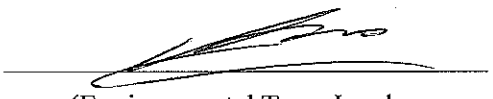
Drainage Services Department

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

Monthly EM&A Report
February 2021

(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

Ref.: DSDSWHS1EM00_0_0100E.21.docx

16 March 2021

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 February 2021

Reference is made to the Environmental Team's submission of Monthly EM&A Report for February 2021 (Version 1) certified by the ET Leader and provided to us via e-mail on 16 March 2021.

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.

The ET Leader is reminded that it is the ET's responsibility to ensure the report be timely submitted to the Director of Environmental Protection as per Conditions 3.4 of the 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	Attn.: Ms Konica Cheung	(By Fax: 3104 6420)
Cinotech	Attn.: Mr K. S. Lee	(By Fax: 3107 1388)

Q:\Projects\DSDSWHS1EM00\02 Proj_Mgt\02 Corr\DSDSWHS1EM00_0_0100E.21.docx

Ramboll Hong Kong Limited 英環香港有限公司
21/F, BEA Harbour View Centre, 56 Gloucester Road, Wanchai, Hong Kong Tel: 852.3465 2888 Fax: 852.3465 2899
www.Ramboll.com

TABLE OF CONTENTS

Page

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

EXECUTIVE SUMMARY

Introduction

1. This is the 14th 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 February 2021.

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	• ELS and excavation works • Sheet pile installation • RC works • Strut installation and blinding layer • Pipe jacking work
DC/2018/07	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - Civil Works for Sewage Treatment Facilities	• ELS and construction of inlet reception chamber • Trench excavation • Road and drainage works • Diversion of inlet works • Process pipe of CHR and CHS • Pre-drilling work and foundation work • Pre-bored H piles • Cable diversion works • Alternation of existing powerhouse • Demolition work of existing main facilities
DE/2018/03	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - Sidestream Treatment Facilities and E&M Works for Sludge Treatment Facilities	• Pre-drill works at Portion B-1
DE/2018/04	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - E&M Works for Sewage Treatment Facilities	• Construction of temporary filtrate equalisation tank. • Installation of temporary primary sludge thickener and its accessories • Dismantle and removal of E&M equipment of the existing primary sedimentation tank no. 4

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.

Waste Management
- Chemicals were stored in drip trays properly.

Summary of Exceedances, Investigation and Follow-up

4. Exceedance of Action/Limit levels during the reporting month (February 2021) 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 1 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	1	Significant odour nuisance was suspected to be emitted from the construction activities of SWHEPP	• Ensured only PMEs with valid NRMM label were used on-site • Conducted regular visual checking against emission quality of exhaust pipe of equipment by using the Ringlemann Chart • Used ULSD for diesel-powered equipment • Provided water spraying and water sprinklers system for haul road access and demolition works • Used battery powered solution to provide power to the tower crane • Provided cover for all rubbish bins on-site • Separated general refuse from construction waste	Complaint Investigation Report (CIR) was submitted in March 2021
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	• ELS and excavation works • Sheet pile installation • RC works • Strut installation and blinding layer • Pipe jacking work
DC/2018/07	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - Civil Works for Sewage Treatment Facilities	• ELS and construction of inlet reception chamber • Trench excavation • Road and drainage works • Diversion of inlet works • Process pipe of CHR and CHS • Pre-drilling work and foundation work • Cable diversion works • Demolition work of existing main facilities • Piling load test • Pre-bored H piles • Alternation of existing powerhouse
DE/2018/03	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - Sidestream Treatment Facilities and E&M Works for Sludge Treatment Facilities	• Socket H pilling
DE/2018/04	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - E&M Works for Sewage Treatment Facilities	• Construction of temporary filtrate equalisation tank • Installation of temporary primary sludge thickener and its accessories • Dismantle and removal of E&M equipment of the existing primary sedimentation tank no. 4 and 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 93,000m^2/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 190,000m^3/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 14th Monthly EM&A Report which summarises the impact monitoring results and audit findings for the EM&A programme during the reporting period in February 2021.

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)	Ms. Juliet Ting	6826 7319
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	• ELS and excavation works • Sheet pile installation • RC works • Strut installation and blinding layer • Pipe jacking work
DC/2018/07	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - Civil Works for Sewage Treatment Facilities	• ELS and construction of inlet reception chamber • Trench excavation • Road and drainage works • Diversion of inlet works • Process pipe of CHR and CHS • Pre-drilling work and foundation work • Pre-bored H piles • Cable diversion works • Alternation of existing powerhouse • Demolition work of existing main facilities

Contract No.	Contract Title	Site Activities
DE/2018/03	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - Sidestream Treatment Facilities and E&M Works for Sludge Treatment Facilities	• Pre-drill works at Portion B-1
DE/2018/04	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - E&M Works for Sewage Treatment Facilities	• Construction of temporary filtrate equalisation tank. • Installation of temporary primary sludge thickener and its accessories • Dismantle and removal of E&M equipment of the existing primary sedimentation tank no. 4

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 February 2021.

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	N/A	Valid
DC/2018/06	449211 (WM1)	23 Sep 2019	N/A	Valid
DC/2018/07	449210	23 Sep 2019	N/A	Valid
DE/2018/03	460065 (Sidestream)	16 Sep 2020	N/A	Valid
DE/2018/04	460181	Notified EPD on 17 Sep 2020	N/A	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
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
DE/2018/03	WT00037220-2020	20 Jan 2021	31 Jan 2026	Valid
Construction Noise Permit (Use of Powered Mechanical Equipment at Portion A, B and C)				
DC/2018/06 & DC/2018/07	GW-RN0753-20	30 Oct 2020	11 Apr 2021	Valid
Admission Ticket for Disposal of Special Waste				
DC/2018/07	16113	17 Feb 2021	16 Jun 2021	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 m^3/min. and 1.4 m^3/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 (High Precision Chemical Testing Limited) 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 ±3°C; the relative humidity (RH) should be < 50% and not vary by more than ±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), µg/m^3	Reporting Month (February 2021), µg/m^3
AM1 - Wai Loi Tsuen	N/A	N/A(1)	26.0 - 66.0
AM2 - Fu Tei Au	FLN-E28	255	22.0 - 63.8

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), µg/m^3	Reporting Month (February 2021), µg/m^3
AM1a - Site Boundary of the Shek Wu Hui STW (East)	N/A(1)	40.8 - 72.6
AM2a - Site Boundary of the Shek Wu Hui STW (North)	N/A(1)	40.7 - 74.9

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) L_{90}(30 min.) dB(A) L_{eq}(30 min.) dB(A)	Free Field
NM2					Free Field
NM3					Free Field

Monitoring Equipment

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

Table 3.3 Noise Monitoring Equipment

Equipment	Model and Make	Quantity
Integrating Sound Level Meter	BSWA 308	3
Calibrator	ST-120	2

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 (February 2021), Leq (30min) dB(A)
NM1 - Wai Loi Tsuen	N/A	N/A(1)	54.6 – 55.7
NM2 - Fu Tei Au	N/A	N/A(1)	53.2 – 57.9
NM3 – Man Kok Village	FN-18	66-75	56.6 – 59.5

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

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

4 ECOLOGY

Monitoring Requirements

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

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

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

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

Monitoring Locations

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

Table 4.2 Ecological Monitoring Stations

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

Monitoring Parameters, Frequency and Duration

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

Monitoring Methodology

4.5 Transect survey was undertaken along the concerned rivers (Ng Tung River, Sheung Yue River and Shek Sheung River) adjacent to proposed construction activities. As the sensitive receivers (large waterbirds) are easily visible and the surveyor has used auxiliary equipment such as camera(s) and binoculars (magnification 7-10x). The transect route only follows one bank of these rivers.

4.6 At point count locations, surveyors identified and recorded bird species which were seen or heard along the river channel. For each point count, surveyors quantitatively recorded all species seen and heard for the duration of five minutes up to the distance where birds were still detectable. All avifauna along the walk transect were recorded. Noticeable behaviours (e.g. breeding behaviours such as nesting and presence of recently fledged juveniles, roosting and feeding activities, etc.) were recorded as well.

4.7 Ornithological nomenclature used in report should follow *The Avifauna of Hong Kong* (Carey et al. (2001)), *The Birds of Hong Kong and South China* (Viney et al. (2005)) and the most recent updated list from other sources (e.g. Hong Kong Bird Watching Society).

4.8 Weather conditions, tidal information at the time of the survey and other noticeable activities occurring within or in the vicinity of the survey areas (e.g. ongoing routine drainage channel maintenance works and other human activities that could create disturbances to birds) were recorded.

Analytical Methodology

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

Table 4.3 Representative Waterbirds

Species Name	Common Name	Chinese Name
Egretta garzetta	Little Egret	小白鷺
Ardea cinerea	Grey Heron	蒼鷺
Ardeola bacchus	Chinese Pond Heron	池鷺
Phalacrocorax carbo	Great Cormorant	普通鸕鷀
Ardea alba	Great Egret	大白鷺
Bubulcus coromandus	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	34	536
Waterbirds	10	224

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
Egretta garzetta	Little Egret	小白鷺	56
Ardea cinerea	Grey Heron	蒼鷺	52
Ardeola bacchus	Chinese Pond Heron	池鷺	32
Phalacrocorax carbo	Great Cormorant	普通鸕鷀	12
Ardea alba	Great Egret	大白鷺	21
Bubulcus coromandus	Eastern Cattle Egret	牛背鷺	47

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% (-2.353)	99% (-4.541)
Abundance	Monthly	2.152	✓	✓
	Seasonal	-2.383	✗	✓

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% (-2.353)	99% (-4.541)	Seasonal	95% (-2.353)	99% (-4.541)	
Little Egret	1.939	✓	✓	-0.523	✓	✓	✓
Grey Heron	-3.012	✗	✓	-0.112	✓	✓	✓
Chinese Pond Heron	-0.158	✓	✓	-0.778	✓	✓	✓
Great Cormorant	-13.778	✗	✗	-10.112	✗	✗	Limit Level
Great Egret	1.192	✓	✓	-0.092	✓	✓	✓
Eastern Cattle Egret	4.559	✓	✓	3.706	✓	✓	✓

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.

4.15 Zero (0) Action Level and one (1) Limit Level was triggered for ecological monitoring in the reporting month.

4.16 The exceedance of Great Cormorant is considered as non-project-related as February 2021 was much warmer and sunnier than the normal. To further elaborate, the monthly mean maximum temperature of 23.5°C, monthly mean temperature of 19.8°C and monthly mean minimum temperature of 17.5°C were 4.1°C, 2.7°C and 2.2°C above their corresponding normals (or 4.6°C, 3.0°C and 2.5°C above their corresponding 1981-2010 normals) and respectively the second, third and fourth highest on record for February. It is assumed that such weather condition had encourage migratory bird such as Great Cormorant to migrate earlier than normal. In addition, Grey Heron, a winter visitor, had also experienced similar decline in the reporting month.

4.17 Site observation in the reporting month shows that construction activities are similar to previous months, no extremely loud noises was heard during the monitoring and data from other representative waterbirds indicate no overall decline in other resident birds. Mitigation such as noise barrier in green and hoarding in green had been erected around the construction site properly.

4.18 The monitoring work will continue next month to evaluate any construction impact on waterbirds.

Observations

4.19 Waterbird behaviour observed during ecological monitoring are listed below:

- Flying
- Foraging
- Soaring
- Resting

4.20 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)	N/A	Fishing and jaywalking
T2 (PC3, PC4)	Excavation and crane	N/A
PC5	Excavation and crane	N/A
T3 (PC6, PC7)	N/A	Jaywalking

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 for Contract No. DC/2018/06 and DC/2018/07 were conducted on 2, 10, 18 & 23 February 2021 in the reporting month, whereas that for Contract No. DE/2018/03 and DE/2018/04 were conducted on 2, 9, 18 & 23 February 2021 in the reporting month. Joint site inspection with the representative of IEC was conducted on 23 February 2021. 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 - 8.4**. 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
Water Quality	N/A	There was no observation in the reporting period.	N/A
Air Quality	N/A	There was no observation in the reporting period.	N/A
Noise	N/A	There was no observation in the reporting period.	N/A
Waste / Chemical Management	N/A	There was no observation in the reporting period.	N/A
Ecology and Fisheries	N/A	There was no observation in the reporting period.	N/A
Visual and Landscape	N/A	There was no observation in the reporting period.	N/A
Permits /Licences	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
Water Quality	N/A	There was no observation in the reporting period.	N/A
Air Quality	N/A	There was no observation in the reporting period.	N/A
Noise	N/A	There was no observation in the reporting period.	N/A
Waste / Chemical Management	N/A	There was no observation in the reporting period.	N/A
Ecology and Fisheries	N/A	There was no observation in the reporting period.	N/A
Visual and Landscape	N/A	There was no observation in the reporting period.	N/A
Permits /Licences	N/A	There was no observation in the reporting period.	N/A

Table 8.3 Observations and Recommendations of Site Audit of Contract No. DE/2018/03

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

Table 8.4 Observations and Recommendations of Site Audit of Contract No. DE/2018/04

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	N/A	There was no observation in the reporting period.	N/A
Air Quality	N/A	There was no observation in the reporting period.	N/A
Noise	N/A	There was no observation in the reporting period.	N/A
Waste / Chemical Management	N/A	There was no observation in the reporting period.	N/A
Ecology and Fisheries	N/A	There was no observation in the reporting period.	N/A
Visual and Landscape	N/A	There was no observation in the reporting period.	N/A
Permits /Licences	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 1 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 1 environmental complaint regarding odour emission from SWHEPP was received in the reporting month. No environmental warning, notifications of summons and successful prosecutions were received in the reporting month.

9.2 The summary of environmental complaint, warning, summon and notification of successful prosecution for the Project is presented in **Appendix O**.

Summary of Exceedance

9.3 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	• ELS and excavation works • Sheet pile installation • RC works • Strut installation and blinding layer • Pipe jacking work
DC/2018/07	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - Civil Works for Sewage Treatment Facilities	• ELS and construction of inlet reception chamber • Trench excavation • Road and drainage works • Diversion of inlet works • Process pipe of CHR and CHS • Pre-drilling work and foundation work • Cable diversion works • Demolition work of existing main facilities • Piling load test • Pre-bored H piles • Alternation of existing powerhouse
DE/2018/03	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - Sidestream Treatment Facilities and E&M Works for Sludge Treatment Facilities	• Socket H pilling
DE/2018/04	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - E&M Works for Sewage Treatment Facilities	• Construction of temporary filtrate equalisation tank • Installation of temporary primary sludge thickener and its accessories • Dismantle and removal of E&M equipment of the existing primary sedimentation tank no. 4 and 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 14th 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 Level and 1 Limit Level exceedance was triggered for all ecological monitoring in the reporting month. The decline of Great Cormorant was considered as non-project-related.

Site Audit

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

Complaint, Notification of Summons and Successful Prosecution

11.6 1 environmental complaint was received in the reporting month. No notifications of summons and successful prosecutions were received in the reporting month.

Recommendations

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

Air Quality

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

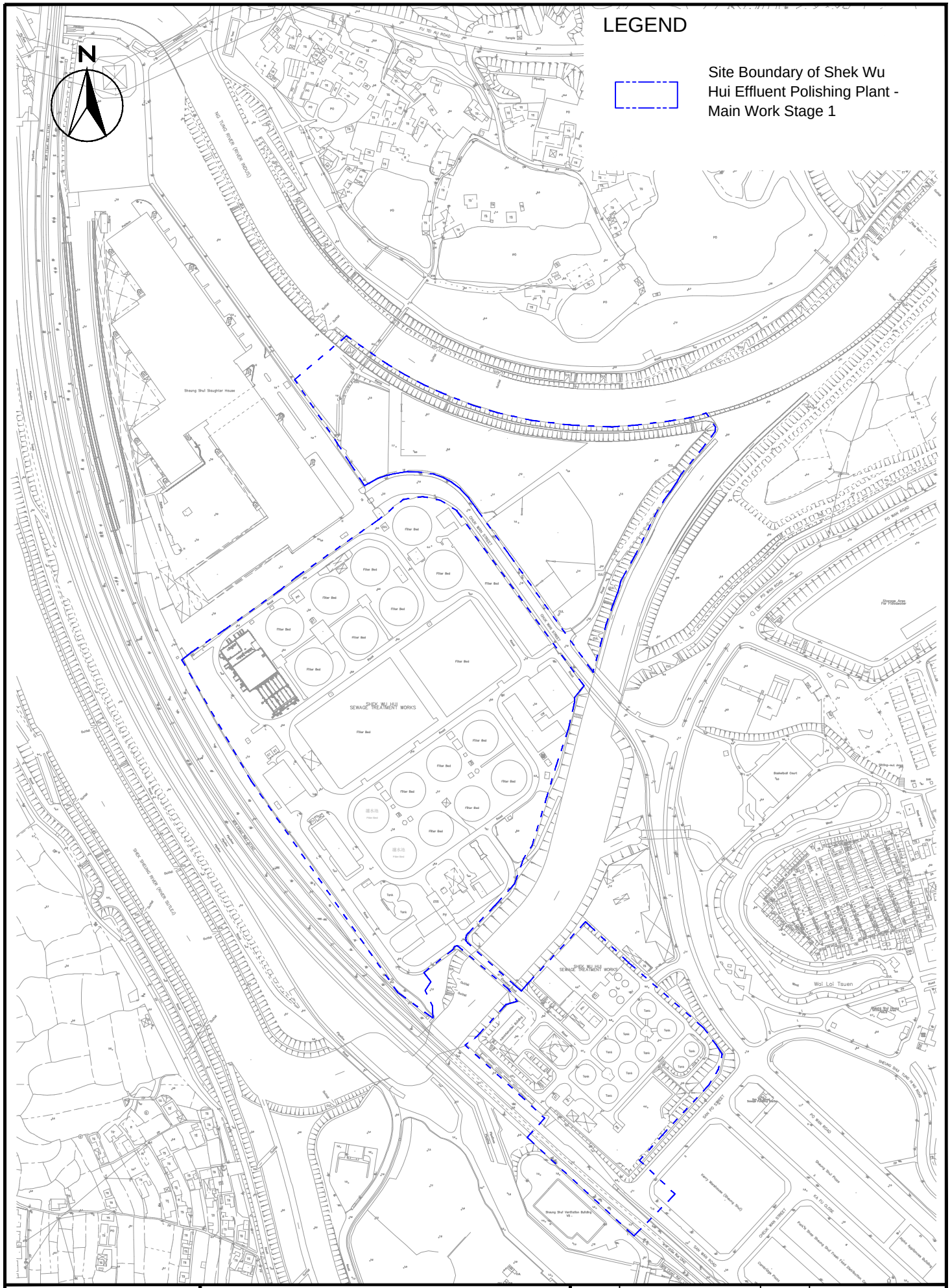
Water Quality

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

Waste Management

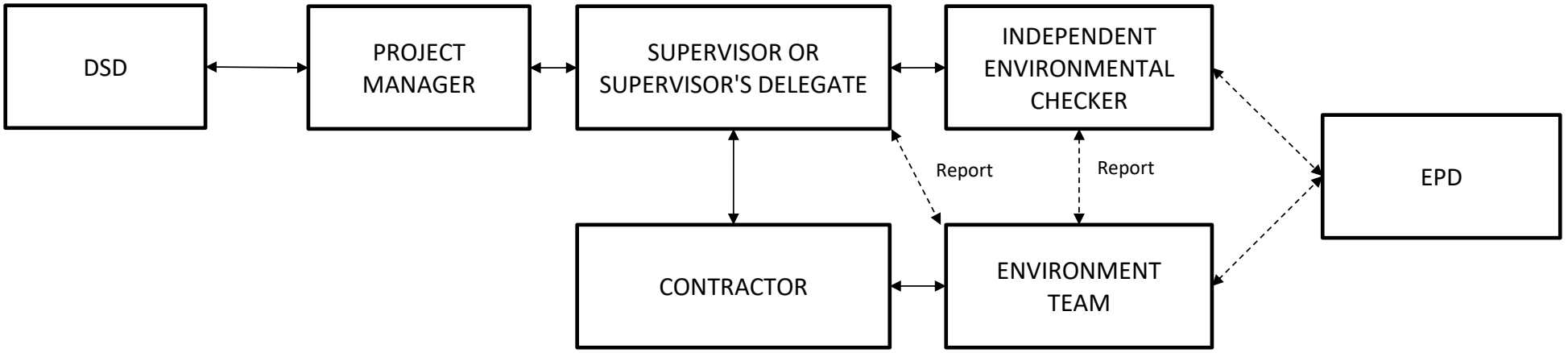
- General refuse and construction waste accumulation should be avoided.
- Chemicals should be stored in drip trays properly.

