	Mon 11/5/20	NA			-11 days		41%	[Gantt Chart Data]											
222	CIW-1510		Diversion of Tank Drain MHD9.5 to MHA04 (approx. 70m 675mm dia concrete pipe, 24m DN250 DI leachate rising main, 90m CHES1&S2 DN250 CI)	63 days	Fri 28/8/20	Thu 12/11/20	151 days	Mon 11/5/20	Sat 7/11/20	Mon 11/5/20	NA, 201			4 days		53%	[Gantt Chart Data]											
223	CIW-1511		Tank Drain Diversion near MTRCL track	0 days	NA	NA	123 days	Fri 12/6/20	Sat 7/11/20	Fri 12/6/20	NA			4 days		49%	[Gantt Chart Data]											
224	CIW-1511a		Excavation of trial pit near MHD9.5 (EWN 044)	0 days	NA	NA	5 days	Fri 12/6/20	Wed 17/6/20	Fri 12/6/20	Wed 17/6/20		225	0 days		100%	[Gantt Chart Data]											
225	CIW-1511c		Uncharted cables found near MTRCL track and identification (EWN 044)	0 days	NA	NA	1 day	Thu 18/6/20	Thu 18/6/20	Thu 18/6/20	Thu 18/6/20	224	226	0 days		100%	[Gantt Chart Data]											
226	CIW-1511d		Excavation of trial pit near MHD8.5	0 days	NA	NA	5 days	Fri 19/6/20	Wed 24/6/20	Fri 19/6/20	Wed 24/6/20	225	227	0 days		100%	[Gantt Chart Data]											
227	CIW-1511e		Lower the ground surface, opening and additional trial pit (TP38) (EWN 046)	0 days	NA	NA	17 days	Thu 2/7/20	Tue 21/7/20	Thu 2/7/20	Tue 21/7/20	226	228	0 days		100%	[Gantt Chart Data]											
228	CIW-1511f		Trial excavation near MTRCL track (NCE0044)	0 days	NA	NA	9 days	Wed 22/7/20	Fri 31/7/20	Wed 22/7/20	Fri 31/7/20	227	229	0 days		100%	[Gantt Chart Data]											
229	CIW-1511g		Excavation of additional trial pit (TP45 & 47) (NCE0044)	0 days	NA	NA	11 days	Tue 28/7/20	Sat 8/8/20	Tue 28/7/20	Sat 8/8/20	228	230	0 days		100%	[Gantt Chart Data]											
230	CIW-1511h		Awaiting for AECOM instruction for alignment confirmation for sludge pipe, tank drain & drainage works (NCE0044)	0 days	NA	NA	12 days	Mon 10/8/20	Sat 22/8/20	Mon 10/8/20	Sat 22/8/20	229	231	0 days		100%	[Gantt Chart Data]											
231	CIW-1511i	KD1B	Utilities diversion works	63 days	Fri 28/8/20	Thu 12/11/20	63 days	Mon 24/8/20	Sat 7/11/20	NA	NA, 230	43FF		4 days		0%	[Gantt Chart Data]											
232	CIW-1512		Excavation of trial pit and identification of connection point (NCE 0064)	0 days	NA	NA	54 days	Mon 11/5/20	Tue 14/7/20	Mon 11/5/20	Tue 14/7/20		233	0 days		100%	[Gantt Chart Data]											
233	CIW-1513		Trench excavation for twin DN250 sludge pipe and stopped by AECOM (NCE 0064)	0 days	NA	NA	4 days	Wed 15/7/20	Sat 18/7/20	Wed 15/7/20	Sat 18/7/20	232	234	0 days		100%	[Gantt Chart Data]											
234	CIW-1514		Additional hole drilling works and identification of connection point (NCE 0064)	0 days	NA	NA	45 days	Mon 20/7/20	Wed 9/9/20	Mon 20/7/20	NA, 233	235		-11 days		2%	[Gantt Chart Data]											
235	CIW-1520	KD1B	Diversion of Tank Drain MHD8.5 (approx. 70m CHES1 & CHES2)	63 days	Fri 28/8/20	Thu 12/11/20	63 days	Thu 10/9/20	Wed 25/11/20	NA	NA, 234	43FF		-11 days		0%	[Gantt Chart Data]											
236	CIW-1600	*	Diversion of pipelines near Primary Sludge Thickeners (approx. 180m long 150mm to 375mm concrete pipes)	200 days	Thu 12/3/20	Thu 12/1/20	235 days	Thu 19/3/20	Sat 2/1/21	Thu 19/3/20	NA			-41 days		55%	[Gantt Chart Data]											
237	CIW-1610		Trench Excavation from MH MHD1E to MHD5 (approx. 90m long with M/Hs MHD1A, 1B, 1C, 1D & 1E)	50 days	Thu 12/3/20	Fri 15/5/20	50 days	Sat 28/3/20	Mon 1/6/20	Sat 28/3/20	Mon 1/6/20	201FS+13 days	238, 239	0 days		100%	[Gantt Chart Data]											
238	CIW-1620		Manholes construction and Pipe laying	50 days	Sat 16/5/20	Wed 15/7/20	50 days	Tue 2/6/20	Fri 31/7/20	Tue 2/6/20	NA, 237	43FF, 240		86 days		80%	[Gantt Chart Data]											
239	CIW-1630		Trench Excavation from MH MHD1E to MHD5 (approx. 90m long with M/Hs M1A to M3B) (NCE 0012)	50 days	Sat 16/5/20	Wed 15/7/20	32 days	Thu 19/3/20	Wed 29/4/20	Thu 19/3/20	Wed 29/4/20	237	240, 241	0 days		100%	[Gantt Chart Data]											