FIGURES



Cinotech Consultants Limited	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: -

F:/Project_drawings

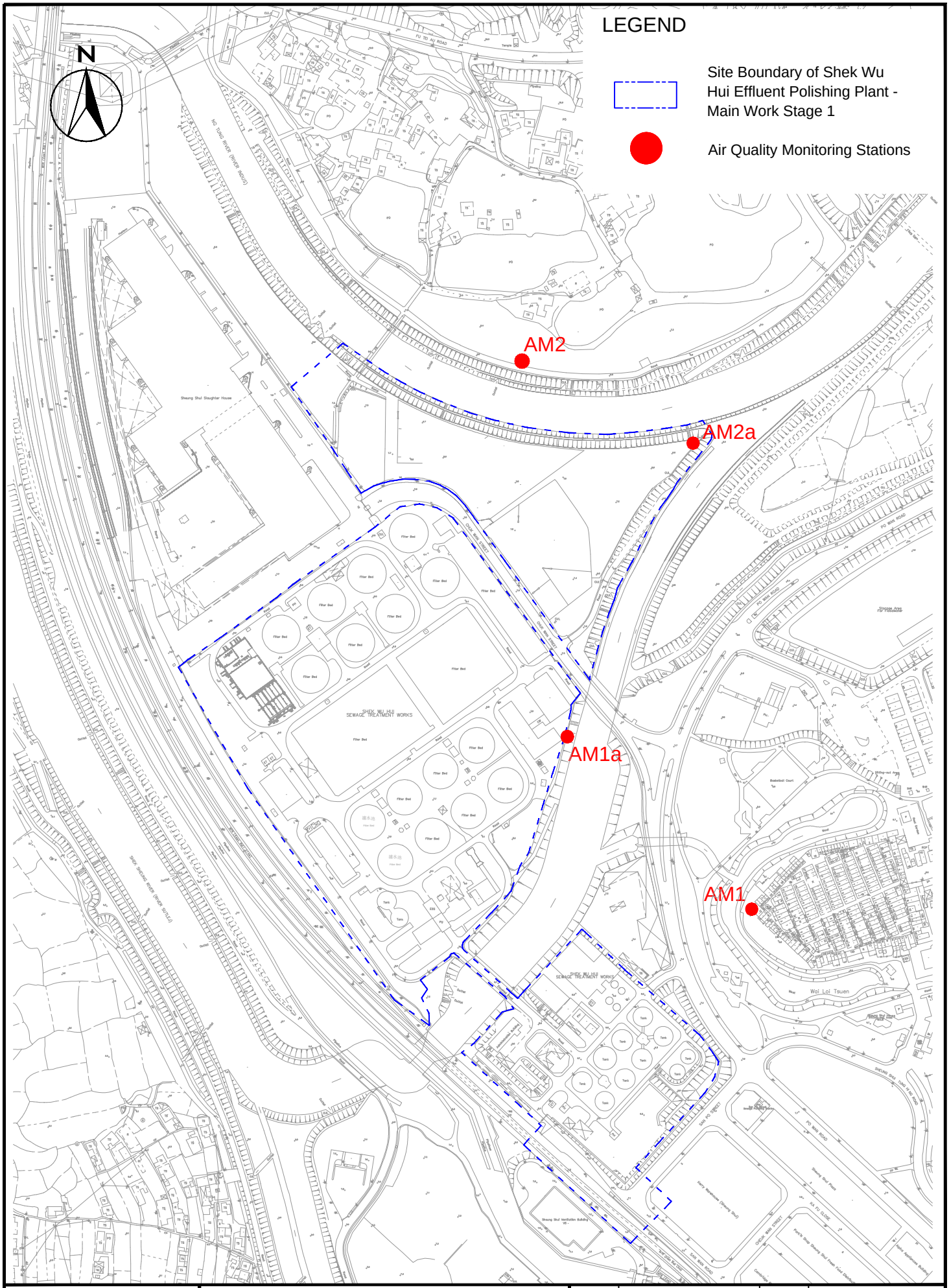


CINOTECH

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

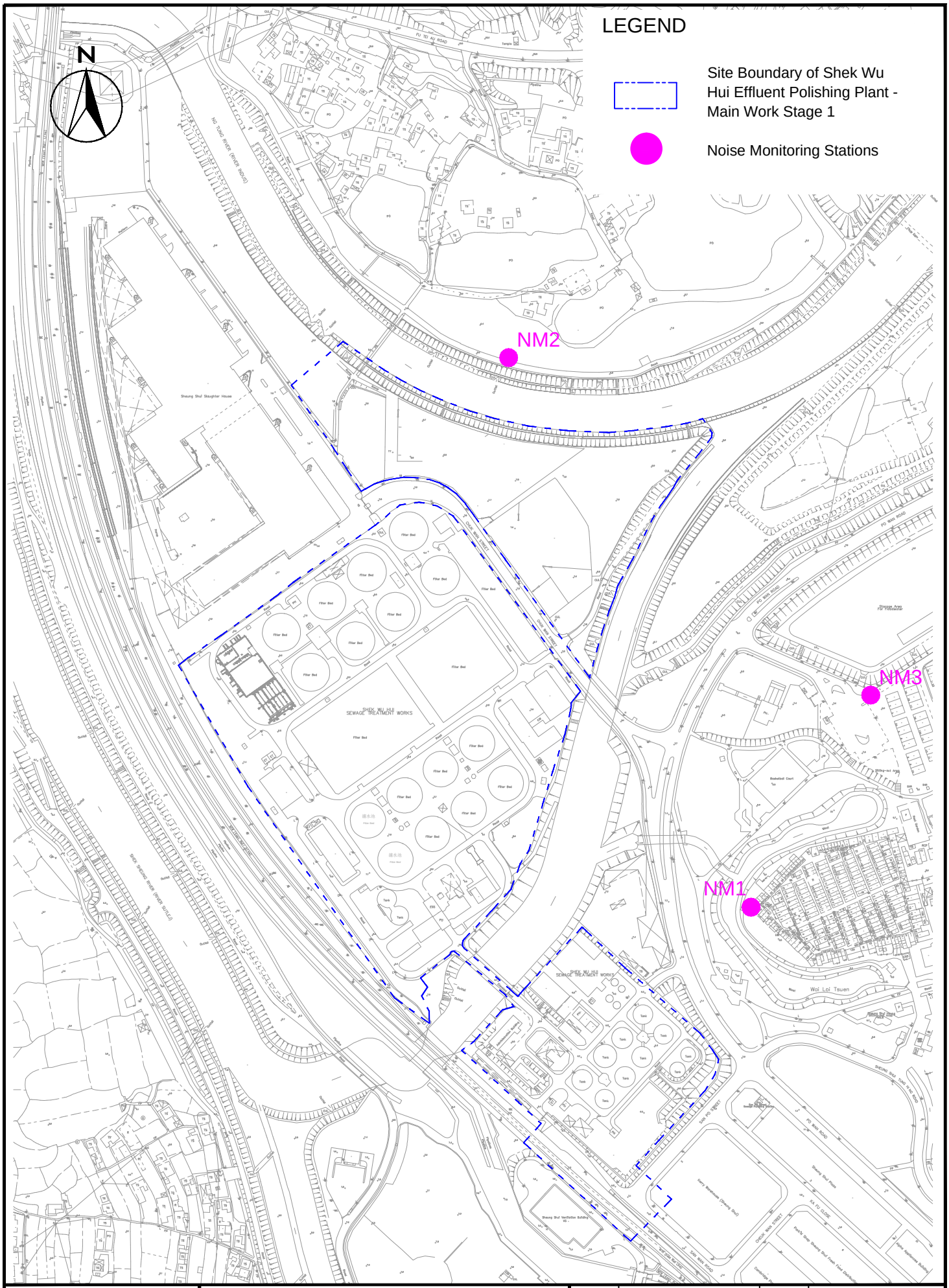
Project Organisation For Environmental Monitoring and Audit

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



CINOTECH Cinotech Consultants Limited	Agreement No. SPW07/2019 Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 Location of Air Quality Monitoring Stations	SCALE: 1:4000@A4	DATE: OCT 2019
		CHECK: JM	DRAWN: SY
		JOB No.: MA19019	FIGURE NO.: 2 / REV: -

F:/Project_drawings



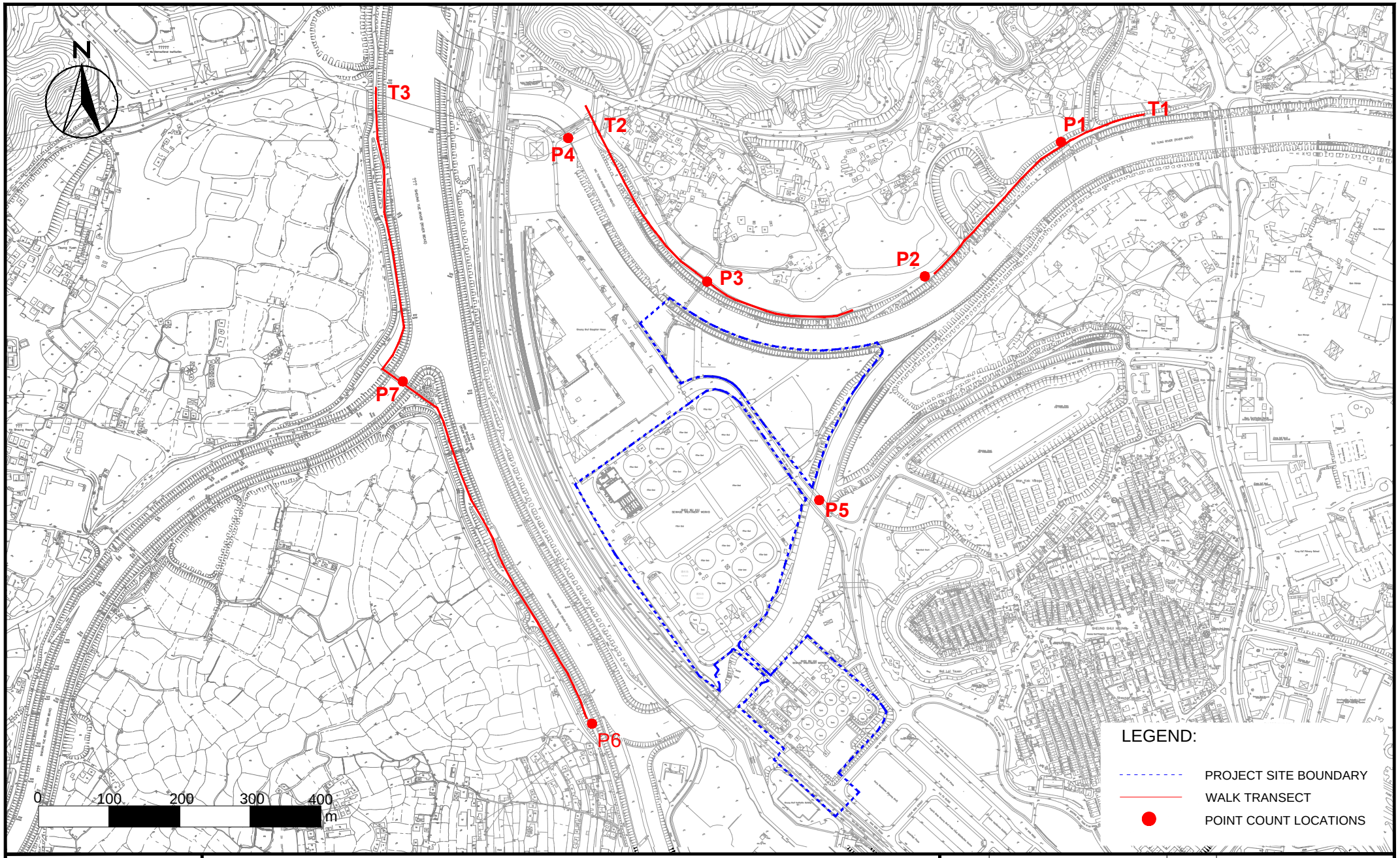
CINOTECH
Cinotech Consultants Limited

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

Location of Noise Monitoring Stations

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

F:/Project_drawings



CINOTECH
Cinotech Consultants Limited

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, µg/m^3	Limit Level, µg/m^3
AM1	320	500
AM2	322	

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

Location	Action Level, µg/m^3	Limit Level, µg/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 (February 2021)

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

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 (March 2021)

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

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-Dec-20
Manufacturer:	Sibata Scientific Technology LTD.	Validity of Calibration Record	5-Feb-21
Model No.:	LD-5R		
Serial No.:	8Y2374		
Equipment No.:	SA-01-04	Sensitivity	0.001 mg/m3
High Volume Sampler No.:	A-01-03	Before Sensitivity Adjustment	652
Tisch Calibration Orifice No.:	3607	After Sensitivity Adjustment	652

Calibration of 1 hr TSP		
Calibration Point	**Laser Dust Monitor**	**HVS**
	Mass Concentration (µg/m3) **X-axis**	Mass concentration (µg/m^3) **Y-axis**
1	50.0	88.4
2	46.0	84.2
3	42.0	79.3
Average	**46.0**	**84.0**

By Linear Regression of Y on X

Slope , mw = **1.1375** **Intercept, bw =** **31.6417**

Correlation coefficient* = **0.9990**

Set Correlation Factor	
Particaulate Concentration by High Volume Sampler (µg/m^3)	84.0
Particaulate Concentration by Dust Meter (µg/m^3)	46.0
Measureing time, (min)	60.0
Set Correlation Factor , SCF **SCF = [K=High Volume Sampler / Dust Meter, (µg/m3)]**	**1.8**

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 (HPCT Litimed)

Calibrated by: _____ Approved by: _____

. Wong Shing Kwai 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-Feb-21

Manufacturer: Sibata Scientific Technology LTD.

Validity of Calibration Record 5-Apr-21

Model No.: LD-5R

Serial No.: 8Y2374

Equipment No.: SA-01-04

Sensitivity 0.001 mg/m3

High Volume Sampler No.: A-01-03

Before Sensitivity Adjustment 652

Tisch Calibration Orifice No.: 3607

After Sensitivity Adjustment 652

Calibration of 1 hr TSP		
Calibration Point	**Laser Dust Monitor**	**HVS**
	Mass Concentration (μg/m3) **X-axis**	Mass concentration (μg/m^3) **Y-axis**
1	52.0	107.0
2	47.0	101.0
3	43.0	95.0
Average	**47.3**	**101.0**

By Linear Regression of Y on X

Slope , mw = **1.3279** **Intercept, bw =** **38.1475**

Correlation coefficient* = **0.9979**

Set Correlation Factor	
Particaulate Concentration by High Volume Sampler (μg/m^3)	101.0
Particaulate Concentration by Dust Meter (μg/m^3)	47.3
Measureing time, (min)	60.0

Set Correlation Factor , SCF

SCF = [K=High Volume Sampler / Dust Meter, (μg/m3)] **2.1**

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 (HPCT 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-Dec-20
Manufacturer: Sibata Scientific Technology LTD.
Validity of Calibration Record 5-Feb-21
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 (µg/m3) **X-axis**	Mass concentration (µg/m^3) **Y-axis**
1	48.0	88.4
2	43.0	84.2
3	38.0	79.3
Average	**43.0**	**84.0**

By Linear Regression of Y on X

Slope , mw = **0.9100** **Intercept, bw =** **44.8367**

Correlation coefficient* = **0.9990**

Set Correlation Factor	
Particaulate Concentration by High Volume Sampler (µg/m^3)	84.0
Particaulate Concentration by Dust Meter (µg/m^3)	43.0
Measureing time, (min)	60.0
Set Correlation Factor , SCF **SCF = [K=High Volume Sampler / Dust Meter, (µg/m3)]**	**2.0**

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 (HPCT 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-Feb-21

Manufacturer: Sibata Scientific Technology LTD. — Validity of Calibration Record 5-Apr-21

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 (µg/m3) **X-axis**	Mass concentration (µg/m^3) **Y-axis**
1	51.0	107.0
2	45.0	101.0
3	40.0	95.0
Average	**45.3**	**101.0**

By Linear Regression of Y on X

Slope , mw = **1.0879** **Intercept, bw =** **51.6813**

Correlation coefficient* = **0.9986**

Set Correlation Factor	
Particaulate Concentration by High Volume Sampler (µg/m^3)	101.0
Particaulate Concentration by Dust Meter (µg/m^3)	45.3
Measureing time, (min)	60.0

Set Correlation Factor , SCF

SCF = [K=High Volume Sampler / Dust Meter, (µg/m3)] **2.2**

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 (HPCT 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-Dec-20
Manufacturer:	Sibata Scientific Technology LTD.	Validity of Calibration Record	5-Feb-21
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 (µg/m3) **X-axis**	Mass concentration (µg/m^3) **Y-axis**
1	51.0	88.4
2	47.0	84.2
3	41.0	79.3
Average	**46.3**	**84.0**

By Linear Regression of Y on X

Slope , mw = **0.9026** **Intercept, bw =** **42.1447**

Correlation coefficient* = **0.9975**

Set Correlation Factor	
Particaulate Concentration by High Volume Sampler (µg/m^3)	84.0
Particaulate Concentration by Dust Meter (µg/m^3)	46.3
Measureing time, (min)	60.0
Set Correlation Factor , SCF **SCF = [K=High Volume Sampler / Dust Meter, (µg/m3)]**	**1.8**

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 (HPCT 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-Feb-21

Manufacturer: Sibata Scientific Technology LTD. — Validity of Calibration Record 5-Apr-21

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 (µg/m3) **X-axis**	Mass concentration (µg/m^3) **Y-axis**
1	52.0	107.0
2	47.0	101.0
3	42.0	95.0
Average	**47.0**	**101.0**

By Linear Regression of Y on X

Slope , mw = **1.2000** **Intercept, bw =** **44.6000**

Correlation coefficient* = **1.0000**

Set Correlation Factor	
Particaulate Concentration by High Volume Sampler (µg/m^3)	101.0
Particaulate Concentration by Dust Meter (µg/m^3)	47.0
Measureing time, (min)	60.0