240	CIW-1640		Manholes construction and Pipe laying (NCE 0012)	50 days	Thu 16/7/20	Fri 11/9/20	12 days	Mon 4/5/20	Sat 16/5/20	Mon 4/5/20	Sat 16/5/20	238, 239	43FF, 242	0 days		100%	[Gantt Chart Data]											
241	CIW-1650		Trench Excavation from MHD5 to MHD9.5 (approx. 90m long with M/Hs MHD5A & 5B)	50 days	Thu 16/7/20	Fri 11/9/20	50 days	Wed 2/9/20	Mon 2/11/20	NA	NA, 239, 244, 248, 249, 250	242, 274SS		-41 days		0%	[Gantt Chart Data]											
242	CIW-1660	KD1B	Manholes construction and Pipe laying	50 days	Sat 12/9/20	Thu 12/11/20	50 days	Tue 3/11/20	Sat 2/1/21	NA	NA, 241, 240	43FF		-41 days		0%	[Gantt Chart Data]											
243	CIW-2000		Decommission and Demolition of Existing Facilities and Structures	78 days	Wed 8/4/20	Wed 15/7/20	90 days	Mon 18/5/20	Tue 1/9/20	Mon 18/5/20	NA, 6, 130, 160, 162			-36 days		49%	[Gantt Chart Data]											
244	CIW-2100		Primary Sludge Thickening Tank No.1 and No.2	42 days	Wed 8/4/20	Mon 1/6/20	54 days	Mon 18/5/20	Tue 21/7/20	Mon 18/5/20	Tue 21/7/20		241	0 days		100%	[Gantt Chart Data]											
245	CIW-2110		Removal of E&M equipment of primary sludge thickening tank (NCE 0020)	0 days	NA	NA	1 day	Thu 4/6/20	Thu 4/6/20	Thu 4/6/20	Thu 4/6/20		246	0 days		100%	[Gantt Chart Data]											
246	CIW-2120		Decommission and Demolition the tank (NCE 0052)	0 days	NA	NA	27 days	Thu 18/6/20	Tue 21/7/20	Thu 18/6/20	Tue 21/7/20	245	248	0 days		100%	[Gantt Chart Data]											
247	CIW-2130		Demolition of structure no.2	0 days	NA	NA	24 days	Mon 18/5/20	Mon 22/6/20	Mon 18/5/20	Mon 22/6/20			0 days		100%	[Gantt Chart Data]											
248	CIW-2200		Primary Sludge Pump Pit	18 days	Tue 2/6/20	Mon 22/6/20	18 days	Wed 22/7/20	Tue 11/8/20	NA	NA, 246	249, 250, 241		-41 days		0%	[Gantt Chart Data]											
249	CIW-2300		Septic Tank	18 days	Tue 23/6/20	Wed 15/7/20	18 days	Wed 12/8/20	Tue 1/9/20	NA	NA, 248	241		-41 days		0%	[Gantt Chart Data]											
250	CIW-2400		Diesel Tank	18 days	Tue 23/6/20	Wed 15/7/20	18 days	Wed 12/8/20	Tue 1/9/20	NA	NA, 248	241, 252FS-10 days		-41 days		0%	[Gantt Chart Data]											
251	CIW-3000	*	Inlet Works No.1 Building	770 days	Sat 4/7																							

Contract No. DC/2018/07 Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1													Revised Works Programme (Status Date: 26/8/2020) (Rev. 01)																						
[Delay of the works due to some, but not all of, NCE/CE/EWN are shown in this programme]																																			
ID	Activity ID	Key Date	Task Name	Baseline Duration	Baseline Start	Baseline Finish	Duration	Start	Finish	Actual Start	Actual Finish	Predecessors	Successors	Total Slack	Risk Allowance	% Complete	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4		
333	CMF-11000	SW3	Process Pipe CHO chainage 0-65, CHM chainage 0-120, CHN chainage 0-125, CHO chainage 0-65, CHP chainage 0-60 & CHV chainage 0-50	450 days	Mon 27/6/22	Fri 29/12/23	450 days	Wed 30/11/22	Wed 19/6/24		NA	NA 328,329	56FF	235 days		0%																			
334	CSA-0000	*	SAS Pumping Station, B-6	496 days	Wed 20/5/20	Sat 15/1/22	572 days	Sat 18/4/20	Sat 19/3/22	Sat 18/4/20		NA 11		892 days		13%																			
335	CSA-1000	*	Additional Preliminary Works	0 days	NA	NA	104 days	Tue 9/6/20	Mon 12/10/20	Tue 9/6/20		NA		0 days		23%																			
336	CSA-1100		Diversion of Existing DN150 SAS Raising Main (PPMI 025)	0 days	NA	NA	80 days	Tue 9/6/20	Fri 11/9/20	Tue 9/6/20		343		-68 days		43%																			
337	CSA-1200		Diversion of Power supply for existing Slaughter House pump station (PPMI 034)	0 days	NA	NA	80 days	Tue 16/6/20	Fri 18/9/20	Tue 16/6/20		343		-74 days		35%																			
338	CSA-1300		Decommission of existing power and signal systems in leachate Pump station switch room (PPMI 039)	0 days	NA	NA	70 days	Wed 24/6/20	Tue 15/9/20	Wed 24/6/20		343		-71 days		30%																			