Set Correlation Factor , SCF

SCF = [K=High Volume Sampler / Dust Meter, (µg/m3)] **2.1**

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 (HPCT Litimed)

Calibrated by: Wong Shing Kwai

Approved by: Henry Leung

TISCH Environmental

RECALIBRATION DUE DATE:
January 17, 2021

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)	$\sqrt{\Delta H\left(Ta/Pa\right)}$ (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=	ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta)	**Va=**	ΔVol((Pa-ΔP)/Pa)
Qstd=	Vstd/ΔTime	**Qa=**	Va/ΔTime

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= $1/m\left(\left(\sqrt{\Delta H\left(Ta/Pa\right)}\right)-b\right)$

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

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

www.tisch-env.com
TOLL FREE: (877)263-7610
FAX: (513)467-9009

TISCH Environmental

RECALIBRATION DUE DATE:
January 11, 2022

Certificate of Calibration

Calibration Certification Information				
Cal. Date:	January 11, 2021	**Rootsmeter S/N:** 438320	**Ta:** 297	°K
Operator:	Jim Tisch		**Pa:** 750.1	mm Hg
Calibration Model #:	TE-5025A	**Calibrator S/N:** **3864**		

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4470	3.2	2.00
2	3	4	1	1.0210	6.4	4.00
3	5	6	1	0.9140	8.0	5.00
4	7	8	1	0.8670	8.8	5.50
5	9	10	1	0.7140	12.9	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)	$\sqrt{\Delta H\left(Ta/Pa\right)}$ (y-axis)
0.9860	0.6814	1.4073	0.9957	0.6881	0.8899
0.9818	0.9616	1.9902	0.9915	0.9711	1.2585
0.9797	1.0719	2.2251	0.9893	1.0824	1.4071
0.9786	1.1288	2.3337	0.9883	1.1399	1.4757
0.9732	1.3630	2.8146	0.9828	1.3765	1.7798
QSTD	**m=**	**2.06566**	**QA**	**m=**	**1.29348**
	b=	**0.00315**		**b=**	**0.00199**
	r=	**0.99996**		**r=**	**0.99996**

Calculations

Vstd=	ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta)	**Va=**	ΔVol((Pa-ΔP)/Pa)
Qstd=	Vstd/ΔTime	**Qa=**	Va/ΔTime

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= $1/m\left(\left(\sqrt{\Delta H\left(Ta/Pa\right)}\right)-b\right)$

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

isch Environmental, Inc.
45 South Miami Avenue
illage of Cleves, OH 45002

www.tisch-env.com
TOLL FREE: (877)263-7610
FAX: (513)467-9009

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

File No. MA19019/17/0008

Project No. AM1a - Site boundary of the Shek Wu Hui STW (East)

Date: 6-Jan-21 Next Due Date: 6-Mar-21 Operator: SK

Equipment No.: A-01-17 Model No.: GS2310 Serial No. 3460

Ambient Condition			
Temperature, Ta (K)	290.1	Pressure, Pa (mmHg)	764.9

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

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)]$^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	[ΔW x (Pa/760) x (298/Ta)]$^{1/2}$ **Y-axis**
1	13.0	3.67	62.39	9.5	3.13
2	10.4	3.28	55.85	7.1	2.71
3	8.2	2.91	49.65	5.4	2.36
4	5.3	2.34	40.00	3.3	1.85
5	2.8	1.70	29.20	1.8	1.36

By Linear Regression of Y on X

Slope , mw = 0.0531 **Intercept, bw = -0.2346**

Correlation coefficient* = 0.9976

*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 x Qstd + bw = [ΔW x (Pa/760) x (298/Ta)]$^{1/2}$

Therefore, Set Point; W = (mw x Qstd + bw)^2 x (760 / Pa) x (Ta / 298) = **4.06**

Remarks:

Conducted by: SK Wong Signature: Date: 6 January 2021

Checked by: Henry Leung Signature: Date: 6 January 2021

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

File No. MA19019/24/0008

Project No. AM2a - Site Boundary of the Shek Wu Hui STW (North)

Date: 6-Jan-21 Next Due Date: 6-Mar-21 Operator: SK

Equipment No.: A-01-24 Model No.: TE 5170 Serial No. 1659

Ambient Condition			
Temperature, Ta (K)	290.1	Pressure, Pa (mmHg)	764.9

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

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)]$^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	[ΔW x (Pa/760) x (298/Ta)]$^{1/2}$ **Y-axis**
1	13.3	3.71	63.10	10.2	3.25
2	10.8	3.34	56.91	8.3	2.93
3	8.3	2.93	49.94	6.0	2.49
4	6.2	2.53	43.23	4.1	2.06
5	3.0	1.76	30.21	1.8	1.36

By Linear Regression of Y on X

Slope , mw = 0.0581 **Intercept, bw = -0.4123**

Correlation coefficient* = 0.9992

*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 x Qstd + bw = [ΔW x (Pa/760) x (298/Ta)]$^{1/2}$

Therefore, Set Point; W = (mw x Qstd + bw)^2 x (760 / Pa) x (Ta / 298) = **4.22**

Remarks:

Conducted by: SK Wong Signature: Date: 6 January 2021

Checked by: Henry Leung Signature: Date: 6 January 2021

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

File No. MA16034/03/0027

Project No. AM3 - Yau Lai Estate, Bik Lai House

Date: 10-Dec-20 Next Due Date: 10-Feb-21 Operator: SK

Equipment No.: A-01-03 Model No.: GS2310 Serial No. 10379

Ambient Condition			
Temperature, Ta (K)	293.9	Pressure, Pa (mmHg)	762.5

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

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)]$^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	[ΔW x (Pa/760) x (298/Ta)]$^{1/2}$ **Y-axis**
1	13.0	3.64	61.89	8.6	2.96
2	9.6	3.13	53.25	6.5	2.57
3	7.7	2.80	47.74	5.3	2.32
4	5.1	2.28	38.94	3.3	1.83
5	2.6	1.63	27.93	2.0	1.42

By Linear Regression of Y on X

Slope , mw = 0.0463 **Intercept, bw = 0.0950**

Correlation coefficient* = 0.9981

*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 x Qstd + bw = [ΔW x (Pa/760) x (298/Ta)]$^{1/2}$

Therefore, Set Point; W = (mw x Qstd + bw)^2 x (760 / Pa) x (Ta / 298) = **4.27**

Remarks:

Conducted by: SK Wong Signature: Date: 10 December 2020

Checked by: Henry Leung Signature: Date: 10 December 2020

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

File No. MA16034/03/0028

Project No. AM3 - Yau Lai Estate, Bik Lai House

Date: 10-Feb-21 Next Due Date: 10-Apr-21 Operator: SK

Equipment No.: A-01-03 Model No.: GS2310 Serial No. 10379

Ambient Condition			
Temperature, Ta (K)	289.5	Pressure, Pa (mmHg)	760

Orifice Transfer Standard Information					
Serial No.	3864	Slope, mc	0.05846	Intercept, bc	-0.00313
Last Calibration Date:	11-Jan-21	**mc x Qstd + bc = [ΔH x (Pa/760) x (298/Ta)]$^{1/2}$**			
Next Calibration Date:	11-Jan-22	**Qstd = {[ΔH x (Pa/760) x (298/Ta)]$^{1/2}$ -bc} / mc**			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)]$^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	[ΔW x (Pa/760) x (298/Ta)]$^{1/2}$ **Y-axis**
1	12.9	3.64	62.39	8.7	2.99
2	9.6	3.14	53.83	6.5	2.59
3	7.8	2.83	48.52	5.3	2.34
4	5.2	2.31	39.63	3.4	1.87
5	2.6	1.64	28.04	2.0	1.43

By Linear Regression of Y on X

Slope , mw = **0.0462** **Intercept, bw =** **0.0975**

Correlation coefficient* = **0.9984**

*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 x Qstd + bw = [ΔW x (Pa/760) x (298/Ta)]$^{1/2}$

Therefore, Set Point; W = (mw x Qstd + bw)^2 x (760 / Pa) x (Ta / 298) = **4.21**

Remarks:

Conducted by: SK Wong Signature: Date: 10 February 2021

Checked by: Henry Leung Signature: Date: 10 February 2021

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-Oct-2020
Next Due Date	29-Apr-2021

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
1.5	1.5	0.0
2.0	2.1	-0.1
3.5	3.5	0.0

2. Performance check of Wind Direction

Wind Direction (^{o})		Difference D (^{o})
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-Feb-21	20.3	76	0
2-Feb-21	20.9	76	0
3-Feb-21	18.4	69	0
4-Feb-21	19.4	68	0
5-Feb-21	19.9	72	0
6-Feb-21	20.7	73	0
7-Feb-21	20.3	74	0
8-Feb-21	19.9	79	0
9-Feb-21	18.5	76	Trace
10-Feb-21	16.5	89	32.2
11-Feb-21	17.4	78	0
12-Feb-21	18.4	69	0
13-Feb-21	19.2	76	0
14-Feb-21	19.9	75	0
15-Feb-21	21.1	70	0
16-Feb-21	20.3	71	0
17-Feb-21	20.4	70	0
18-Feb-21	18.5	65	0
19-Feb-21	18.5	66	0
20-Feb-21	19.6	73	0
21-Feb-21	20.4	74	0
22-Feb-21	21.4	78	0
23-Feb-21	21.7	74	0
24-Feb-21	20.3	79	Trace
25-Feb-21	20.2	85	1.8
26-Feb-21	22.3	86	14.7
27-Feb-21	18.8	89	13.4
28-Feb-21	19.9	83	Trace

* 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-Feb-21	0:00	79.6	0.1
1-Feb-21	1:00	89.6	0.1
1-Feb-21	2:00	53.0	0.1
1-Feb-21	3:00	56.1	0.1
1-Feb-21	4:00	92.1	0.1
1-Feb-21	5:00	116.4	0.1
1-Feb-21	6:00	88.9	0.1
1-Feb-21	7:00	106.1	0.1
1-Feb-21	8:00	112.7	0.2
1-Feb-21	9:00	121.4	0.1
1-Feb-21	10:00	118.9	0.2
1-Feb-21	11:00	152.0	0.1
1-Feb-21	12:00	162.5	0.2
1-Feb-21	13:00	130.0	0.2
1-Feb-21	14:00	162.7	0.1
1-Feb-21	15:00	206.4	0.5
1-Feb-21	16:00	159.4	1.0
1-Feb-21	17:00	143.9	0.1
1-Feb-21	18:00	127.1	0.2
1-Feb-21	19:00	110.5	0.4
1-Feb-21	20:00	137.9	0.4
1-Feb-21	21:00	142.4	0.2
1-Feb-21	22:00	133.9	0.1
1-Feb-21	23:00	102.9	0.2
2-Feb-21	0:00	143.1	0.1
2-Feb-21	1:00	126.6	0.1
2-Feb-21	2:00	124.3	0.1
2-Feb-21	3:00	113.5	0.1
2-Feb-21	4:00	158.9	0.1
2-Feb-21	5:00	47.1	0.1
2-Feb-21	6:00	110.2	0.1
2-Feb-21	7:00	125.8	0.3
2-Feb-21	8:00	95.7	0.1
2-Feb-21	9:00	99.9	0.4
2-Feb-21	10:00	127.1	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)
2-Feb-21	11:00	88.4	0.2
2-Feb-21	12:00	118.4	0.2
2-Feb-21	13:00	136.2	1.1
2-Feb-21	14:00	107.1	0.6
2-Feb-21	15:00	94.1	0.2
2-Feb-21	16:00	138.4	0.3
2-Feb-21	17:00	143.9	0.1
2-Feb-21	18:00	111.2	0.1
2-Feb-21	19:00	194.1	0.3
2-Feb-21	20:00	91.8	0.7
2-Feb-21	21:00	135.3	0.4
2-Feb-21	22:00	148.8	0.2
2-Feb-21	23:00	115.8	0.1
3-Feb-21	0:00	93.8	0.1
3-Feb-21	1:00	101.9	0.1
3-Feb-21	2:00	128.3	0.1
3-Feb-21	3:00	103.1	0.1
3-Feb-21	4:00	111.3	0.1
3-Feb-21	5:00	107.1	0.1
3-Feb-21	6:00	87.6	0.2
3-Feb-21	7:00	114.3	0.1
3-Feb-21	8:00	112.7	0.1
3-Feb-21	9:00	92.5	0.1
3-Feb-21	10:00	121.1	0.1
3-Feb-21	11:00	115.1	0.2
3-Feb-21	12:00	134.8	0.2
3-Feb-21	13:00	90.3	1.0
3-Feb-21	14:00	130.4	0.5
3-Feb-21	15:00	133.9	0.2
3-Feb-21	16:00	210.0	0.1
3-Feb-21	17:00	108.3	0.2
3-Feb-21	18:00	178.7	0.3
3-Feb-21	19:00	131.3	0.1
3-Feb-21	20:00	106.2	0.1
3-Feb-21	21:00	119.9	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-Feb-21	22:00	113.8	0.1
3-Feb-21	23:00	133.3	0.1
4-Feb-21	0:00	177.3	0.2
4-Feb-21	1:00	115.9	0.2
4-Feb-21	2:00	145.6	0.2
4-Feb-21	3:00	118.6	0.1
4-Feb-21	4:00	99.8	0.1
4-Feb-21	5:00	30.6	0.1
4-Feb-21	6:00	92.6	0.1
4-Feb-21	7:00	61.4	0.2
4-Feb-21	8:00	54.6	0.2
4-Feb-21	9:00	100.8	0.2
4-Feb-21	10:00	77.8	0.1
4-Feb-21	11:00	47.2	0.3
4-Feb-21	12:00	87.4	0.3
4-Feb-21	13:00	80.6	0.3
4-Feb-21	14:00	99.7	0.4
4-Feb-21	15:00	119.8	0.2
4-Feb-21	16:00	114.4	0.3
4-Feb-21	17:00	92.6	0.1
4-Feb-21	18:00	73.9	0.1
4-Feb-21	19:00	78.8	0.2
4-Feb-21	20:00	48.6	0.1
4-Feb-21	21:00	61.9	0.1
4-Feb-21	22:00	84.6	0.1
4-Feb-21	23:00	75.4	0.1
5-Feb-21	0:00	24.6	0.1
5-Feb-21	1:00	72.1	0.1
5-Feb-21	2:00	60.4	0.1
5-Feb-21	3:00	120.6	0.1
5-Feb-21	4:00	73.7	0.2
5-Feb-21	5:00	77.5	0.1
5-Feb-21	6:00	103.8	0.1
5-Feb-21	7:00	55.0	0.1
5-Feb-21	8:00	99.8	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)
5-Feb-21	9:00	76.4	0.1
5-Feb-21	10:00	82.4	0.1
5-Feb-21	11:00	129.3	0.1
5-Feb-21	12:00	142.9	0.2
5-Feb-21	13:00	117.8	0.3
5-Feb-21	14:00	128.0	0.2
5-Feb-21	15:00	138.1	0.1
5-Feb-21	16:00	111.9	0.1
5-Feb-21	17:00	116.3	0.1
5-Feb-21	18:00	128.9	0.1
5-Feb-21	19:00	113.1	0.1
5-Feb-21	20:00	122.8	0.2
5-Feb-21	21:00	105.8	0.1
5-Feb-21	22:00	110.4	0.2
5-Feb-21	23:00	148.8	0.2
6-Feb-21	0:00	150.9	0.1
6-Feb-21	1:00	149.2	0.1
6-Feb-21	2:00	109.7	0.1
6-Feb-21	3:00	156.4	0.8
6-Feb-21	4:00	137.9	0.1
6-Feb-21	5:00	106.1	0.2
6-Feb-21	6:00	164.7	0.1
6-Feb-21	7:00	102.2	0.1
6-Feb-21	8:00	120.2	0.4
6-Feb-21	9:00	141.5	0.7
6-Feb-21	10:00	137.4	0.5
6-Feb-21	11:00	113.6	1.1
6-Feb-21	12:00	133.4	3.1
6-Feb-21	13:00	94.1	0.4
6-Feb-21	14:00	166.9	0.1
6-Feb-21	15:00	88.3	0.2
6-Feb-21	16:00	119.4	0.2
6-Feb-21	17:00	124.5	0.3
6-Feb-21	18:00	181.0	0.2
6-Feb-21	19:00	99.2	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)
6-Feb-21	20:00	99.8	0.1
6-Feb-21	21:00	125.6	0.1
6-Feb-21	22:00	100.4	0.1
6-Feb-21	23:00	132.2	0.1
7-Feb-21	0:00	113.6	0.2
7-Feb-21	1:00	113.0	0.1
7-Feb-21	2:00	110.4	0.1
7-Feb-21	3:00	107.4	0.1
7-Feb-21	4:00	116.6	0.1
7-Feb-21	5:00	119.2	0.1
7-Feb-21	6:00	92.1	0.1
7-Feb-21	7:00	36.3	0.1
7-Feb-21	8:00	69.2	0.1
7-Feb-21	9:00	94.6	0.1
7-Feb-21	10:00	121.6	0.1
7-Feb-21	11:00	115.6	0.1
7-Feb-21	12:00	126.7	0.1
7-Feb-21	13:00	132.1	0.1
7-Feb-21	14:00	125.7	0.1
7-Feb-21	15:00	112.9	0.2
7-Feb-21	16:00	68.1	0.1
7-Feb-21	17:00	43.1	0.4
7-Feb-21	18:00	57.6	0.2
7-Feb-21	19:00	78.9	0.2
7-Feb-21	20:00	65.2	0.1
7-Feb-21	21:00	90.3	0.1
7-Feb-21	22:00	219.9	0.1
7-Feb-21	23:00	55.3	0.1
8-Feb-21	0:00	106.6	0.1
8-Feb-21	1:00	88.9	0.1
8-Feb-21	2:00	54.9	0.1
8-Feb-21	3:00	103.8	0.5
8-Feb-21	4:00	62.4	1.4
8-Feb-21	5:00	62.5	2.2
8-Feb-21	6:00	73.7	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)
8-Feb-21	7:00	34.1	0.2
8-Feb-21	8:00	41.4	0.2
8-Feb-21	9:00	91.4	0.1
8-Feb-21	10:00	48.4	0.1
8-Feb-21	11:00	92.1	0.2
8-Feb-21	12:00	94.8	0.2
8-Feb-21	13:00	34.9	0.2
8-Feb-21	14:00	66.9	0.4
8-Feb-21	15:00	87.2	0.1
8-Feb-21	16:00	90.4	0.2
8-Feb-21	17:00	28.9	0.6
8-Feb-21	18:00	35.1	0.2
8-Feb-21	19:00	81.3	0.1
8-Feb-21	20:00	81.6	0.2
8-Feb-21	21:00	77.1	0.1
8-Feb-21	22:00	225.3	0.1
8-Feb-21	23:00	88.8	0.1
9-Feb-21	0:00	72.0	0.1
9-Feb-21	1:00	83.8	0.1
9-Feb-21	2:00	40.4	0.1
9-Feb-21	3:00	74.2	0.1
9-Feb-21	4:00	74.7	0.3
9-Feb-21	5:00	52.1	0.1
9-Feb-21	6:00	52.3	0.1
9-Feb-21	7:00	46.8	0.1
9-Feb-21	8:00	66.4	0.1
9-Feb-21	9:00	66.1	0.1
9-Feb-21	10:00	225.5	0.1
9-Feb-21	11:00	79.4	0.1
9-Feb-21	12:00	67.1	0.2
9-Feb-21	13:00	71.6	0.2
9-Feb-21	14:00	101.1	0.1
9-Feb-21	15:00	57.0	0.2
9-Feb-21	16:00	197.3	0.1
9-Feb-21	17:00	136.1	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)
9-Feb-21	18:00	336.0	0.2
9-Feb-21	19:00	72.1	0.1
9-Feb-21	20:00	71.4	0.1
9-Feb-21	21:00	218.9	0.1
9-Feb-21	22:00	100.6	0.1
9-Feb-21	23:00	91.0	0.1
10-Feb-21	0:00	109.1	0.2
10-Feb-21	1:00	83.8	0.1
10-Feb-21	2:00	59.9	0.1
10-Feb-21	3:00	73.8	0.1
10-Feb-21	4:00	238.4	0.2
10-Feb-21	5:00	60.1	0.1
10-Feb-21	6:00	65.5	0.1
10-Feb-21	7:00	45.9	0.1
10-Feb-21	8:00	89.3	0.1
10-Feb-21	9:00	100.6	0.1
10-Feb-21	10:00	51.9	0.1
10-Feb-21	11:00	204.4	0.1
10-Feb-21	12:00	39.9	0.1
10-Feb-21	13:00	131.6	0.2
10-Feb-21	14:00	117.8	0.2
10-Feb-21	15:00	115.2	0.2
10-Feb-21	16:00	160.6	0.1
10-Feb-21	17:00	264.2	0.5
10-Feb-21	18:00	171.9	0.1
10-Feb-21	19:00	298.0	0.2
10-Feb-21	20:00	305.1	0.2
10-Feb-21	21:00	303.5	0.1
10-Feb-21	22:00	274.8	0.1
10-Feb-21	23:00	260.3	0.1
11-Feb-21	0:00	195.4	0.1
11-Feb-21	1:00	49.6	0.2
11-Feb-21	2:00	90.0	0.1
11-Feb-21	3:00	110.1	0.1
11-Feb-21	4:00	113.8	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)
11-Feb-21	5:00	103.7	0.1
11-Feb-21	6:00	107.3	0.1
11-Feb-21	7:00	143.6	0.1
11-Feb-21	8:00	111.8	0.1
11-Feb-21	9:00	103.4	0.1
11-Feb-21	10:00	114.4	0.1
11-Feb-21	11:00	88.4	0.1
11-Feb-21	12:00	78.4	0.1
11-Feb-21	13:00	125.8	0.2
11-Feb-21	14:00	131.8	0.1
11-Feb-21	15:00	168.1	0.1
11-Feb-21	16:00	78.5	0.2
11-Feb-21	17:00	163.5	0.2
11-Feb-21	18:00	118.6	0.1
11-Feb-21	19:00	130.1	0.4
11-Feb-21	20:00	109.3	0.1
11-Feb-21	21:00	112.3	0.1
11-Feb-21	22:00	98.3	0.1
11-Feb-21	23:00	103.4	0.1
12-Feb-21	0:00	109.8	0.1
12-Feb-21	1:00	96.4	0.1
12-Feb-21	2:00	146.6	0.1
12-Feb-21	3:00	144.3	0.1
12-Feb-21	4:00	82.9	0.1
12-Feb-21	5:00	101.5	0.1
12-Feb-21	6:00	109.9	0.1
12-Feb-21	7:00	73.3	0.1
12-Feb-21	8:00	121.2	0.1
12-Feb-21	9:00	98.9	0.1
12-Feb-21	10:00	30.1	0.1
12-Feb-21	11:00	188.9	0.2
12-Feb-21	12:00	190.0	0.1
12-Feb-21	13:00	306.9	0.1
12-Feb-21	14:00	344.8	0.3
12-Feb-21	15:00	136.6	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)
12-Feb-21	16:00	161.2	0.2
12-Feb-21	17:00	151.8	0.1
12-Feb-21	18:00	355.0	1.0
12-Feb-21	19:00	337.5	0.3
12-Feb-21	20:00	348.4	0.5
12-Feb-21	21:00	279.1	0.1
12-Feb-21	22:00	278.6	0.2
12-Feb-21	23:00	199.9	0.3
13-Feb-21	0:00	126.9	0.1
13-Feb-21	1:00	107.4	0.1
13-Feb-21	2:00	193.0	0.1
13-Feb-21	3:00	29.3	0.1
13-Feb-21	4:00	57.8	0.1
13-Feb-21	5:00	191.6	0.1
13-Feb-21	6:00	74.7	0.1
13-Feb-21	7:00	88.3	0.1
13-Feb-21	8:00	101.3	0.1
13-Feb-21	9:00	46.4	0.1
13-Feb-21	10:00	269.3	0.3
13-Feb-21	11:00	326.3	0.7
13-Feb-21	12:00	22.4	0.1
13-Feb-21	13:00	250.2	0.1
13-Feb-21	14:00	136.4	0.1
13-Feb-21	15:00	146.9	0.2
13-Feb-21	16:00	152.9	0.4
13-Feb-21	17:00	104.7	0.2
13-Feb-21	18:00	126.4	0.2
13-Feb-21	19:00	102.9	0.4
13-Feb-21	20:00	102.9	0.4
13-Feb-21	21:00	126.9	0.4
13-Feb-21	22:00	101.2	0.7
13-Feb-21	23:00	66.3	0.2
14-Feb-21	0:00	101.5	0.1
14-Feb-21	1:00	107.6	0.1
14-Feb-21	2:00	100.1	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)
14-Feb-21	3:00	104.6	0.1
14-Feb-21	4:00	97.4	0.1
14-Feb-21	5:00	107.7	0.1
14-Feb-21	6:00	120.1	0.1
14-Feb-21	7:00	146.2	0.2
14-Feb-21	8:00	89.8	0.2
14-Feb-21	9:00	135.4	0.2
14-Feb-21	10:00	106.6	0.3
14-Feb-21	11:00	218.1	0.3
14-Feb-21	12:00	107.2	0.4
14-Feb-21	13:00	272.4	0.4
14-Feb-21	14:00	112.1	0.7
14-Feb-21	15:00	227.1	0.8
14-Feb-21	16:00	156.8	0.7
14-Feb-21	17:00	184.5	0.8
14-Feb-21	18:00	110.3	0.4
14-Feb-21	19:00	230.9	0.3
14-Feb-21	20:00	113.1	0.2
14-Feb-21	21:00	70.9	0.2
14-Feb-21	22:00	105.2	0.2
14-Feb-21	23:00	118.3	0.2
15-Feb-21	0:00	142.2	0.2
15-Feb-21	1:00	64.3	0.2
15-Feb-21	2:00	102.4	0.3
15-Feb-21	3:00	84.7	0.4
15-Feb-21	4:00	130.6	0.4
15-Feb-21	5:00	111.9	0.5
15-Feb-21	6:00	87.4	0.5
15-Feb-21	7:00	78.1	0.9
15-Feb-21	8:00	96.6	0.5
15-Feb-21	9:00	75.1	0.5
15-Feb-21	10:00	176.4	0.4
15-Feb-21	11:00	215.0	0.5
15-Feb-21	12:00	175.8	0.5
15-Feb-21	13:00	115.0	0.6

APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
15-Feb-21	14:00	234.4	0.5
15-Feb-21	15:00	265.9	0.5
15-Feb-21	16:00	160.9	0.4
15-Feb-21	17:00	136.6	0.4
15-Feb-21	18:00	77.0	0.3
15-Feb-21	19:00	169.6	0.3
15-Feb-21	20:00	94.6	0.3
15-Feb-21	21:00	119.4	0.5
15-Feb-21	22:00	127.0	0.5
15-Feb-21	23:00	102.6	0.5
16-Feb-21	0:00	92.6	0.6
16-Feb-21	1:00	86.5	0.6
16-Feb-21	2:00	210.5	0.5
16-Feb-21	3:00	239.5	0.6
16-Feb-21	4:00	11.9	0.5
16-Feb-21	5:00	220.5	0.5
16-Feb-21	6:00	58.1	0.6
16-Feb-21	7:00	94.3	0.6
16-Feb-21	8:00	22.1	2.1
16-Feb-21	9:00	50.1	0.9
16-Feb-21	10:00	112.6	1.0
16-Feb-21	11:00	115.0	1.4
16-Feb-21	12:00	74.1	2.2
16-Feb-21	13:00	99.4	1.1
16-Feb-21	14:00	36.9	0.8
16-Feb-21	15:00	367.6	0.6
16-Feb-21	16:00	163.3	0.6
16-Feb-21	17:00	42.9	0.9
16-Feb-21	18:00	116.6	1.0
16-Feb-21	19:00	73.6	0.5
16-Feb-21	20:00	27.3	0.3
16-Feb-21	21:00	90.1	1.2
16-Feb-21	22:00	68.4	0.7
16-Feb-21	23:00	34.2	0.8
17-Feb-21	0:00	81.7	0.9

APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
17-Feb-21	1:00	50.1	1.3
17-Feb-21	2:00	114.9	0.9
17-Feb-21	3:00	52.1	0.8
17-Feb-21	4:00	57.0	0.9
17-Feb-21	5:00	65.0	0.7
17-Feb-21	6:00	62.8	1.4
17-Feb-21	7:00	68.7	1.0
17-Feb-21	8:00	88.7	0.5
17-Feb-21	9:00	60.3	1.2
17-Feb-21	10:00	162.4	0.5
17-Feb-21	11:00	217.0	0.6
17-Feb-21	12:00	256.7	2.1
17-Feb-21	13:00	133.8	0.2
17-Feb-21	14:00	78.1	1.7
17-Feb-21	15:00	237.9	0.5
17-Feb-21	16:00	142.5	0.7
17-Feb-21	17:00	29.6	0.7
17-Feb-21	18:00	73.9	0.3
17-Feb-21	19:00	83.8	0.2
17-Feb-21	20:00	68.6	0.4
17-Feb-21	21:00	97.8	0.4
17-Feb-21	22:00	85.4	0.1
17-Feb-21	23:00	77.8	0.1
18-Feb-21	0:00	104.9	0.2
18-Feb-21	1:00	102.9	0.2
18-Feb-21	2:00	45.3	0.3
18-Feb-21	3:00	91.1	0.2
18-Feb-21	4:00	50.5	0.1
18-Feb-21	5:00	91.0	0.1
18-Feb-21	6:00	65.6	0.4
18-Feb-21	7:00	97.9	0.1
18-Feb-21	8:00	43.3	0.2
18-Feb-21	9:00	54.0	0.1
18-Feb-21	10:00	66.5	0.1
18-Feb-21	11:00	66.6	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)
18-Feb-21	12:00	52.6	0.5
18-Feb-21	13:00	73.3	0.7
18-Feb-21	14:00	92.9	0.3
18-Feb-21	15:00	85.4	0.3
18-Feb-21	16:00	115.3	0.3
18-Feb-21	17:00	213.6	0.2
18-Feb-21	18:00	148.3	0.2
18-Feb-21	19:00	206.3	0.2
18-Feb-21	20:00	135.8	0.2
18-Feb-21	21:00	107.8	0.1
18-Feb-21	22:00	130.3	0.1
18-Feb-21	23:00	98.9	0.1
19-Feb-21	0:00	95.9	0.1
19-Feb-21	1:00	108.6	0.1
19-Feb-21	2:00	97.0	0.1
19-Feb-21	3:00	77.1	0.1
19-Feb-21	4:00	111.5	0.1
19-Feb-21	5:00	146.5	0.1
19-Feb-21	6:00	107.1	0.1
19-Feb-21	7:00	143.1	0.1
19-Feb-21	8:00	119.0	0.1
19-Feb-21	9:00	96.1	0.1
19-Feb-21	10:00	91.8	0.2
19-Feb-21	11:00	115.9	0.2
19-Feb-21	12:00	103.5	0.1
19-Feb-21	13:00	147.6	0.2
19-Feb-21	14:00	88.4	0.1
19-Feb-21	15:00	244.5	0.2
19-Feb-21	16:00	203.2	0.2
19-Feb-21	17:00	170.1	2.4
19-Feb-21	18:00	162.6	0.3
19-Feb-21	19:00	93.4	0.3
19-Feb-21	20:00	123.4	0.2
19-Feb-21	21:00	113.4	0.1
19-Feb-21	22:00	92.9	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)
19-Feb-21	23:00	126.1	0.1
20-Feb-21	0:00	108.6	0.1
20-Feb-21	1:00	96.4	0.1
20-Feb-21	2:00	120.1	0.1
20-Feb-21	3:00	84.7	0.1
20-Feb-21	4:00	62.0	0.1
20-Feb-21	5:00	99.0	0.1
20-Feb-21	6:00	89.4	0.1
20-Feb-21	7:00	75.6	0.1
20-Feb-21	8:00	80.0	0.1
20-Feb-21	9:00	100.4	0.1
20-Feb-21	10:00	80.9	0.1
20-Feb-21	11:00	116.4	0.1
20-Feb-21	12:00	114.4	0.1
20-Feb-21	13:00	176.3	0.1
20-Feb-21	14:00	88.8	0.2
20-Feb-21	15:00	143.7	0.2
20-Feb-21	16:00	114.8	0.3
20-Feb-21	17:00	97.8	1.2
20-Feb-21	18:00	103.6	0.9
20-Feb-21	19:00	115.2	0.1
20-Feb-21	20:00	111.0	0.2
20-Feb-21	21:00	146.7	0.1
20-Feb-21	22:00	105.9	0.1
20-Feb-21	23:00	111.7	0.2
21-Feb-21	0:00	108.7	0.1
21-Feb-21	1:00	96.9	0.1
21-Feb-21	2:00	118.6	0.2
21-Feb-21	3:00	121.0	0.1
21-Feb-21	4:00	112.1	0.1
21-Feb-21	5:00	115.7	0.3
21-Feb-21	6:00	90.3	0.1
21-Feb-21	7:00	133.0	0.1
21-Feb-21	8:00	113.9	0.1
21-Feb-21	9:00	79.3	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)
21-Feb-21	10:00	77.9	0.1
21-Feb-21	11:00	110.6	0.1
21-Feb-21	12:00	95.9	0.1
21-Feb-21	13:00	94.1	0.2
21-Feb-21	14:00	79.6	0.1
21-Feb-21	15:00	156.8	0.6
21-Feb-21	16:00	158.1	0.2
21-Feb-21	17:00	198.4	0.2
21-Feb-21	18:00	171.7	0.4
21-Feb-21	19:00	188.9	0.3
21-Feb-21	20:00	168.1	0.5
21-Feb-21	21:00	107.4	0.1
21-Feb-21	22:00	85.2	0.1
21-Feb-21	23:00	95.2	0.1
22-Feb-21	0:00	66.6	0.2
22-Feb-21	1:00	62.6	0.1
22-Feb-21	2:00	98.5	0.1
22-Feb-21	3:00	128.9	0.1
22-Feb-21	4:00	186.7	0.1
22-Feb-21	5:00	97.1	0.1
22-Feb-21	6:00	186.3	0.1
22-Feb-21	7:00	230.1	0.1
22-Feb-21	8:00	230.1	0.1
22-Feb-21	9:00	230.1	0.2
22-Feb-21	10:00	231.1	0.2
22-Feb-21	11:00	304.6	0.1
22-Feb-21	12:00	319.3	0.1
22-Feb-21	13:00	92.4	0.1
22-Feb-21	14:00	313.7	0.2
22-Feb-21	15:00	182.3	1.2
22-Feb-21	16:00	90.7	0.1
22-Feb-21	17:00	88.5	0.1
22-Feb-21	18:00	101.1	0.3
22-Feb-21	19:00	116.9	0.2
22-Feb-21	20:00	201.5	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)
22-Feb-21	21:00	91.5	0.8
22-Feb-21	22:00	104.4	0.1
22-Feb-21	23:00	81.1	0.5
23-Feb-21	0:00	95.8	0.2
23-Feb-21	1:00	72.4	0.2
23-Feb-21	2:00	136.2	0.1
23-Feb-21	3:00	76.2	0.5
23-Feb-21	4:00	89.9	0.3
23-Feb-21	5:00	105.2	0.2
23-Feb-21	6:00	98.5	0.1
23-Feb-21	7:00	101.0	0.1
23-Feb-21	8:00	66.9	0.1
23-Feb-21	9:00	88.6	0.1
23-Feb-21	10:00	90.0	0.1
23-Feb-21	11:00	91.4	0.9
23-Feb-21	12:00	84.9	0.2
23-Feb-21	13:00	58.6	0.5
23-Feb-21	14:00	91.0	0.4
23-Feb-21	15:00	74.9	0.8
23-Feb-21	16:00	93.5	0.4
23-Feb-21	17:00	197.5	0.2
23-Feb-21	18:00	160.1	0.2
23-Feb-21	19:00	80.5	0.4
23-Feb-21	20:00	102.5	0.1
23-Feb-21	21:00	84.6	0.1
23-Feb-21	22:00	84.5	0.2
23-Feb-21	23:00	86.2	0.1
24-Feb-21	0:00	72.1	0.2
24-Feb-21	1:00	57.0	0.2
24-Feb-21	2:00	86.5	0.6
24-Feb-21	3:00	87.4	0.1
24-Feb-21	4:00	118.8	0.2
24-Feb-21	5:00	115.8	0.3
24-Feb-21	6:00	119.6	0.1
24-Feb-21	7:00	92.4	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)
24-Feb-21	8:00	139.7	0.1
24-Feb-21	9:00	85.0	0.1
24-Feb-21	10:00	100.7	0.2
24-Feb-21	11:00	76.8	0.1
24-Feb-21	12:00	108.9	0.1
24-Feb-21	13:00	168.8	0.5
24-Feb-21	14:00	47.3	0.3
24-Feb-21	15:00	61.2	0.1
24-Feb-21	16:00	111.5	0.3
24-Feb-21	17:00	69.1	0.3
24-Feb-21	18:00	89.7	0.4
24-Feb-21	19:00	119.5	0.2
24-Feb-21	20:00	110.8	0.3
24-Feb-21	21:00	110.9	0.2
24-Feb-21	22:00	70.8	0.1
24-Feb-21	23:00	72.1	0.1
25-Feb-21	0:00	76.9	0.1
25-Feb-21	1:00	108.9	0.1
25-Feb-21	2:00	114.5	0.1
25-Feb-21	3:00	72.1	0.1
25-Feb-21	4:00	84.8	0.1
25-Feb-21	5:00	26.4	0.1
25-Feb-21	6:00	82.3	0.1
25-Feb-21	7:00	72.3	0.2
25-Feb-21	8:00	67.0	0.1
25-Feb-21	9:00	34.9	0.2
25-Feb-21	10:00	45.6	0.1
25-Feb-21	11:00	73.0	0.1
25-Feb-21	12:00	75.5	0.1
25-Feb-21	13:00	71.3	0.1
25-Feb-21	14:00	87.6	0.1
25-Feb-21	15:00	95.4	0.1
25-Feb-21	16:00	126.7	0.1
25-Feb-21	17:00	90.6	0.3
25-Feb-21	18:00	134.2	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)
25-Feb-21	19:00	79.2	0.2
25-Feb-21	20:00	88.8	0.3
25-Feb-21	21:00	72.2	0.1
25-Feb-21	22:00	77.1	0.1
25-Feb-21	23:00	76.4	0.1
26-Feb-21	0:00	76.8	0.1
26-Feb-21	1:00	71.9	0.1
26-Feb-21	2:00	84.4	0.1
26-Feb-21	3:00	68.9	0.2
26-Feb-21	4:00	75.1	0.1
26-Feb-21	5:00	86.4	0.1
26-Feb-21	6:00	54.4	0.1
26-Feb-21	7:00	64.1	0.1
26-Feb-21	8:00	57.4	0.1
26-Feb-21	9:00	76.0	0.1
26-Feb-21	10:00	175.8	0.1
26-Feb-21	11:00	67.7	0.1
26-Feb-21	12:00	36.9	0.1
26-Feb-21	13:00	69.3	0.2
26-Feb-21	14:00	292.3	0.1
26-Feb-21	15:00	240.9	0.1
26-Feb-21	16:00	79.0	0.2
26-Feb-21	17:00	230.7	1.4
26-Feb-21	18:00	284.9	1.9
26-Feb-21	19:00	235.8	1.0
26-Feb-21	20:00	272.1	0.4
26-Feb-21	21:00	260.0	0.1
26-Feb-21	22:00	109.2	0.2
26-Feb-21	23:00	70.0	0.1
27-Feb-21	0:00	67.8	0.1
27-Feb-21	1:00	89.5	0.1
27-Feb-21	2:00	68.3	0.1
27-Feb-21	3:00	65.1	0.2
27-Feb-21	4:00	70.9	0.1
27-Feb-21	5:00	91.4	0.1

APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
27-Feb-21	6:00	89.3	0.1
27-Feb-21	7:00	96.2	0.1
27-Feb-21	8:00	90.5	0.1
27-Feb-21	9:00	103.7	0.3
27-Feb-21	10:00	87.6	0.2
27-Feb-21	11:00	83.9	0.3
27-Feb-21	12:00	97.0	0.2
27-Feb-21	13:00	82.7	0.2
27-Feb-21	14:00	94.1	0.1
27-Feb-21	15:00	203.1	0.1
27-Feb-21	16:00	107.5	0.4
27-Feb-21	17:00	190.1	0.7
27-Feb-21	18:00	103.2	0.2
27-Feb-21	19:00	158.5	0.2
27-Feb-21	20:00	105.8	0.2
27-Feb-21	21:00	50.1	0.1
27-Feb-21	22:00	74.3	0.1
27-Feb-21	23:00	151.2	0.1
28-Feb-21	0:00	118.8	0.2
28-Feb-21	1:00	66.7	0.2
28-Feb-21	2:00	120.7	0.1
28-Feb-21	3:00	70.8	0.3
28-Feb-21	4:00	88.0	0.3
28-Feb-21	5:00	74.3	0.5
28-Feb-21	6:00	92.1	0.9
28-Feb-21	7:00	56.4	0.3
28-Feb-21	8:00	72.8	0.3
28-Feb-21	9:00	92.2	0.1
28-Feb-21	10:00	54.2	0.1
28-Feb-21	11:00	87.6	0.3
28-Feb-21	12:00	57.9	0.4
28-Feb-21	13:00	71.7	0.3
28-Feb-21	14:00	87.4	0.5
28-Feb-21	15:00	171.3	0.6
28-Feb-21	16:00	123.9	1.1

APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
28-Feb-21	17:00	206.8	0.1
28-Feb-21	18:00	120.2	0.1
28-Feb-21	19:00	60.3	0.1
28-Feb-21	20:00	94.8	0.2
28-Feb-21	21:00	61.6	0.4
28-Feb-21	22:00	78.0	0.1
28-Feb-21	23:00	87.3	0.1

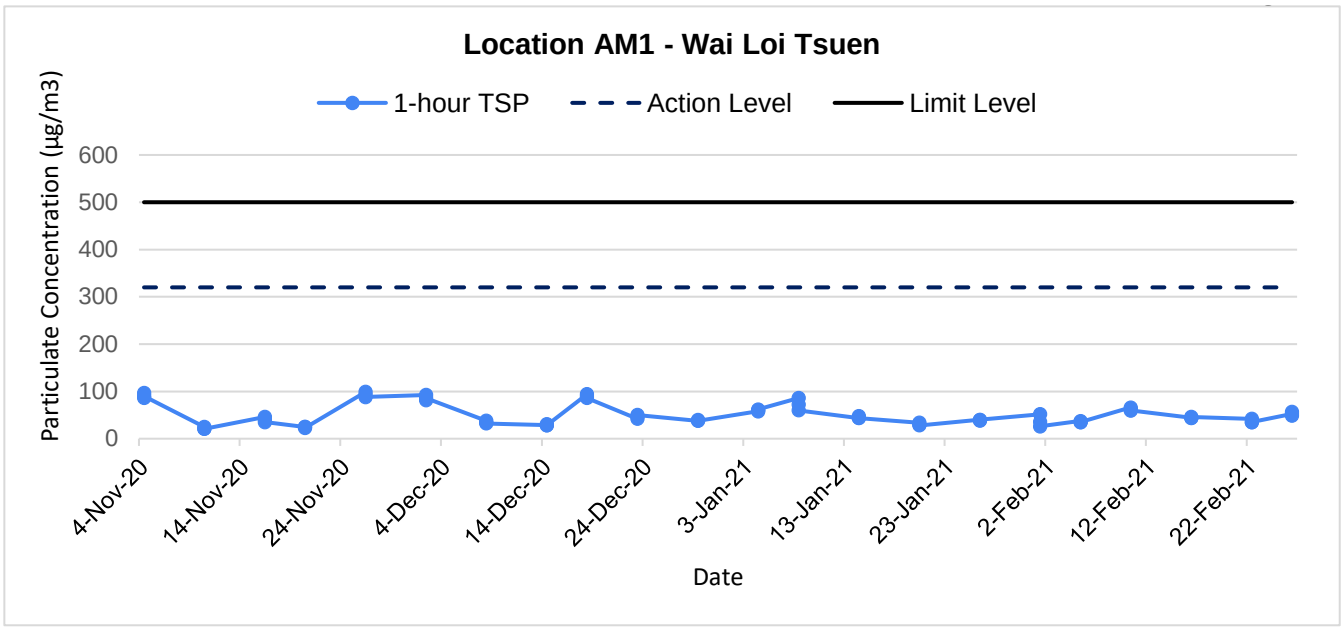
APPENDIX E
1-HOUR TSP MONITORING RESULTS AND GRAPHICAL PRESENTATIONS

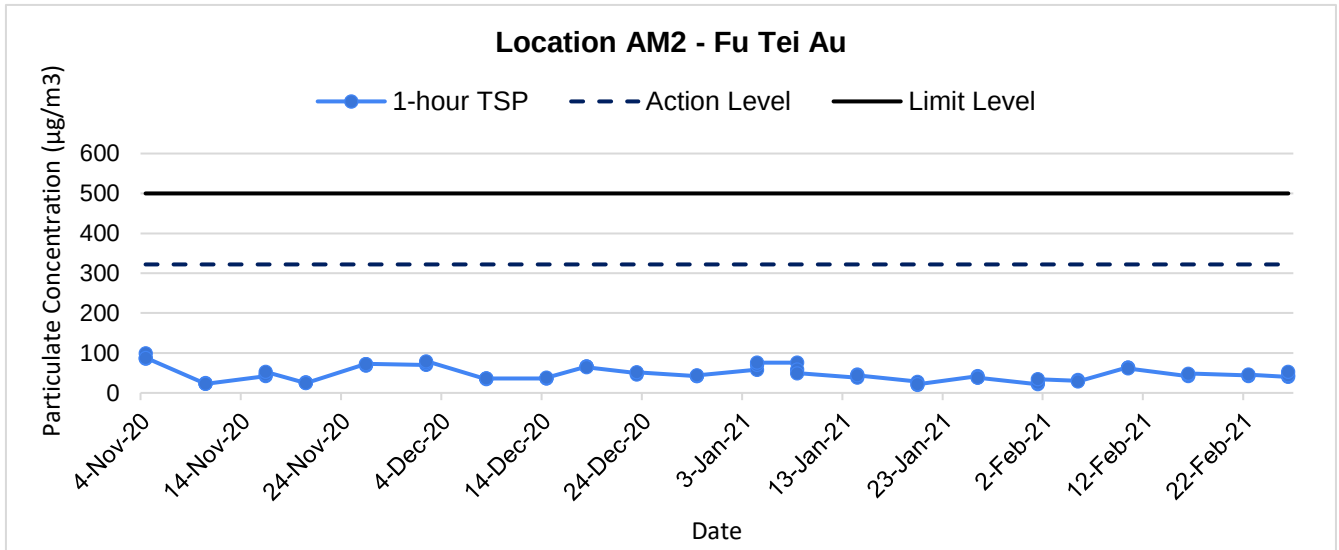
Appendix E - 1-hour TSP Monitoring Results

Location AM1 - Wai Loi Tsuen			
Date	Time	Weather	Particulate Concentration (μg/m^3)
1-Feb-21	10:15	Sunny	52.0
1-Feb-21	11:15	Sunny	36.0
1-Feb-21	12:15	Sunny	26.0
5-Feb-21	9:05	Sunny	37.4
5-Feb-21	10:05	Sunny	35.2
5-Feb-21	11:05	Sunny	35.2
10-Feb-21	9:15	Rainy	66.0
10-Feb-21	10:15	Rainy	61.6
10-Feb-21	11:15	Rainy	59.4
16-Feb-21	9:05	Sunny	44.0
16-Feb-21	10:05	Sunny	44.0
16-Feb-21	11:05	Sunny	46.2
22-Feb-21	9:30	Sunny	41.8
22-Feb-21	10:30	Sunny	35.2
22-Feb-21	11:30	Sunny	35.2
26-Feb-21	9:20	Sunny	52.5
26-Feb-21	10:20	Sunny	56.7
26-Feb-21	11:20	Sunny	48.3
		Average	45.2
		Maximum	66.0
		Minimum	26.0

Location AM2 - Fu Tei Au			
Date	Time	Weather	Particulate Concentration (μg/m^3)
1-Feb-21	13:40	Sunny	22.0
1-Feb-21	14:40	Sunny	26.0
1-Feb-21	15:40	Sunny	34.0
5-Feb-21	13:00	Sunny	30.8
5-Feb-21	14:00	Sunny	33.0
5-Feb-21	15:00	Sunny	28.6
10-Feb-21	13:30	Rainy	63.8
10-Feb-21	14:30	Rainy	63.8
10-Feb-21	15:30	Rainy	61.6
16-Feb-21	13:20	Sunny	41.8
16-Feb-21	14:20	Sunny	46.2
16-Feb-21	15:20	Sunny	48.4
22-Feb-21	13:41	Sunny	44.0
22-Feb-21	14:41	Sunny	41.8
22-Feb-21	15:41	Sunny	46.2
26-Feb-21	13:25	Sunny	39.9
26-Feb-21	14:25	Sunny	44.1
26-Feb-21	15:25	Sunny	52.5
		Average	42.7
		Maximum	63.8
		Minimum	22.0

1-hr TSP Concentration Levels





Title: Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1	Date: Feb 2021	Project No.: MA19019	CINOTECH
Graphical Presentation of 1-hour TSP Monitoring Results		Appendix: E	

APPENDIX F
24-HOUR TSP MONITORING RESULTS AND GRAPHICAL PRESENTATIONS

Appendix F - 24-hour TSP Monitoring Results

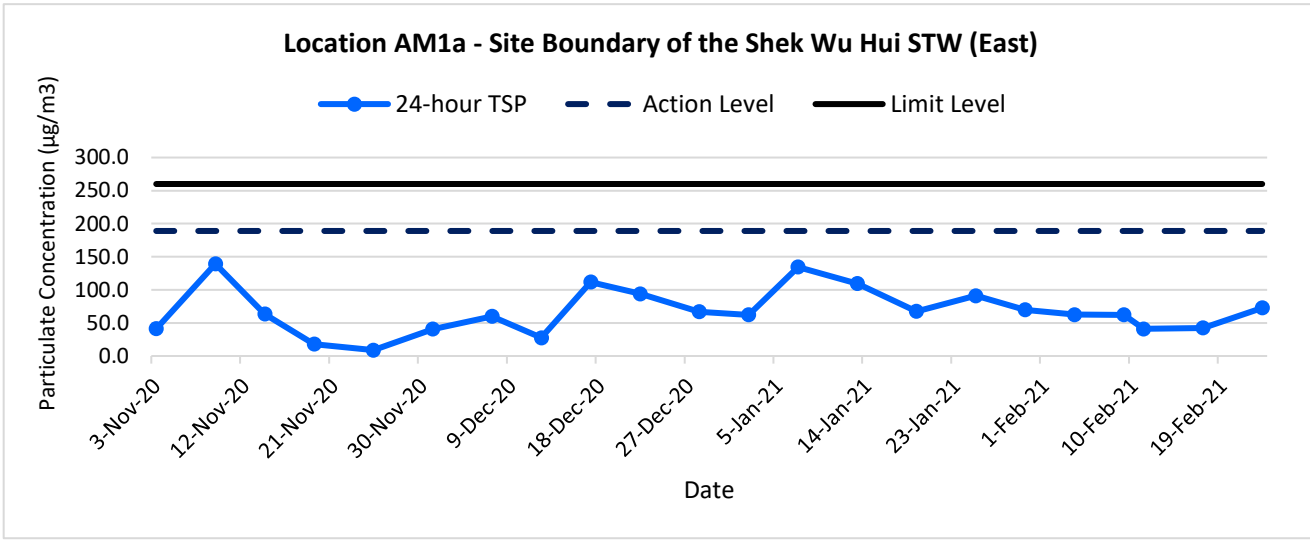
Location AM1a - Site Boundary of the Shek Wu Hui STW (East)

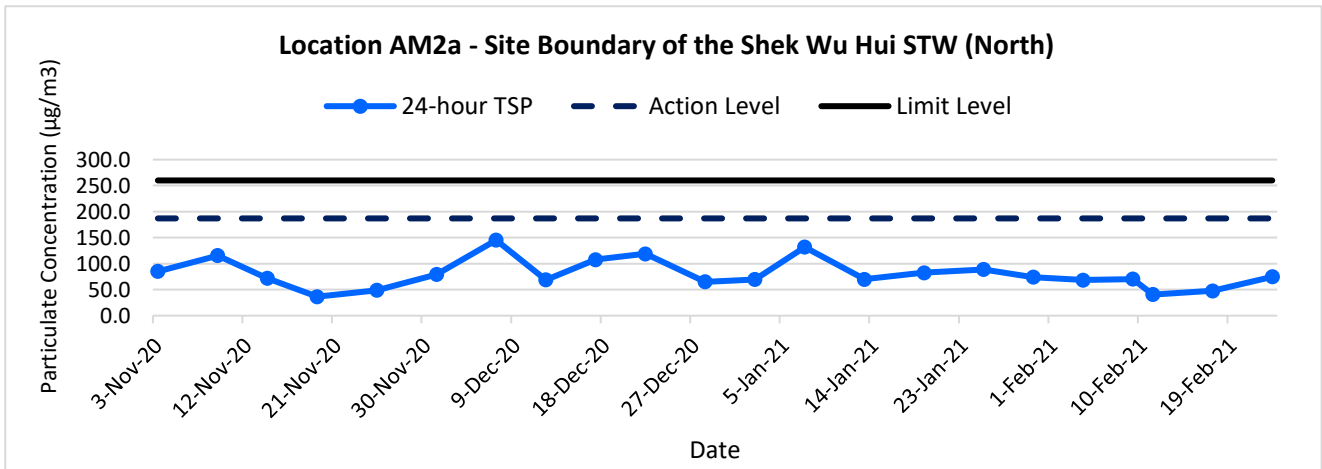
Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time (hrs.)	Flow Rate (m^3/min.)		Av. Flow (m^3/min)	Total vol. (m^3)	Conc. (μg/m^3)
				Initial	Final		Initial	Final		Initial	Final			
4-Feb-21	Sunny	292.7	766.6	2.6561	2.7652	0.1091	9810.7	9834.7	24.0	1.21	1.21	1.21	1747.2	62.4
9-Feb-21	Rainy	290.5	762.6	2.6363	2.7454	0.1091	9836.8	9860.8	24.0	1.21	1.22	1.21	1749.0	62.4
11-Feb-21	Sunny	290.9	762.6	2.6569	2.7283	0.0714	9860.8	9884.8	24.0	1.21	1.21	1.21	1747.9	40.8
17-Feb-21	Sunny	292.5	767.5	2.6504	2.7243	0.0739	9884.8	9908.8	24.0	1.21	1.22	1.21	1748.8	42.3
23-Feb-21	Sunny	294.0	762.0	2.6773	2.8036	0.1263	9908.8	9932.8	24.0	1.21	1.21	1.21	1739.0	72.6
													Min	40.8
													Max	72.6
													Average	56.1

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

Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time (hrs.)	Flow Rate (m^3/min.)		Av. Flow (m^3/min)	Total vol. (m^3)	Conc. (μg/m^3)
				Initial	Final		Initial	Final		Initial	Final			
4-Feb-21	Sunny	292.7	766.6	2.6181	2.7378	0.1197	20004.8	20028.8	24.0	1.22	1.21	1.21	1749.5	68.4
9-Feb-21	Rainy	290.5	762.6	2.6431	2.7662	0.1231	20031.3	20055.3	24.0	1.22	1.22	1.22	1751.1	70.3
11-Feb-21	Sunny	290.9	762.6	2.6509	2.7221	0.0712	20055.3	20079.3	24.0	1.22	1.21	1.22	1750.1	40.7
17-Feb-21	Sunny	292.5	767.5	2.6222	2.7057	0.0835	20079.3	20103.3	24.0	1.21	1.22	1.22	1750.9	47.7
23-Feb-21	Sunny	294.0	762.0	2.6700	2.8004	0.1304	20103.3	20127.3	24.0	1.21	1.21	1.21	1741.7	74.9
													Min	40.7
													Max	74.9
													Average	60.4

24-hr TSP Concentration Levels





Title	Date	Project No.	
Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1	Feb 2021	MA19019	CINOTECH
Graphical Presentation of 24-hour TSP Monitoring Results		Appendix F	

APPENDIX G
COPIES OF CALIBRATION CERTIFICATES FOR NOISE MONITORING

Equipment no.: N-12-01

Calibration Certificate

0024993

Customer : Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong Customer Code : SVEC09005	Object 1 : BSWA 308 SLM Serial No. /Ref. No. : 570183 / 550233 Object 2 : Serial No. /Ref. No. : Manufacturer : BSWAtech
Date of calibration: 07/10/2020 Date of the recommended re-calibration: 07/10/2021	Certificate No.: 0024993 Handle by: E0002

Measuring results

Reference value	Indication value	Deviation	Allowed deviation	Object
94.0dB	93.4dB	-0.6dB	+/- 1.5dB	1
114.0dB	113.2dB	-0.8dB	+/- 1.5dB	1

Measuring equipment

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

Ambient conditions

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

Measuring procedure

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

Uncertainty

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

Conformity

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

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

Performed by

Calibration Technician Mr. K.L. Ng

Approved by

Mr. K.S. Ng

Quality Manager

Equipment no.: N-12-02

Calibration Certificate

0024995

Customer : Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong Customer Code : SVEC09005	Object 1 : BSWA 308 SLM Serial No. /Ref. No. : 570187 / 550841 Object 2 : Serial No. /Ref. No. : Manufacturer : BSWAtech
Date of calibration: 07/10/2020 Date of the recommended re-calibration: 07/10/2021	Certificate No.: 0024995 Handle by: E0002