339	CSA-1400		Diversion of Existing DN250 Leachate Raising Main (PPMI 025)	0 days	NA	NA	70 days	Mon 29/6/20	Fri 18/9/20	Mon 29/6/20		343		-74 days		26%																			
340	CSA-1500		Construction of Cable trough for CLP 11kv Cable Diversion (PPMI 041)	0 days	NA	NA	60 days	Mon 13/7/20	Sat 19/9/20	Mon 13/7/20		343		-75 days		12%																			
341	CSA-1600		Demolition of Existing Pillar box and its concrete plinth (CE 030)	0 days	NA	NA	60 days	Sat 1/8/20	Mon 12/10/20	Sat 1/8/20		343		-92 days		0%																			
342	CSA-1700		Excavation to locate existing underground cable near SAS Pump Station (PPMI 038)	0 days	NA	NA	45 days	Thu 13/8/20	Tue 6/10/20	Thu 13/8/20		343		-87 days		0%																			
343	CSA-2000		Tank Drain Diversion Near SAS Pumping Station	60 days	Tue 23/6/20	Wed 2/9/20	60 days	Tue 13/10/20	Tue 22/12/20		NA	NA 336,337,338,339,340,341,342	345	-92 days		0%																			
344	CSA-3000		Predrilling (4hrs, 1rig, 4days/drillhole/rig)	15 days	Wed 20/5/20	Fri 6/6/20	7 days	Sat 18/4/20	Sat 25/4/20	Sat 18/4/20		Sat 25/4/20 135		278,345	0 days	100%																			
345	CSA-4000		Pre-bored H piles (12nos, 1rigs, 5days/pile/rig)	60 days	Thu 3/9/20	Sat 14/11/20	60 days	Wed 23/12/20	Tue 9/3/21		NA	NA 140,343,344	279,346	-92 days	2	0%																			
346	CSA-5000		Pile Load Test	21 days	Mon 16/1/20	Wed 9/12/20	21 days	Wed 10/3/21	Tue 6/4/21		NA	NA 345	348,347	-92 days		0%																			
347	CSA-6000		Sheetpile Installation (FSP-II, 690sq.m, 40sqm/day)	21 days	Thu 10/12/20	Wed 6/1/21	21 days	Wed 7/4/21	Fri 30/4/21		NA	NA 141,346	348	-92 days		0%																			
348	CSA-7000		ELS works (1300cu.m soil with 2 layers walling / strutting)	60 days	Thu 7/1/21	Sat 20/3/21	60 days	Mon 3/5/21	Wed 14/7/21		NA	NA 347,143,346,136	349	-92 days	2	0%																			
349	CSA-8000	KD1H	R.C. Structure works	114 days	Mon 22/3/21	Mon 9/8/21	114 days	Thu 15/7/21	Sat 27/11/21		NA	NA 148,180,181,348,184,182	350,351,49FF	-92 days	5	0%																			
350	CSA-9000	KD1H	Allow access to Contractor DE/2018/03 for E&M installation and T&C works	0 days	Mon 9/8/21	Mon 9/8/21	0 days	Sat 27/11/21	Sat 27/11/21		NA	NA 349	49FF	-92 days		0%																			
351	CSA-10000	SW1	ABWF works + BS works	90 days	Tue 28/9/21	Sat 15/1/22	90 days	Mon 29/11/21	Sat 19/3/22		NA	NA 349,183,149,384SS	56FF	892 days		0%																			
352	CAS-0000	*	Ancillary Structures, B-7	404 days	Mon 7/9/20	Sat 15/1/22	404 days	Mon 7/9/20	Sat 15/1/22		NA	NA 12		99 days		0%																			
353	CAS-1000		Demolition of Existing Facilities and Structures (leachate pump pit & pumping station)	120 days	Mon 7/9/20	Sat 30/1/21	120 days	Mon 7/9/20	Sat 30/1/21		NA	NA 130,160,162	360,367,373,379,385	99 days		0%																			
354	CCS-1000	*	Chemical System No.1	383 days	Sat 3/10/20	Sat 15/1/22	383 days	Sat 3/10/20	Sat 15/1/22		NA	NA		188 days		0%																			
355	CCS-1100		Excavation for Raft Footing (20cu.m)	10 days	Sat 3/10/20	Wed 14/10/20	10 days	Sat 3/10/20	Wed 14/10/20		NA	NA 136	356,361	188 days		0%																			
356	CCS-1200		Plate load test	14 days	Thu 15/10/20	Sat 31/10/20	14 days	Thu 15/10/20	Sat 31/10/20		NA	NA 355	357	308 days		0%																			
357	CCS-1300	KD1J	R.C. structure works	60 days	Mon 2/11/20	Wed 13/1/21	60 days	Mon 2/11/20	Wed 13/1/21		NA	NA 356	358,51FF,359	308 days	2	0%																			
358	CCS-1400	KD1J	Allow access to Contractor DE/2018/04 for E&M installation and T&C works	0 days	Wed 13/1/21	Wed 13/1/21	0 days	Wed 13/1/21	Wed 13/1/21		NA	NA 357	51FF	308 days		0%																			
359	CCS-1500	SW1	ABWF works + BS works	90 days	Tue 28/9/21	Sat 15/1/22	90 days	Tue 28/9/21	Sat 15/1/22		NA	NA 183,149,357,384SS	56FF	943 days		0%																			
360	CCS-2000	*	Chemical System No.2	284 days	Mon 1/2/21	Sat 15/1/22	284 days	Mon 1/2/21	Sat 15/1/22		NA	NA 353		99 days		0%																			
361	CCS-2100		Excavation for Raft Footing (100cu.m)	30 days	Mon 1/2/21	Wed 10/3/21	30 days	Mon 1/2/21	Wed 10/3/21		NA	NA 136,355	362,368	99 days		0%																			
362	CCS-2200		Plate load test	14 days	Thu 11/3/21	Fri 26/3/21	14 days	Thu 11/3/21	Fri 26/3/21		NA	NA 361	363	204 days		0%																			
363	CCS-2300	KD1J	R.C. structure works	45 days	Sat 27/3/21	Mon 24/5/21	45 days	Sat 27/3/21	Mon 24/5/21		NA	NA 362	364,51FF,365,366	204 days	2	0%																			
364	CCS-2400	KD1J	Allow access to Contractor DE/2018/04 for E&M installation and T&C works	0 days	Mon 24/5/21	Mon 24/5/21	0 days	Mon 24/5/21	Mon 24/5/21		NA	NA 363	51FF	204 days		0%																			
365	CCS-2500	SW1	ABWF works + BS works	90 days	Tue 28/9/21	Sat 15/1/22	90 days	Tue 28/9/21	Sat 15/1/22		NA	NA 183,149,363,384SS	56FF	943 days		0%																			
366	CCS-2600	SW1	Demolition of existing chemical room	60 days	Tue 25/5/21	Wed 4/8/21	60 days	Tue 25/5/21	Wed 4/8/21		NA	NA 363	56FF	1078 days		0%																			
367	CFS-1000	*	Fire Services Sprinkler Pumping Room	254 days	Thu 11/3/21	Sat 15/1/22	254 days	Thu 11/3/21	Sat 15/1/22		NA	NA 353		99 days		0%																			
368	CFS-2000		Excavation for Raft Footing (800cu.m)	60 days	Thu 11/3/21	Tue 25/5/21	60 days	Thu 11/3/21	Tue 25/5/21		NA	NA 136,361	369,374,386	99 days		0%																			
369	CFS-3000		Plate load test	14 days	Wed 26/5/21	Thu 10/6/21	14 days	Wed 26/5/21	Thu 10/6/21		NA	NA 368	370	129 days		0%																			
370	CFS-4000	KD1J	R.C. structure works	60 days	Fri 11/6/21	Sat 21/8/21	60 days	Fri 11/6/21	Sat 21/8/21		NA	NA 369	372,371,51FF	129 days	2	0%																			
371	CFS-5000	KD1J	Allow access to Contractor DE/2018/04 for E&M installation and T&C works	0 days	Sat 21/8/21	Sat 21/8/21	0 days	Sat 21/8/21	Sat 21/8/21		NA	NA 370	51FF	129 days		0%																			
372	CFS-6000	SW1	ABWF works + BS works	90 days	Tue 28/9/21	Sat 15/1/22	90 days	Tue 28/9/21	Sat 15/1/22		NA	NA 183,149,370,384SS	56FF	943 days		0%																			
373	CTC-0000	*	Temporary Chemical Dosing System	194 days	Wed 26/5/21	Sat 15/1/22	194 days	Wed 26/5/21	Sat 15/1/22		NA	NA 353		99 days		0%																			
374	CTC-1000		Excavation for Raft Footing (300cu.m)	30 days	Wed 26/5/21	Wed 30/6/21	30 days	Wed 26/5/21	Wed 30/6/21		NA	NA 136,368	375,380	99 days		0%																			
375	CTC-2000		Plate load test	14 days	Fri 27/7/21	Sat 17/7/21	14 days	Fri 27/7/21	Sat 17/7/21		NA	NA 374	376	114 days		0																			

Activity ID	Activity Name	Original Duration	Early Start	Early Finish	Late Start	Late Finish	Total Float	Gantt Chart (2019-2024)																																																			
Compliance with BEAM Requirements																																																											
AS013400	BEAM Plus	1580	10-Nov-19	07-Mar-24	12-Nov-19	09-Mar-24	2	[Green bar from Nov-19 to Mar-24]																																																			
BIM																																																											
AS011820a	Prepare & Submit Construction Stage BIM Execution Plan	30	24-Oct-19	22-Nov-19	01-Nov-19	30-Nov-19	8	[Green bar from Oct-19 to Nov-19]																																																			
AS011830a	PM Reivew & Comment Construction Stage BIM Execution Plan	21	23-Nov-19	13-Dec-19	01-Dec-19	21-Dec-19	8	[Green bar from Nov-19 to Dec-19]																																																			
AS011840a	Revise & Re-submit Construction Stage BIM Execution Plan	14	14-Dec-19	27-Dec-19	22-Dec-19	04-Jan-20	8	[Green bar from Dec-19 to Jan-20]																																																			
AS011850a	PM Reivew & Approval of Construction Stage BIM Execution Plan	21	28-Dec-19	17-Jan-20	05-Jan-20	25-Jan-20	8	[Green bar from Dec-19 to Jan-20]																																																			