Measuring results

Reference value	Indication value	Deviation	Allowed deviation	Object
94.0dB	93.1dB	-0.9dB	+/- 1.5dB	1
114.0dB	113.1dB	-0.9dB	+/- 1.5dB	1

Measuring equipment

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

Ambient conditions

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

Measuring procedure

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

Uncertainty

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

Conformity

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

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

Performed by

Calibration Technician Mr. K.L. Ng

Approved by

Mr. K.S. Ng

Quality Manager

Equipment no.: N-12-03

Calibration Certificate

0024996

Customer : Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong Customer Code : SVEC09005	Object 1 : BSWA 308 SLM Serial No. /Ref. No. : 570188 / 550850 Object 2 : Serial No. /Ref. No. : Manufacturer : BSWAtech
Date of calibration: 07/10/2020 Date of the recommended re-calibration: 07/10/2021	Certificate No.: 0024996 Handle by: E0002

Measuring results

Reference value	Indication value	Deviation	Allowed deviation	Object
94.0dB	92.9dB	-1.1dB	+/- 1.5dB	1
114.0dB	112.8dB	-1.2dB	+/- 1.5dB	1

Measuring equipment

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

Ambient conditions

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

Measuring procedure

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

Uncertainty

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

Conformity

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

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

Performed by

Calibration Technician Mr. K.L. Ng

Approved by

Mr. K.S. Ng

Quality Manager

Equipment no.:N-13-01

Calibration Certificate

0025247

Customer : Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong Customer Code : SVEC09005	Object 1 : ST-120 sound calibrator Serial No. /Ref. No. : 181001608 Object 2 : Serial No. /Ref. No. : Manufacturer : Soundtek
Date of calibration: 05/11/2020 Date of the recommended re-calibration: 05/11/2021	Certificate No.: 0025247 Handle by: E0002

Measuring results

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

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

Conformity

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

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

Performed by

Calibration Technician Mr. K.L. Ng

Approved by

Quality Manager

Equipment no.:N-13-02

Calibration Certificate

0025249

Customer : Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong Customer Code : SVEC09005	Object 1 : ST-120 sound calibrator Serial No. /Ref. No. : 181001636 Object 2 : Serial No. /Ref. No. : Manufacturer : Soundtek
Date of calibration: 05/11/2020 Date of the recommended re-calibration: 05/11/2021	Certificate No.: 0025249 Handle by: E0002

Measuring results

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

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

Conformity

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

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

Performed by

Calibration Technician Mr. K.L. Ng

Approved by

Quality Manager

APPENDIX H
NOISE MONITORING RESULTS AND GRAPHICAL PRESENTATIONS

Appendix H - Noise Monitoring Results

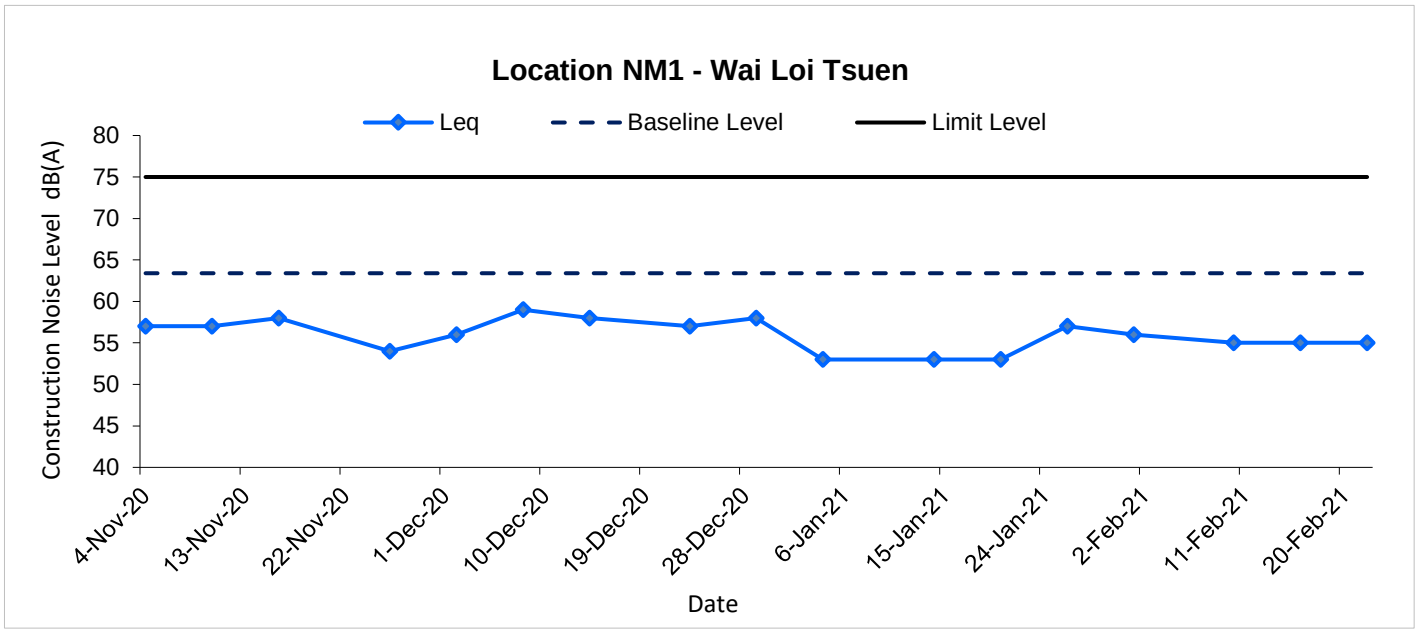
(0700-1900 hrs on Normal Weekdays)

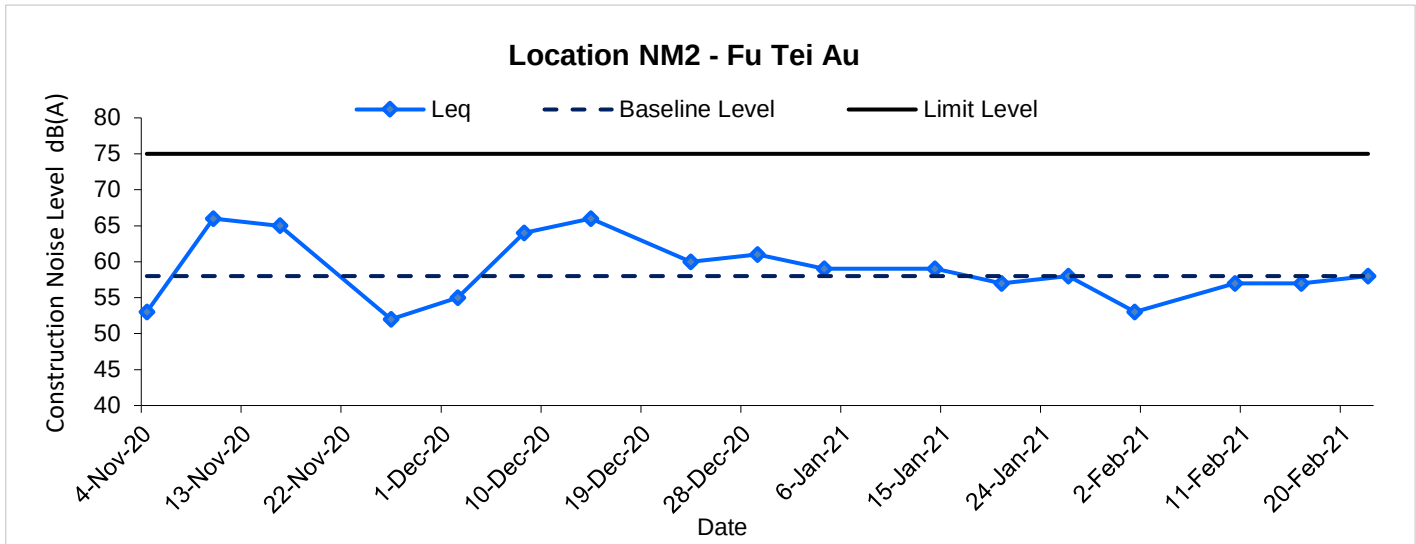
Location NM1 - Wai Loi Tsuen							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
1-Feb-21	10:20	Sunny	55.7	56.9	52.1	63.4	55.7 Measured ≦ Baseline
10-Feb-21	13:05	Rainy	54.6	56.8	51.2	63.4	54.6 Measured ≦ Baseline
16-Feb-21	13:30	Sunny	54.7	56.3	49.6	63.4	54.7 Measured ≦ Baseline
22-Feb-21	13:10	Sunny	54.9	57.4	50.0	63.4	54.9 Measured ≦ Baseline

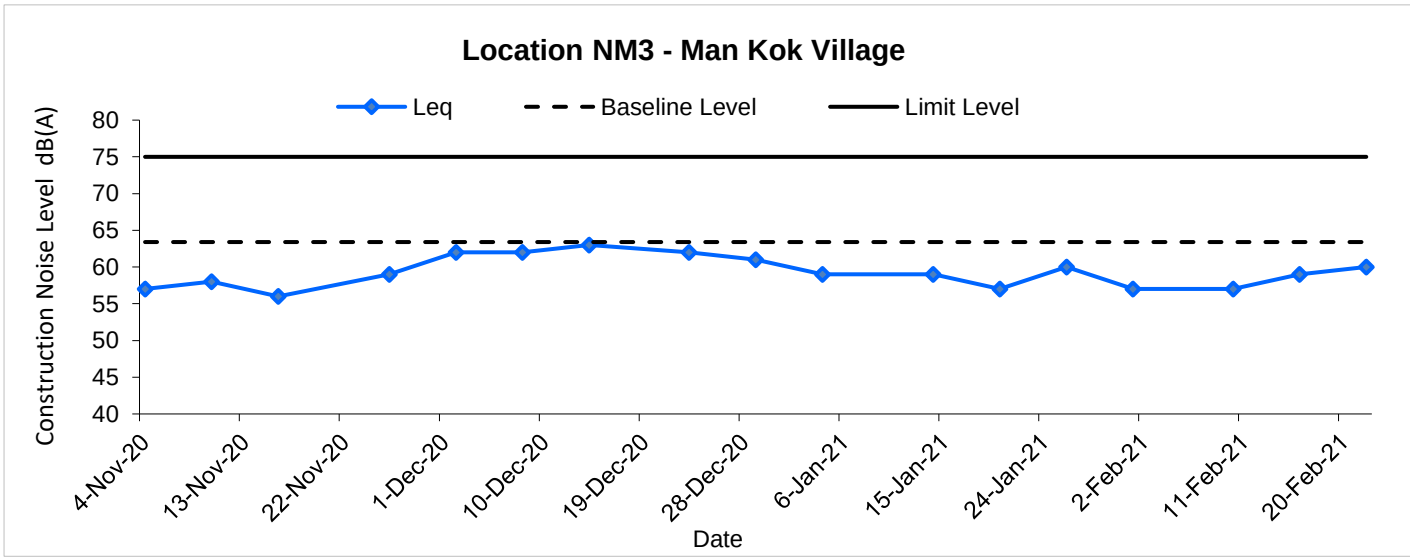
Location NM2 - Fu Tei Au							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
1-Feb-21	11:40	Sunny	53.2	53.9	48.4	58.0	53.2 Measured ≦ Baseline
10-Feb-21	15:25	Rainy	57.3	60.9	51.4	58.0	57.3 Measured ≦ Baseline
16-Feb-21	15:45	Sunny	56.9	59.1	52.5	58.0	56.9 Measured ≦ Baseline
22-Feb-21	15:15	Sunny	57.9	60.6	53.6	58.0	57.9 Measured ≦ Baseline

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}
1-Feb-21	11:00	Sunny	56.6	58.0	47.5	63.4	56.6 Measured ≦ Baseline
10-Feb-21	14:00	Rainy	57.1	59.7	53.6	63.4	57.1 Measured ≦ Baseline
16-Feb-21	14:25	Sunny	59.2	62.8	53.2	63.4	59.2 Measured ≦ Baseline
22-Feb-21	13:55	Sunny	59.5	60.6	53.7	63.4	59.5 Measured ≦ Baseline

Noise Levels







Title	Date	Project
Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 Graphical Presentation of Construction Noise Monitoring Results	Feb 2021	No. MA19019 Appendix H

CINOTECH

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**
Acridotheres cristatellus	Crested Myna	八哥		89	+++++
Anthus hodgsoni	Olive Backed Pipit	樹鷚		8	
Ardea alba	Great Egret	大白鷺	*	21	+
Ardea cinerea	Grey Heron	蒼鷺	*	52	+++
Ardeola bacchus	Chinese Pond Heron	池鷺	*	32	++
Bubulcus coromandus	Eastern Cattle Egret	牛背鷺	*	47	++++
Centropus bengaiensis	Lesser Coucal	小鴉鵑		1	
Centropus sinensis	Greater Coucal	褐翅鴉鵑		1	
Ceryle rudis	Pied Kingfisher	斑魚狗	*	0	+
Charadrius dubius	Little Ringed Plover	金眶鴴	*	1	
Copsychus saularis	Magpie Robin	鵲鴝		2	+
Corvus macrorhynchus	Jungle Crow	大嘴烏鴉		2	+
Corvus torquatus	Collared Crow	白頸鴉	*	1	+
Dicrurus macrocercus	Black Drongo	黑卷尾		0	+
Egretta garzetta	Little Egret	小白鷺	*	56	++++
Eudynamys scolopacea	Common Koel	噪鵑		6	+
Garrulax perspicillatus	Masked Laughing Thrush	黑臉噪鶥		8	
Hierococcyx sparverioides	Large Hawk Cuckoo	大鷹鵑		4	+
Hirundo rustica	Barn Swallow	家燕		29	++
Milvus migrans	Black Kite	黑鳶	*	2	+
Motacilla alba	White Wagtail	白鶺鴒		22	+
Myophonus caeruleus	Blue Whistling Thrush	紫嘯鶇		2	
Orthotomus sutorius	Common Tailorbird	長尾縫葉鶯		17	+
Phalacrocorax carbo	Great Cormorant	普通鸕鷀	*	12	+
Phoenicurus auroreus	Daurian Redstart	北紅尾鴝		2	
Phylloscopus fuscatus	Dusky Warbler	褐柳鶯		7	+
Phylloscopus inornatus	Yellow-browed Warbler	黃眉柳鶯		1	
Pica pica	Magpie	喜鵲		4	+
Prinia flaviventris	Yellow-bellied Prinia	黃腹鷦鶯		1	
Pycnonotus jocosus	Crested bulbul	紅耳鵯		39	++
Pycnonotus sinensis	Chinese Bulbul	白頭鵯		16	
Streptopelia chinensis	Spotted Dove	珠頸斑鳩		31	++
Sturnus nigricollis	Black-necked Starling	黑領椋鳥		7	
Zosterops japonicus	Japanese White-eye	暗綠繡眼鳥		13	+
			Total Point Count Abundance	536	
			Total Waterbirds	224	

*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.

MA19019 - Waterbird Ecological Monitoring Result

Monitoring Month Feb
Season Winter

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	5 Feb 2021	13:00	High	45	**114**	13
		8:00	Low	69		16
#2	10 Feb 2021	14:00	High	52	**155**	16
		8:00	Low	103		19
#3	18 Feb 2021	13:00	High	47	**121**	14
		8:00	Low	74		14
#4	26 Feb 2021	12:00	High	64	**146**	18
		8:00	Low	82		21
				Overall Total	**536**	

Table III: Total Waterbird Abundance from Point Count					
Survey Information				Numbers of Waterbirds	
No.	Date	Time	Tide Level	Individuals Recorded	Total
#1	5 Feb 2021	13:00	High	16	**54**
		8:00	Low	38	
#2	10 Feb 2021	14:00	High	17	**58**
		8:00	Low	41	
#3	18 Feb 2021	13:00	High	14	**50**
		8:00	Low	36	
#4	26 Feb 2021	12:00	High	27	**62**
		8:00	Low	35	
				Overall Total	**224**
				Average	**56**

Table IV: T-Test Analysis for All Waterbirds

Baseline Data
Monthly Average Abundance (Feb) 50.44
Seasonal Average Abundance (Winter) 62.15

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

H_0 The data collected in the reporting month falls within the normal distrubution when compared to the baseline monitoring data.

H_1 The data collected does not falls within the normal distrubution when compared to the baseline monitoring data.

If t-test value is smaller than the critical value, then rejects H_0.
For the data in the reporting month, the critical values are:
Crit. Value = -2.353 (95% Confidence Level)
Crit. Value = -4.541 (99% Confidence Level)

			Confidence Level	
T-values of Data in Reporting Month			95%	99%
Abundance	Monthly	2.152	✓	✓
	Season	***-2.383***	✕	✓
		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.

MA19019 - Waterbird Ecological Monitoring Result

Monitoring Month Feb
Season Winter

Table V: Abundance of Representative Waterbirds from Point Count

Representative Species			Recorded Abundance							Baseline Data	
Species Name	**Common Name**	**Chinese Name**	**5 Feb 2021**	**10 Feb 2021**	**18 Feb 2021**	**26 Feb 2021**		**Total**	**Average**	**Avg (Feb)**	**Avg (Winter)**
Egretta garzetta	Little Egret	小白鷺	16	13	11	16		56	14	12	15
Ardea cinerea	Grey Heron	蒼鷺	14	12	15	11		52	13	16	13
Ardeola bacchus	Chinese Pond Heron	池鷺	6	12	5	9		32	8	8	9
Phalacrocorax carbo	Great Cormorant	普通鸕鷀	4	3	3	2		12	3	9	7
Ardea alba	Great Egret	大白鷺	7	5	4	5		21	5	5	5
Bubulcus coromandus	Eastern Cattle Egret	牛背鷺	7	11	12	17		47	12	2	4

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:

H_0 The data collected in the reporting month falls within the normal distrubution when compare to the baseline monitoring data.

H_1 The data collected does not falls within the normal distrubution when compare to the baseline monitoring data.

If t-test value for a specific representative is smaller than the critical value, then rejects H_0.

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

Crit. Value = -2.353 (95% Confidence Level)
Crit. Value = -4.541 (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%	
Egretta garzetta	Little Egret	小白鷺	1.939	✓	✓	-0.523	✓	✓	✓
Ardea cinerea	Grey Heron	蒼鷺	-3.012	✕	✓	-0.112	✓	✓	✓
Ardeola bacchus	Chinese Pond Heron	池鷺	-0.158	✓	✓	-0.778	✓	✓	✓
Phalacrocorax carbo	Great Cormorant	普通鸕鷀	-13.778	✕	✕	-10.112	✕	✕	Limit Level
Ardea alba	Great Egret	大白鷺	1.192	✓	✓	-0.092	✓	✓	✓
Bubulcus coromandus	Eastern Cattle Egret	牛背鷺	4.559	✓	✓	3.706	✓	✓	✓

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.