AS011880b	Contractor Review & Study Design Stage BIM	92	24-Oct-19	23-Jan-20	26-Oct-19	25-Jan-20	2	[Green bar from Oct-19 to Jan-20]																																																			
AS011900	Contractor Develop 1st Construction Stage BIM	60	24-Jan-20	23-Mar-20	26-Jan-20	25-Mar-20	2	[Green bar from Jan-20 to Mar-20]																																																			
AS011920a	Review & Update BIM Execution Plan & BIM Model	1415	24-Mar-20	06-Feb-24	26-Mar-20	08-Feb-24	2	[Green bar from Mar-20 to Feb-24]																																																			
AS011960	Prepare & Submit the Fully Coordinated BIM	60	09-Dec-23	06-Feb-24	11-Dec-23	08-Feb-24	2	[Green bar from Dec-23 to Feb-24]																																																			
AS011961	PM Reivew & Comment Fully Coordinated BIM	21	07-Feb-24	27-Feb-24	09-Feb-24	29-Feb-24	2	[Green bar from Feb-24 to Feb-24]																																																			
AS011962	Revise & Re-submit Fully Coordinated BIM	14	28-Feb-24	12-Mar-24	01-Mar-24	14-Mar-24	2	[Green bar from Feb-24 to Mar-24]																																																			
AS011963	PM Reivew & Approval of Fully Coordinated BIM	21	13-Mar-24	02-Apr-24	15-Mar-24	04-Apr-24	2	[Green bar from Mar-24 to Apr-24]																																																			
Section 1 - Design for UV System No. 1 & Effluent Pumping Station No.1																																																											
Major Plant & Materials Procurement																																																											
AS103100	Procurement & PO for UV Disinfection System (S10)	150	20-Nov-19	17-Apr-20	20-Nov-19	17-Apr-20	0	[Red bar from Nov-19 to Apr-20]																																																			
AS103120	Procurement & PO for Lift-up Pumps (S11)	150	20-Nov-19	17-Apr-20	20-Nov-19	17-Apr-20	0	[Red bar from Nov-19 to Apr-20]																																																			
AS103140	Procurement & PO for Transfer Pumps (S13)	150	20-Nov-19	17-Apr-20	20-Nov-19	17-Apr-20	0	[Red bar from Nov-19 to Apr-20]																																																			
AS103160	Procurement & PO for FRP Cover (S11)	90	18-Apr-20	16-Jul-20	10-May-20	07-Aug-20	22	[Green bar from Apr-20 to Aug-20]																																																			
AS103180	Procurement & PO for EOT Cranes (2T & 5T) (S19)	150	19-Jan-20	16-Jun-20	11-Mar-20	07-Aug-20	52	[Green bar from Jan-20 to Aug-20]																																																			
AS103200	Procurement & PO for Stoplogs (S21)	90	18-Apr-20	16-Jul-20	10-May-20	07-Aug-20	22	[Green bar from Apr-20 to Aug-20]																																																			
AS103220	Procurement & PO for Penstocks (S21)	90	18-Apr-20	16-Jul-20	10-May-20	07-Aug-20	22	[Green bar from Apr-20 to Aug-20]																																																			
Design & Submission																																																											
General Arrangement Drawings																																																											
AS101100	Prepare & Submit General Arrangement Drawings	90	26-Jan-20	24-Apr-20	26-Jan-20	24-Apr-20	0	[Red bar from Jan-20 to Apr-20]																																																			
AS101110	Review & Comment on General Arrangement Drawings by PM	21	25-Apr-20	15-May-20	07-May-20	27-May-20	12	[Green bar from Apr-20 to May-20]																																																			
AS101120	Revise & Re-submit General Arrangement Drawings	14	16-May-20	29-May-20	28-May-20	10-Jun-20	12	[Green bar from May-20 to Jun-20]																																																			
AS101130	Review & Accept of General Arrangement Drawings by PM	21	30-May-20	19-Jun-20	11-Jun-20	01-Jul-20	12	[Green bar from May-20 to Jun-20]																																																			
Civil & Dimensional / Tolerance Requirement Drawings																																																											