APPENDIX J
PHOTO RECORDS OF ECOLOGICAL MONITORING

Appendix J - Photo Records of Ecological Monitoring

Part A - Conditions of Rivers

Sheung Yue River (Taken on 5 Feb 2021)

Ng Tung River (Taken on 18 Feb 2021)

Shek Sheung River (Taken on 18 Feb 2021)

Part B – Waterbird Species

Ardea alba (left), *Ardea cinerea* (Middle), *Egretta garzetta* (Right) (Taken on 26 Feb 2021)

Ardeola bacchus (Taken on 5 Feb 2021)

Phalacrocorax carbo (Taken on 26 Feb 2021)

	
Bubulcus ibis (Front) (Taken on 26 Feb 2021)	*Phoenicurus auroreus* (Taken on 26 Feb 2021)

Part C – Human Activities & Site Conditions

Excavation & Crane (Project-related, taken on 26 Feb 21)

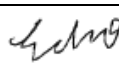
Fishing & Jaywalking (Non-project-related, taken on 26 Feb 21)

APPENDIX K
SITE AUDIT SUMMARY

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	210202
Date	2 February 2021 (Tuesday)
Time	9:30 – 11:15

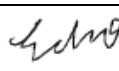
Ref. No.	**Non-Compliance**	**Related Item No.**
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	B. Water Quality	
	• No environmental deficiency was identified during the site inspection.	
	C. Air Quality	
	• No environmental deficiency was identified during the site inspection.	
	D. Noise	
	• No environmental deficiency was identified during the site inspection.	
	E. Waste / Chemical Management	
	• No environmental deficiency was identified during the site inspection.	
	F. Ecology and Fisheries	
	• No environmental deficiency was identified during the site inspection.	
	G. Landscape and Visual	
	• No environmental deficiency was identified during the site inspection.	
	H. Permits /Licences	
	• No environmental deficiency was identified during the site inspection.	
	I. Others	
	No follow-up items from the previous site inspection (ref no.: 210126).	

	Name	Signature	Date
Recorded by	Ms. Echo Hung		2 February 2021
Checked by	Mr. Eric Yan		3 February 2021

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	210210
Date	10 February 2021 (Wednesday)
Time	9:30 – 11:45

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	B. Water Quality	
	• No environmental deficiency was identified during the site inspection.	
	C. Air Quality	
	• No environmental deficiency was identified during the site inspection.	
	D. Noise	
	• No environmental deficiency was identified during the site inspection.	
	E. Waste / Chemical Management	
	• No environmental deficiency was identified during the site inspection.	
	F. Ecology and Fisheries	
	• No environmental deficiency was identified during the site inspection.	
	G. Landscape and Visual	
	• No environmental deficiency was identified during the site inspection.	
	H. Permits /Licences	
	• No environmental deficiency was identified during the site inspection.	
	I. Others	
	No follow-up items from the previous site inspection (ref no.: 210202).	

	Name	Signature	Date
Recorded by	Ms. Echo Hung		10 February 2021
Checked by	Mr. Eric Yan		11 February 2021

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	210218
Date	18 February 2021 (Thursday)
Time	9:30 – 11:00

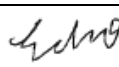
Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	B. Water Quality	
	• No environmental deficiency was identified during the site inspection.	
	C. Air Quality	
	• No environmental deficiency was identified during the site inspection.	
	D. Noise	
	• No environmental deficiency was identified during the site inspection.	
	E. Waste / Chemical Management	
	• No environmental deficiency was identified during the site inspection.	
	F. Ecology and Fisheries	
	• No environmental deficiency was identified during the site inspection.	
	G. Landscape and Visual	
	• No environmental deficiency was identified during the site inspection.	
	H. Permits /Licences	
	• No environmental deficiency was identified during the site inspection.	
	I. Others	
	No follow-up items from the previous site inspection (ref no.: 210210).	

	Name	Signature	Date
Recorded by	Ms. Echo Hung		18 February 2021
Checked by	Mr. Eric Yan		19 February 2021

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	210223
Date	23 February 2021 (Tuesday)
Time	9:30 – 11:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	B. Water Quality	
	• No environmental deficiency was identified during the site inspection.	
	C. Air Quality	
	• No environmental deficiency was identified during the site inspection.	
	D. Noise	
	• No environmental deficiency was identified during the site inspection.	
	E. Waste / Chemical Management	
	• No environmental deficiency was identified during the site inspection.	
	F. Ecology and Fisheries	
	• No environmental deficiency was identified during the site inspection.	
	G. Landscape and Visual	
	• No environmental deficiency was identified during the site inspection.	
	H. Permits /Licences	
	• No environmental deficiency was identified during the site inspection.	
	I. Others	
	No follow-up items from the previous site inspection (ref no.: 210218).	

	Name	Signature	Date
Recorded by	Ms. Echo Hung		23 February 2021
Checked by	Mr. Eric Yan		24 February 2021

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	210202
Date	2 February 2021 (Tuesday)
Time	9:30 – 11:15

Ref. No.	**Non-Compliance**	**Related Item No.**
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	B. Water Quality	
	• No environmental deficiency was identified during the site inspection.	
	C. Air Quality	
	• No environmental deficiency was identified during the site inspection.	
	D. Noise	
	• No environmental deficiency was identified during the site inspection.	
	E. Waste / Chemical Management	
	• No environmental deficiency was identified during the site inspection.	
	F. Ecology and Fisheries	
	• No environmental deficiency was identified during the site inspection.	
	G. Landscape and Visual	
	• No environmental deficiency was identified during the site inspection.	
	H. Permits /Licences	
	• No environmental deficiency was identified during the site inspection.	
	I. Others	
	No follow-up items from the previous site inspection (ref no.: 210126).	

	Name	Signature	Date
Recorded by	Ms. Echo Hung		2 February 2021
Checked by	Mr. Eric Yan		3 February 2021

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	210210
Date	10 February 2021 (Wednesday)
Time	9:30 – 11:45

Ref. No.	**Non-Compliance**	**Related Item No.**
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	B. Water Quality	
	• No environmental deficiency was identified during the site inspection.	
	C. Air Quality	
	• No environmental deficiency was identified during the site inspection.	
	D. Noise	
	• No environmental deficiency was identified during the site inspection.	
	E. Waste / Chemical Management	
	• No environmental deficiency was identified during the site inspection.	
	F. Ecology and Fisheries	
	• No environmental deficiency was identified during the site inspection.	
	G. Landscape and Visual	
	• No environmental deficiency was identified during the site inspection.	
	H. Permits /Licences	
	• No environmental deficiency was identified during the site inspection.	
	I. Others	
	No follow-up items from the previous site inspection (ref no.: 210202).	

	Name	Signature	Date
Recorded by	Ms. Echo Hung		10 February 2021
Checked by	Mr. Eric Yan		11 February 2021

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	210218
Date	18 February 2021 (Thursday)
Time	9:30 – 11:00

Ref. No.	**Non-Compliance**	**Related Item No.**
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	B. Water Quality	
	• No environmental deficiency was identified during the site inspection.	
	C. Air Quality	
	• No environmental deficiency was identified during the site inspection.	
	D. Noise	
	• No environmental deficiency was identified during the site inspection.	
	E. Waste / Chemical Management	
	• No environmental deficiency was identified during the site inspection.	
	F. Ecology and Fisheries	
	• No environmental deficiency was identified during the site inspection.	
	G. Landscape and Visual	
	• No environmental deficiency was identified during the site inspection.	
	H. Permits /Licences	
	• No environmental deficiency was identified during the site inspection.	
	I. Others	
	No follow-up items from the previous site inspection (ref no.: 210210).	

	Name	Signature	Date
Recorded by	Ms. Echo Hung		18 February 2021
Checked by	Mr. Eric Yan		19 February 2021

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	210223
Date	23 February 2021 (Thursday)
Time	9:30 – 11:00

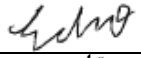
Ref. No.	**Non-Compliance**	**Related Item No.**
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	B. Water Quality	
	• No environmental deficiency was identified during the site inspection.	
	C. Air Quality	
	• No environmental deficiency was identified during the site inspection.	
	D. Noise	
	• No environmental deficiency was identified during the site inspection.	
	E. Waste / Chemical Management	
	• No environmental deficiency was identified during the site inspection.	
	F. Ecology and Fisheries	
	• No environmental deficiency was identified during the site inspection.	
	G. Landscape and Visual	
	• No environmental deficiency was identified during the site inspection.	
	H. Permits /Licences	
	• No environmental deficiency was identified during the site inspection.	
	I. Others	
	No follow-up items from the previous site inspection (ref no.: 210218).	

	Name	Signature	Date
Recorded by	Ms. Echo Hung		23 February 2021
Checked by	Mr. Eric Yan		24 February 2021

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	210202
Date	2 February 2021 (Tuesday)
Time	10:00 – 10:30

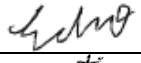
Ref. No.	**Non-Compliance**	**Related Item No.**
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	B. Water Quality	
	• No environmental deficiency was identified during the site inspection.	
	C. Air Quality	
	• No environmental deficiency was identified during the site inspection.	
	D. Noise	
	• No environmental deficiency was identified during the site inspection.	
	E. Waste / Chemical Management	
	• No environmental deficiency was identified during the site inspection.	
	F. Ecology and Fisheries	
	• No environmental deficiency was identified during the site inspection.	
	G. Landscape and Visual	
	• No environmental deficiency was identified during the site inspection.	
	H. Permits /Licences	
	• No environmental deficiency was identified during the site inspection.	
	I. Others	
	No follow-up items from the previous site inspection (ref no.: 210126).	

	Name	Signature	Date
Recorded by	Ms. Echo Hung		2 February 2021
Checked by	Mr. Eric Yan		3 February 2021

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	210209
Date	9 February 2021 (Tuesday)
Time	10:00 – 10:45

Ref. No.	**Non-Compliance**	**Related Item No.**
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	B. Water Quality	
	• No environmental deficiency was identified during the site inspection.	
	C. Air Quality	
	• No environmental deficiency was identified during the site inspection.	
	D. Noise	
	• No environmental deficiency was identified during the site inspection.	
	E. Waste / Chemical Management	
	• No environmental deficiency was identified during the site inspection.	
	F. Ecology and Fisheries	
	• No environmental deficiency was identified during the site inspection.	
	G. Landscape and Visual	
	• No environmental deficiency was identified during the site inspection.	
	H. Permits /Licences	
	• No environmental deficiency was identified during the site inspection.	
	I. Others	
	No follow-up items from the previous site inspection (ref no.: 210202).	

	Name	Signature	Date
Recorded by	Ms. Echo Hung		9 February 2021
Checked by	Mr. Eric Yan		10 February 2021

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	210218
Date	18 February 2021 (Thursday)
Time	10:30 – 11:30

Ref. No.	**Non-Compliance**	**Related Item No.**
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	B. Water Quality	
	• No environmental deficiency was identified during the site inspection.	
	C. Air Quality	
	• No environmental deficiency was identified during the site inspection.	
	D. Noise	
	• No environmental deficiency was identified during the site inspection.	
	E. Waste / Chemical Management	
	• No environmental deficiency was identified during the site inspection.	
	F. Ecology and Fisheries	
	• No environmental deficiency was identified during the site inspection.	
	G. Landscape and Visual	
	• No environmental deficiency was identified during the site inspection.	
	H. Permits /Licences	
	• No environmental deficiency was identified during the site inspection.	
	I. Others	
	No follow-up items from the previous site inspection (ref no.: 210209).	

	Name	Signature	Date
Recorded by	Ms. Echo Hung		18 February 2021
Checked by	Mr. Eric Yan		19 February 2021

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	210223
Date	23 February 2021 (Tuesday)
Time	10:30 – 11:30

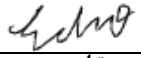
Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	B. Water Quality	
	• No environmental deficiency was identified during the site inspection.	
	C. Air Quality	
	• No environmental deficiency was identified during the site inspection.	
	D. Noise	
	• No environmental deficiency was identified during the site inspection.	
	E. Waste / Chemical Management	
	• No environmental deficiency was identified during the site inspection.	
	F. Ecology and Fisheries	
	• No environmental deficiency was identified during the site inspection.	
	G. Landscape and Visual	
	• No environmental deficiency was identified during the site inspection.	
	H. Permits /Licences	
	• No environmental deficiency was identified during the site inspection.	
	I. Others	
	No follow-up items from the previous site inspection (ref no.: 210218).	

	Name	Signature	Date
Recorded by	Ms. Echo Hung		23 February 2021
Checked by	Mr. Eric Yan		24 February 2021

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	210202
Date	2 February 2021 (Tuesday)
Time	10:00 – 10:30

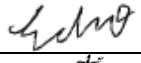
Ref. No.	**Non-Compliance**	**Related Item No.**
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	B. Water Quality	
	• No environmental deficiency was identified during the site inspection.	
	C. Air Quality	
	• No environmental deficiency was identified during the site inspection.	
	D. Noise	
	• No environmental deficiency was identified during the site inspection.	
	E. Waste / Chemical Management	
	• No environmental deficiency was identified during the site inspection.	
	F. Ecology and Fisheries	
	• No environmental deficiency was identified during the site inspection.	
	G. Landscape and Visual	
	• No environmental deficiency was identified during the site inspection.	
	H. Permits /Licences	
	• No environmental deficiency was identified during the site inspection.	
	I. Others	
	No follow-up items from the previous site inspection (ref no.: 210126).	

	Name	Signature	Date
Recorded by	Ms. Echo Hung		2 February 2021
Checked by	Mr. Eric Yan		3 February 2021

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	210209
Date	9 February 2021 (Tuesday)
Time	10:00 – 10:45

Ref. No.	**Non-Compliance**	**Related Item No.**
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	B. Water Quality	
	• No environmental deficiency was identified during the site inspection.	
	C. Air Quality	
	• No environmental deficiency was identified during the site inspection.	
	D. Noise	
	• No environmental deficiency was identified during the site inspection.	
	E. Waste / Chemical Management	
	• No environmental deficiency was identified during the site inspection.	
	F. Ecology and Fisheries	
	• No environmental deficiency was identified during the site inspection.	
	G. Landscape and Visual	
	• No environmental deficiency was identified during the site inspection.	
	H. Permits /Licences	
	• No environmental deficiency was identified during the site inspection.	
	I. Others	
	No follow-up items from the previous site inspection (ref no.: 210202).	

	Name	Signature	Date
Recorded by	Ms. Echo Hung		9 February 2021
Checked by	Mr. Eric Yan		10 February 2021

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	210218
Date	18 February 2021 (Thursday)
Time	10:30 – 11:30

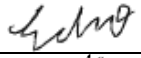
Ref. No.	**Non-Compliance**	**Related Item No.**
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	B. Water Quality	
	• No environmental deficiency was identified during the site inspection.	
	C. Air Quality	
	• No environmental deficiency was identified during the site inspection.	
	D. Noise	
	• No environmental deficiency was identified during the site inspection.	
	E. Waste / Chemical Management	
	• No environmental deficiency was identified during the site inspection.	
	F. Ecology and Fisheries	
	• No environmental deficiency was identified during the site inspection.	
	G. Landscape and Visual	
	• No environmental deficiency was identified during the site inspection.	
	H. Permits /Licences	
	• No environmental deficiency was identified during the site inspection.	
	I. Others	
	No follow-up items from the previous site inspection (ref no.: 210209).	

	Name	Signature	Date
Recorded by	Ms. Echo Hung		18 February 2021
Checked by	Mr. Eric Yan		19 February 2021

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	210223
Date	23 February 2021 (Tuesday)
Time	10:30 – 11:30

Ref. No.	**Non-Compliance**	**Related Item No.**
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	B. Water Quality	
	• No environmental deficiency was identified during the site inspection.	
	C. Air Quality	
	• No environmental deficiency was identified during the site inspection.	
	D. Noise	
	• No environmental deficiency was identified during the site inspection.	
	E. Waste / Chemical Management	
	• No environmental deficiency was identified during the site inspection.	
	F. Ecology and Fisheries	
	• No environmental deficiency was identified during the site inspection.	
	G. Landscape and Visual	
	• No environmental deficiency was identified during the site inspection.	
	H. Permits /Licences	
	• No environmental deficiency was identified during the site inspection.	
	I. Others	
	No follow-up items from the previous site inspection (ref no.: 210218).	

	Name	Signature	Date
Recorded by	Ms. Echo Hung		23 February 2021
Checked by	Mr. Eric Yan		24 February 2021

APPENDIX L
WASTE FLOW TABLE

Name of Department: DSD

Contract No. DC/2018/06

Monthly Summary Waste Flow Table for 2021

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	10.034	0.000	0.000	8.257	1.777	0.606	0.000	0.000	0.002	0.000	0.038
Feb	3.703	0.000	0.000	2.871	0.833	0.071	2.120	0.000	0.000	0.000	0.024
Mar											
Apr											
May											
Jun											
Sub-total	13.737	0.000	0.000	11.127	2.610	0.677	2.120	0.000	0.002	0.000	0.062
Jul											
Aug											
Sep											
Oct											
Nov											
Dec											
Total	13.737	0.000	0.000	11.127	2.610	0.677	2.120	0.000	0.002	0.000	0.062

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 the density of general refuse is 0.9 ton/m3.
4. Assume density of waste oil is assued to be 0.8 kg/L.
5. The inert C&D materials except slurry and bentonite are disposed at Tuen Mun 38.
6. The slurry and bentonite are disposed at Tseung Kwun O 137.
7. The non-inert C&D wastes are disposed at NENT.