AS102100	Prepare & Submit Civil Requirement Drawings	60	07-Mar-20	05-May-20	07-Mar-20	05-May-20	0	[Red bar from Mar-20 to May-20]																																																			
AS102110	Review & Comment on Civil Requirement Drawings by PM	21	06-May-20	26-May-20	14-May-20	03-Jun-20	8	[Green bar from May-20 to Jun-20]																																																			
AS102120	Revise & Re-submit Civil Requirement Drawings	14	27-May-20	09-Jun-20	04-Jun-20	17-Jun-20	8	[Green bar from May-20 to Jun-20]																																																			
AS102130	Review & Accept of Civil Requirement Drawings by PM	21	10-Jun-20	30-Jun-20	18-Jun-20	08-Jul-20	8	[Green bar from Jun-20 to Jul-20]																																																			
Electrical Schematic Drawings																																																											
AS102150	Prepare & Submit Elec. Schematic Drawings	60	25-Feb-20	24-Apr-20	26-Feb-20	25-Apr-20	1	[Red bar from Feb-20 to Apr-20]																																																			
AS102160	Review & Comment on Elec. Schematic Drawings by PM	21	25-Apr-20	15-May-20	13-Jun-20	03-Jul-20	49	[Green bar from Apr-20 to Jul-20]																																																			
AS102170	Revise & Re-submit Elec. Schematic Drawings	14	16-May-20	29-May-20	04-Jul-20	17-Jul-20	49	[Green bar from May-20 to Jul-20]																																																			
AS102180	Review & Accept of Elec. Schematic Drawings by PM	21	30-May-20	19-Jun-20	18-Jul-20	07-Aug-20	49	[Green bar from May-20 to Aug-20]																																																			
UV System No. 1																																																											
AS102200	Prepare & Submit Wiring Dwgs, Cable Schedule & Design Cal.	60	24-Mar-20	22-May-20	25-Mar-20	23-May-20	1	[Red bar from Mar-20 to May-20]																																																			
AS102210	Review & Comment on Wiring Dwgs, Cable Schedule & Design Cal.	21	23-May-20	12-Jun-20	24-May-20	13-Jun-20	1	[Green bar from May-20 to Jun-20]																																																			
AS102220	Revise & Re-submit Wiring Dwgs, Cable Schedule & Design Cal.	14	13-Jun-20	26-Jun-20	14-Jun-20	27-Jun-20	1	[Green bar from Jun-20 to Jun-20]																																																			
AS102230	Review & Accept of Wiring Dwgs, Cable Schedule & Design Cal.	21	27-Jun-20	17-Jul-20	28-Jun-20	18-Jul-20	1	[Green bar from Jun-20 to Jul-20]																																																			
AS102300	Prepare & Submit the Schedule, Design Cal. & Fixing Details of Equipment	60	15-Apr-20	13-Jun-20	15-Apr-20	13-Jun-20	0	[Red bar from Apr-20 to Jun-20]																																																			
AS102310	Review & Comment on the Schedule, Design Cal. & Fixing Details of Equipment	21	14-Jun-20	04-Jul-20	14-Jun-20	04-Jul-20	0	[Green bar from Jun-20 to Jul-20]																																																			
AS102320	Revise & Re-submit the Schedule, Design Cal. & Fixing Details of Equipment	14	05-Jul-20	18-Jul-20	05-Jul-20	18-Jul-20	0	[Red bar from Jul-20 to Jul-20]																																																			
AS102330	Review & Accept of the Schedule, Design Cal. & Fixing Details of Equipment	21	19-Jul-20	08-Aug-20	19-Jul-20	08-Aug-20	0	[Red bar from Jul-20 to Aug-20]																																																			
Effluent Pumping Station No. 1																																																											
AS112200	Prepare & Submit Wiring Dwgs, Cable Schedule & Design Cal.	60	24-Mar-20	22-May-20	25-Mar-20	23-May-20	1	[Red bar from Mar-20 to May-20]																																																			
AS112210	Review & Comment on Wiring Dwgs, Cable Schedule & Design Cal.	21	23-May-20	12-Jun-20	24-May-20	13-Jun-20	1	[Green bar from May-20 to Jun-20]																																																			
AS112220	Revise & Re-submit Wiring Dwgs, Cable Schedule & Design Cal.	14	13-Jun-20	26-Jun-20	14-Jun-20	27-Jun-20	1	[Green bar from Jun-20 to Jun-20]																																																			
AS112230	Review & Accept of Wiring Dwgs, Cable Schedule & Design Cal.	21	27-Jun-20	17-Jul-20	28-Jun-20	18-Jul-20	1	[Green bar from Jun-20 to Jul-20]																																																			
AS112300	Prepare & Submit the Schedule, Design Cal. & Fixing Details of Equipment	60	15-Apr-20	13-Jun-20	15-Apr-20	13-Jun-20	0	[Red bar from Apr-20 to Jun-20]																																																			
AS112310	Review & Comment on the Schedule, Design Cal. & Fixing Details of Equipment	21	14-Jun-20	04-Jul-20	14-Jun-20	04-Jul-20	0	[Green bar from Jun-20 to Jul-20]																																																			
AS112320	Revise & Re-submit the Schedule, Design Cal. & Fixing Details of Equipment	14	05-Jul-20	18-Jul-20	05-Jul-20	18-Jul-20	0	[Red bar from Jul-20 to Jul-20]																																																			
AS112330	Review & Accept of the Schedule, Design Cal. & Fixing Details of Equipment	21	19-Jul-20	08-Aug-20	19-Jul-20	08-Aug-20	0	[Red bar from Jul-20 to Aug-20]																																																			
Building Services																																																											
AS113100	Prepare & Submit BS Works Design & Dwgs UV System No.1 & Effluent Pumping Station No.1	90	15-Mar-20	12-Jun-20	16-Mar-20	13-Jun-20	1	[Green bar from Mar-20 to Jun-20]																																																			



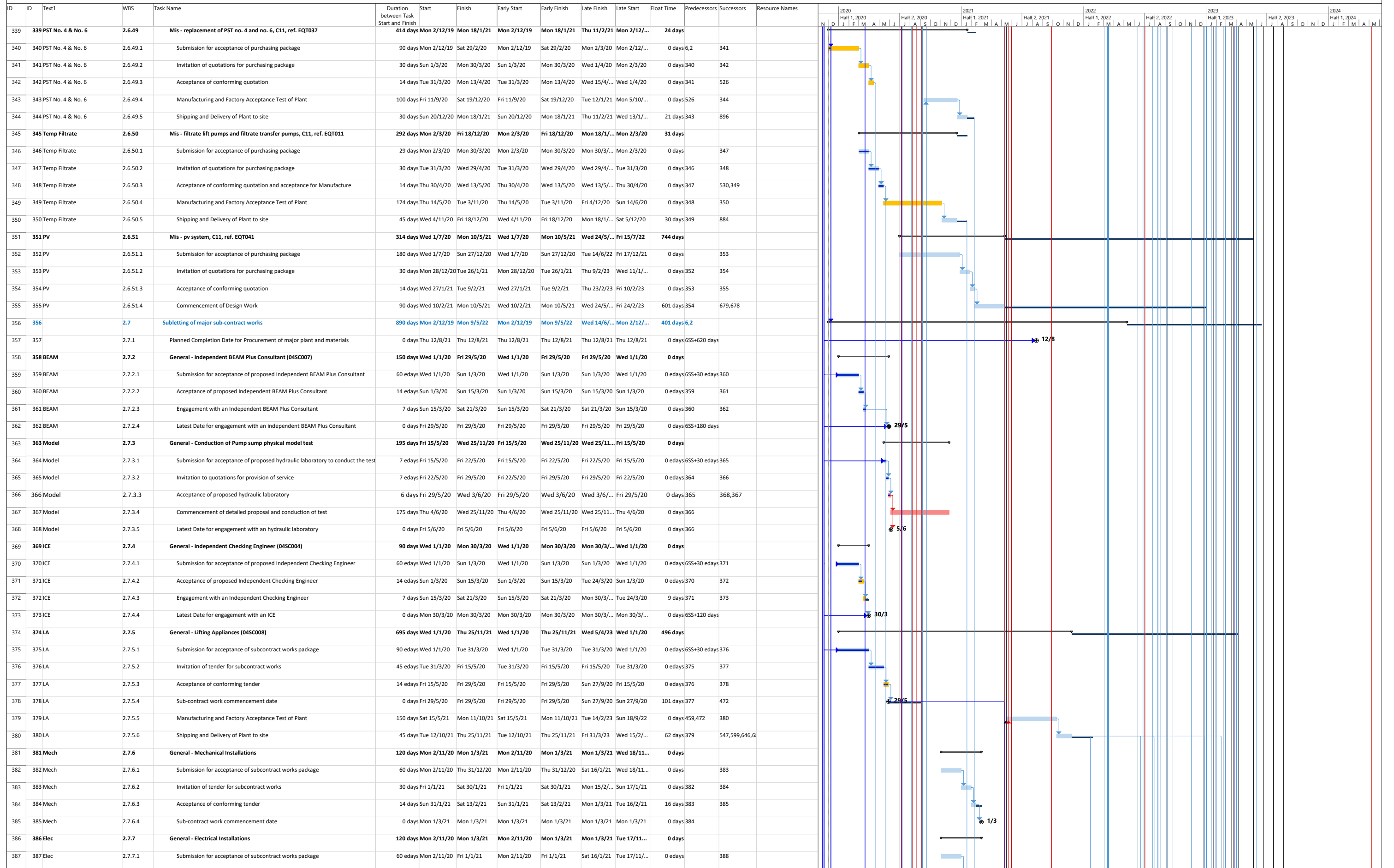
File Name: DE/2018/03 R3-1
 Layout: DE1803 (R3) - WBS
 TASK filter: All Activities

- Remaining Work
- Critical Activity
- ◆ Milestone

Contract No. DE/2018/03
Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1
Sidestream Treatment Facilities and E&M Works for Sluge Treatment Faciliteis
Master Programme

Date	Revision	Checked	Approved
24-Oct-19	Rev.0	AI	KM
10-Feb-20	Rev.1	AI	KM
21-Apr-20	Rev.2	AI	KM
09-Jun-20	Rev.3	LT	KM

ID	ID	Text1	WBS	Task Name	Duration between Task Start and Finish	Start	Finish	Early Start	Early Finish	Late Finish	Late Start	Floater 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	6,2	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	55755+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	556	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	556	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	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	54755+30 day	57255+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	547,56755+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	56255+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	56255+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	55755+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: 13/3/24 to 26/3/24]																												
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: 27/3/24 to 9/4/24]																												
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: 3/4/23 to 1/6/23]																												
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: 3/4/23 to 1/6/23]																												
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: 19/9/23 to 17/11/23]																												
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: 19/9/23 to 17/11/23]																												
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: 14/7/20 to 2/1/24]																												
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: 14/7/20 to 11/10/20]																												
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: 12/10/20 to 1/10/21]																											
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: 15/9/23 to 15/9/23]																												
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: 19/9/23 to 2/11/23]																												
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: 3/11/23 to 17/12/23]																												
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: 2/1/24 to 2/1/24]																												
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: 17/1/24 to 7/4/24]																												
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: 17/1/24 to 23/1/24]																												
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: 24/1/24 to 3/3/24]																												
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: 4/3/24 to 7/4/24]																												
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: 10/4/24 to 14/4/24]																												
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: 2/12/19 to 22/9/21]																												
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: 22/9/21 to 22/9/21]																												
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: 29/7/20 to 29/7/20]																												
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: 9/6/21 to 9/6/21]																												
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: 2/12/19 to 2/12/19]																												
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: 27/4/20 to 7/2/21]																												
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: 27/4/20 to 10/5/20]																												
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: 11/5/20 to 31/5/20]																												
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: 1/6/20 to 21/6/20]																												
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: 22/6/20 to 18/12/20]																												
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: 18/1/21 to 24/1/21]																												
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: 18/1/21 to 24/1/21]																												
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: 18/1/21 to 24/1/21]																												
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: 19/12/20 to 24/1/21]																												
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: 19/12/20 to 17/1/21]																												
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: 18/1/21 to 24/1/21]																												
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: 19/12/20 to 1/1/21]																												
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: 26/12/20 to 15/1/21]																												
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: 26/12/20 to 15/1/21]																												
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: 26/12/20 to 15/1/21]																												
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: 25/1/21 to 31/1/21]																												
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: 1/2/21 to 7/2/21]																												
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: 9/1/21 to 29/1/21]																												
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: 8/2/21 to 8/2/21]																												
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: 2/12/19 to 2/12/19]																												
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: 8/2/21 to 8/2/21]																												
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: 9/2/21 to 5/6/21]																												
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: 9/2/21 to 18/2/21]																												
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: 19/2/21 to 5/5/21]																												
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: 19/2/21 to 25/2/21]																												