Name of Department: DSD

Contract No. DC/2018/07

Monthly Summary Waste Flow Table for 2021

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 '000m3)
Jan	0.836	0.000	0.000	0.000	0.836	0.301	21.25	0.000	0.002	0.000	0.006
Feb	0.911	0.000	0.000	0.000	0.911	0.376	39.35	0.000	0.000	0.000	0.007
Mar											
Apr											
May											
Jun											
Sub-total	1.747	0.000	0.000	0.000	1.747	0.677	60.60	0.000	0.002	0.000	0.014
Jul											
Aug											
Sep											
Oct											
Nov											
Dec											
Total	1.747	0.000	0.000	0.000	1.747	0.677	60.60	0.000	0.002	0.000	0.014

Notes:

1. Assume the density of soil fill and special waste (i.e. sediment from DSD sedimentation tank) is 2 ton/m3.
2. Assume the density of rock and broken concrete is 2.5 ton/m3
3. Assume the density of general refuse is 0.9 ton/m3
4. Density of waste oil is assued to be 0.8 kg/L. Chemical waste includes waste oil.
5. The inert C&D materials except slurry and bentonite are disposed at Tuen Mun 38
6. The slurry and bentonite are disposed at Tseung Kwun O 137
7. The non-inert C&D wastes, including general refuse & special waste (i.e. sediment from DSD sedimentation tank) are disposed at NENT

Name of Department: ~~ArchSD/CEDD~~/DSD/~~EMSD/HyD/WSD~~ Contract No.: DE/2018/03

Monthly Summary Waste Flow Table for 2021 (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	9.53 T	0	0	0	9.53 T	0	0	0	0	0	0
Feb	13.00T	0	0	0	3.47 T	0	0	0	0	0	0
Mar											
Apr											
May											
June											
Sub-total	13.00T	0	0	0	13.00T	0	0	0	0	0	0
July											
Aug											
Sept											
Oct											
Nov											
Dec											
Total	13.00T	0	0	0	13.00T	0	0	0	0	0	0

Name of Department: DSD Contract No.: DE/2018/04

Monthly Summary Waste Flow Table for 2021 (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 2)	Chemical Waste	Others, e.g. general refuse
	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000 kg)
Jan	230.16	0	0	0	230.16	0	0	0	0	0	1.54
Feb	175.98	0	100	0	75.98	0	0	0	0	0	3.63
Mar											
Apr											
May											
June											
Sub-total	406.14	0	100	0	306.14	0	0	0	0	0	5.17
July											
Aug											
Sept											
Oct											
Nov											
Dec											
Total	406.14	0	100	0	306.14	0	0	0	0	0	5.17

Name of Department: DSD Contract No.: DE/2018/04

Forecast of Total Quantities of C&D Materials to be Generated from the Contract										
Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000 kg)
800	0	200	0	600	0	0	5	0	0	30

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

APPENDIX M
EVENT AND ACTION PLANS

Appendix M - Event Action Plans

Table M-1 Event/Action Plan for Air Quality

Event	Action			
	ET	IEC	ER	Contractor
Action level being exceeded by one sampling	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.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method.	1. Notify Contractor.	1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
Action level being exceeded by two or more consecutive sampling	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,	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.	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented.	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
	arrange meeting with IEC and ER; 8. If exceedance stops, cease additional monitoring.			
Limit level being exceeded by one sampling	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.	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.	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented.	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	1. Notify IEC, ER, Contractor and EPD; 2. Identify source; 3. Repeat measurement to confirm findings;	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consolidation with the	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**
	4. Increase monitoring frequency to daily; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.	necessary to assure their effectiveness and advise the ER accordingly; 3. Supervise the implementation of remedial measures.	IEC, agree with the Contractor on the remedial measures to be implemented; 4. Ensure remedial measures properly implemented; 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.	3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Appendix M - Event Action Plans

Table M-2 Event/Action Plan for Construction Noise

Event	Action			
	ET	IEC	ER	Contractor
Action Level	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.	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.	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.	1. Submit noise mitigation proposals to IEC; 2. Implement noise mitigation proposals.
Limit Level	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	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;	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem;	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**
	Contractor's working procedures to determine possible mitigation to be implemented; 6. Inform IEC, ER and EPD the causes and actions taken for the exceedances; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.	3. Supervise the implementation of remedial measures.	4. Ensure remedial measures properly implemented; 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.	4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Appendix M - Event Action Plans

Table M-3 Event/Action Plan for Ecology

Action Level	Response	Limit Level	Response
Construction Phase			
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	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.	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.	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.	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	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.	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.	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.	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	Dust suppression measures stipulated in the Air Pollution Control (Construction Dust) Regulation and good site practices:	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 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;						^
	Any dusty material remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads;						^
	A stockpile of dusty material should not be extended beyond the pedestrian barriers, fencing or traffic cones;						^
	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;						^
	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;						^
	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.						^
	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;						^

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;						N/A
	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/m² on a skid footing with 25mm thick internal sound absorptive lining.	To minimize construction noise impact arising from the Project at the affected noise sensitive receivers (NSRs)	Contractor	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3	EIAO-TM, Noise Control Ordinance (NCO)	^
S3.2.1.2	Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program.	To minimize construction noise impact arising from the Project at the affected NSRs	Contractor	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3	EIAO-TM, NCO	^
	Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program.						^
	Mobile plant, if any, should be sited as far away from NSRs as possible.						^
	Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum.						^
	Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.						^
	Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities.						N/A

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

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

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve	Status
Water Quality Impact							
S5.2.2.1	Construction Site Runoff Practices and measures provided in the Practice Note for Professional Persons on Construction Site Drainage, (PROPECC PN1/94) should be followed where applicable.	Control construction runoff	Contractors	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3	EIAO-TM, WPCO, EIAO	^
S5.2.2.2 – S5.2.2.3	Portable chemical toilets and sewage holding tanks should be provided for handling the construction sewage generated by the workforce. A licensed Contractor should be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance.	Handling of site sewage	Contractors	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3	EIAO-TM, WPCO, EIAO	^
	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						^

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

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

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

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve	Status
Landscape and Visual							
S7.3.1.1	For areas unavoidably disturbed by the Project on a short term basis e.g. works areas, the general principle to try and restore these to their former state to suit future land use, should be adhered to.	Minimize the impact to the landscape and visual	Contractor	Work Sites	Prior to construction and construction phase		N/A
	With regard to topsoil, where identified, it should be stripped, treated appropriately, and where suitable and practical stored for re-use in the construction of the soft landscape works such as roadside amenity strips, and open space sites.						N/A
S7.3.2.1	MM4 – Tree Protection & Preservation 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.	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	MM5 - Tree Transplantation Trees unavoidably affected by the Project works should be transplanted where practical. Trees should be transplanted straight to their final receptor site and not held in a temporary nursery as far as possible. A detailed Tree Transplanting Specification shall be provided in the Contract Specification, where applicable. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the project programme. A detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBTC 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.	Transplant Trees where suitable for transplantation	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 HyD HQ/GN/13 Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit	^
S7.3.2.1	MM6 - Slope Landscaping 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 recourses and charter. Woodland tree seedings and/or shrubs should be planted where slope gradient and site conditions allow.	To avoid substantial slope cutting and fill slopes. To prevent erosion and subsequent loss of landscape resources and character. To ensure man-made slopes are as visually amenable as possible.	Designer / Contractor	Work Sites	Prior to construction, construction phase and operation phase	GEO Publication (1999) - Use of Vegetation as Surface Protection on Slope; GEO Publication No. 1/2011-Technical Guidelines on Landscape Treatment for Slopes	N/A
	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.						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	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 *Melastoma malabathricum, Diospyros vaccinioides, Gardenia jasminoides, Ixora chinensis, Ligustrum sinense, Litsea rotundifolia, Melastoma dodecandrum, Atalantia buxifolia, Rhodomyrtus tomentosa, Rhaphiolepis indica,* and *Rhododendron simsii* are suggested.						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 N/A(1)	Not applicable at this stage; Not observed;
*	Recommendation was made during site audit but improved/retified by the contractor;
#	Recommendation was made during site audit but not yet improved/retified by the contractor;
X	Non-compliance of mitigation measure;
●	Non-compliance but rectified by the contractor.

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

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: February 2021

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	• 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 (CIR) was submitted in April 2020

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

Log Ref.	Location	Received Date	Details of Complaint/Warning/Summon and Prosecution	Investigation/Mitigation Action	Status
2	SWHEPP	19 February 2021	Significant odour nuisance was suspected to be emitted from the construction activities of SWHEPP	• Ensured only PMEs with valid NRMM label were used on-site • Conducted regular visual checking against emission quality of exhaust pipe of equipment by using the Ringlemann Chart • Used ULSD for diesel-powered equipment • Provided water spraying and water sprinklers system for haul road access and demolition works • Used battery powered solution to provide power to the tower crane • Provided cover for all rubbish bins on-site • Separated general refuse from construction waste	CIR was submitted in March 2021

Remarks: 1 environmental complaint was received in the reporting period.
No 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: February 2021

(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
No Action Level of ecological monitoring was triggered in the reporting month.
One (1) Limit Level of ecological monitoring was triggered in the reporting month.

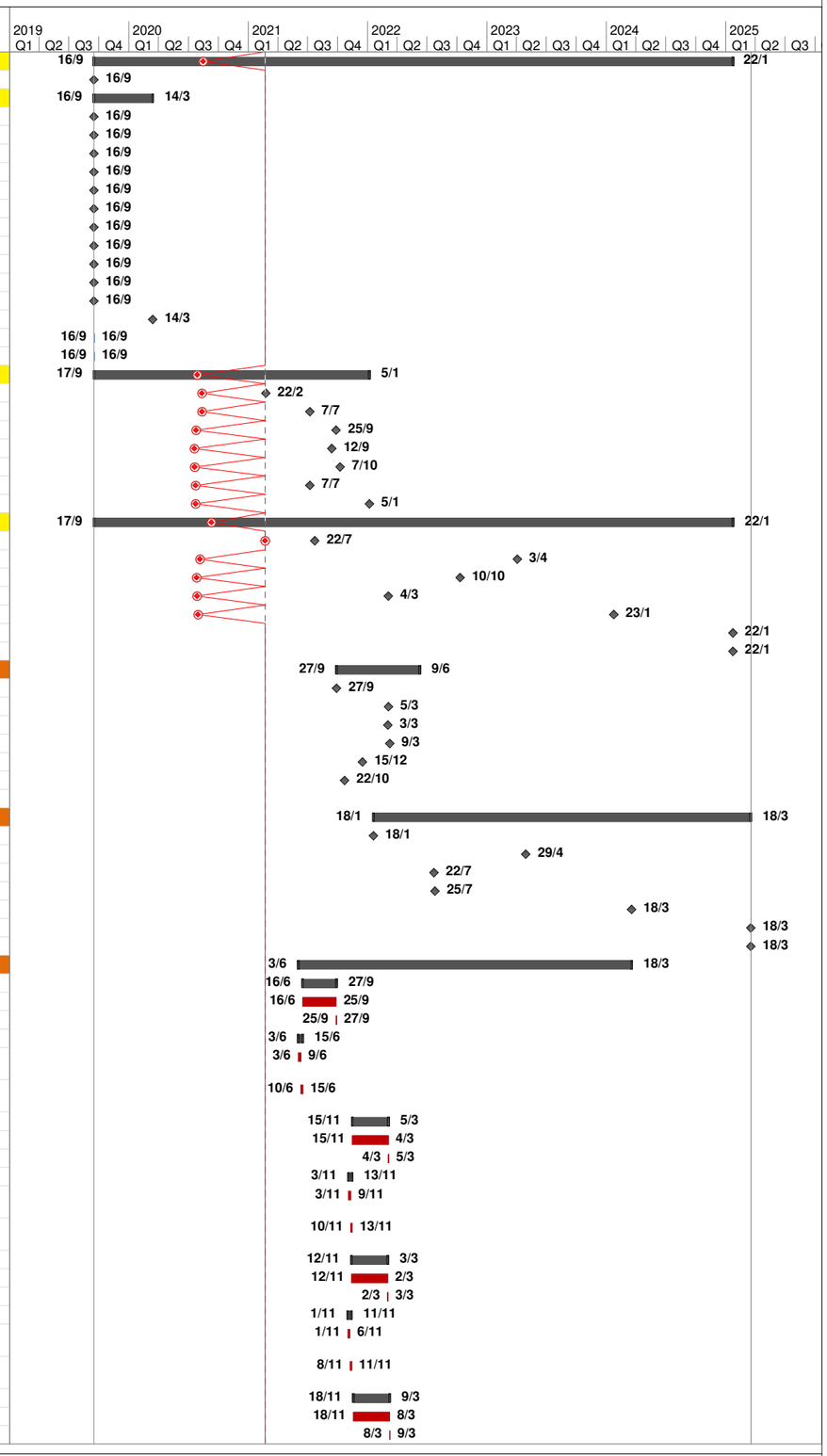
APPENDIX Q
TENTATIVE CONSTRUCTION PROGRAMME

Contract No.: DC/2018/06
Contract Title: Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1
- Civil Works for Sludge Treatment Facilities and 132kV Primary Substation

Updated Programme (Status Date: 28/02/2021)

群利－俊和聯營體
KL－CW JV

ID	KD	Task Name	Duration	Start	Finish	Actual Start	Actual Finish	Total Slack	Predecessors	Successors	% Comple	Time Risk Allowance
1		**Contract Dates**	**1956 days**	**Mon 16/9/19**	**Wed 22/1/25**	**Mon 16/9/19**	**NA**	**0 days**			**36%**	
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,(	100%	
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%**	
4		Portion A-1	0 days	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%	
5		Portion A-2	0 days	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2FS+181 days		100%	
6		Portion C-1A	0 days	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%	
7		Portion C-1B	0 days	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%	
8		Portion C-2A	0 days	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%	
9		Portion C-2B	0 days	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%	
10		Portion C-2C	0 days	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%	
11		Portion C-2D	0 days	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%	
12		Portion C-3	0 days	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%	
13		Portion C-4	0 days	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%	
14		Portion C-5	0 days	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%	
15		Portion C-6	0 days	Sat 14/3/20	Sat 14/3/20	Sat 14/3/20	Sat 14/3/20	0 days	2FS+181 days	442,417	100%	
16		Works Area WA1	1 day	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%	
17		Works Area WA2-A	1 day	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%	
18		**Key Date (cal. day)**	**842 days**	**Tue 17/9/19**	**Wed 5/1/22**	**Tue 17/9/19**	**NA**	**0 days**			**45%**	
19		KD1A (525 days after starting date)	525 days	Tue 17/9/19	Mon 22/2/21	Tue 17/9/19	NA	0 days	2FS+1 day		63%	
20		KD2A (660 days after starting date)	660 days	Tue 17/9/19	Wed 7/7/21	Tue 17/9/19	NA	0 days	2FS+1 day		50%	
21		KD3A (740 days after starting date)	740 days	Tue 17/9/19	Sat 25/9/21	Tue 17/9/19	NA	0 days	2FS+1 day		42%	
22		KD3B (725 days after starting date)	727 days	Tue 17/9/19	Sun 12/9/21	Tue 17/9/19	NA	0 days	2FS+1 day		42%	
23		KD3C (750 days after starting date)	752 days	Tue 17/9/19	Thu 7/10/21	Tue 17/9/19	NA	0 days	2FS+1 day		41%	
24		KD3D (660 days after starting date)	660 days	Tue 17/9/19	Wed 7/7/21	Tue 17/9/19	NA	0 days	2FS+1 day		47%	
25		KD3E (840 days after starting date)	842 days	Tue 17/9/19	Wed 5/1/22	Tue 17/9/19	NA	0 days	2FS+1 day		37%	
26		**Completion Date (cal. day)**	**1955 days**	**Tue 17/9/19**	**Wed 22/1/25**	**Tue 17/9/19**	**NA**	**0 days**			**29%**	
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%	
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%	
29		Section 3 of Works (1,120 days after starting date)	1120 days	Tue 17/9/19	Mon 10/10/22	Tue 17/9/19	NA	0 days	2FS+1 day		28%	
30		Section 4 of Works (900 days after starting date)	900 days	Tue 17/9/19	Fri 4/3/22	Tue 17/9/19	NA	0 days	2FS+1 day		35%	
31		Section 5 of Works (1,590 days after starting date)	1590 days	Tue 17/9/19	Tue 23/1/24	Tue 17/9/19	NA	0 days	2FS+1 day	32,33	20%	
32		Defect Liability Period	365 days	Wed 24/1/24	Wed 22/1/25	NA	NA	0 days	31		0%	
33		Soft Landscape Establishment Works	365 days	Wed 24/1/24	Wed 22/1/25	NA	NA	0 days	31		0%	
34	*	**Planned Completion - Key Date (cal. day)**	**255 days**	**Mon 27/9/21**	**Thu 9/6/22**	**NA**	**NA**	**-216.5 days**			**0%**	
35	KD1A	KD1A (525 days after starting date)	0 days	Mon 27/9/21	Mon 27/9/21	NA	NA	-216.5 days	53FF		0%	
36	KD2A	KD2A (660 days after starting date)	0 days	Sat 5/3/22	Sat 5/3/22	NA	NA	-240.5 days	59FF		0%	
37	KD3A	KD3A (740 days after starting date)	0 days	Thu 3/3/22	Thu 3/3/22	NA	NA	-158.5 days	65FF		0%	
38	KD3B	KD3B (725 days after starting date)	0 days	Wed 9/3/22	Wed 9/3/22	NA	NA	-179.5 days	71FF		0%	
39	KD3C	KD3C (750 days after starting date)	0 days	Wed 15/12/21	Wed 15/12/21	NA	NA	-70.5 days	76FF		0%	
40	KD3D	KD3D (660 days after starting date)	0 days	Fri 22/10/21	Fri 22/10/21	NA	NA	-106.1 days	81FF		0%	
41	KD3E	KD3E (840 days after starting date)	0 days	Thu 9/6/22	Thu 9/6/22	NA	NA	-156.5 days	86FF		0%	
42	*	**Planned Completion - Section of the Works (cal. day)**	**1155 days**	**Tue 18/1/22**	**Tue 18/3/25**	**NA**	**NA**	**-179.5 days**			**0%**	
43	SW1	Section 1 of Works (675 days after starting date)	0 days	Tue 18/1/22	Tue 18/1/22	NA	NA	-179.5 days	91FF		0%	
44	SW2	Section 2 of Works (1,295 days after starting date)	0 days	Sat 29/4/23	Sat 29/4/23	NA	NA	-25.5 days	97FF		0%	
45	SW3	Section 3 of Works (1,120 days after starting date)	0 days	Fri 22/7/22	Fri 22/7/22	NA	NA	80.5 days	103FF		0%	
46	SW4	Section 4 of Works (900 days after starting date)	0 days	Mon 25/7/22	Mon 25/7/22	NA	NA	-142.5 days	109FF	488	0%	
47	SW5	Section 5 of Works (1,590 days after starting date)	0 days	Mon 18/3/24	Mon 18/3/24	NA	NA	-54.5 days	115FF,175FF	48,49	0%	
48		Defect Liability Period	365 days	Mon 18/3/24	Tue 18/3/25	NA	NA	0 days	47		0%	
49		Soft Landscape Establishment Works	365 days	Mon 18/3/24	Tue 18/3/25	NA	NA	0 days	47		0%	
50		**Delaying Events Other than Change of Works Information**	**828.5 days**	**Thu 3/6/21**	**Mon 18/3/24**	**NA**	**NA**	**-176.5 days**			**0%**	
51		Inclement Weather to KD1A	86.5 days	Wed 16/6/21	Mon 27/9/21	NA	NA	-176.5 days			0%	
52		Delay and Disruption of Works before Feb 2021	85.5 days	Wed 16/6/21	Sat 25/9/21	NA	NA	-176.5 days	56	53	0%	
53	KD1A	Delay and Disruption of Works for the month of Feb 2021	1 day	Sat 25/9/21	Mon 27/9/21	NA	NA	-176.5 days	52	35FF	0%	
54		Other Events affected to KD1A	10 days	Thu 3/6/21	Tue 15/6/21	NA	NA	-176.5 days			0%	
55		Unforeseen Social Activities in Hong Kong in November 2019 (NCE no. 0003)	6 days	Thu 3/6/21	Wed 9/6/21	NA	NA	-176.5 days	245,243,213	56	0%	
56		Special Arrangement for Work After CNY due to Spread of Novel Coronavirus (PMI no.005)	4 days	Thu 10/6/21	Tue 15/6/21	NA	NA	-176.5 days	55	52	0%	
57		**Inclement Weather to KD2A**	**89.5 days**	**Mon 15/11/21**	**Sat 5/3/22**	**NA**	**NA**	**-197.5 days**			**0%**	
58		Delay and Disruption of Works before Feb 2021	88.5 days	Mon 15/11/21	Fri 4/3/22	NA	NA	-197.5 days	62	59	0%	
59	KD2A	Delay and Disruption of Works for the month of Feb 2021	1 day	Fri 4/3/22	Sat 5/3/22	NA	NA	-197.5 days	58	36FF	0%	
60		**Other Events affected to KD2A**	**10 days**	**Wed 3/11/21**	**Sat 13/11/21**	**NA**	**NA**	**-197.5 days**			**0%**	
61		Unforeseen Social Activities in Hong Kong in November 2019 (NCE no. 0003)	6 days	Wed 3/11/21	Tue 9/11/21	NA	NA	-197.5 days	517,518,515,513,512,5	62	0%	
62		Special Arrangement for Work After CNY due to Spread of Novel Coronavirus (PMI no.005)	4 days	Wed 10/11/21	Sat 13/11/21	NA	NA	-197.5 days	61	58	0%	
63		**Inclement Weather to KD3A**	**89.5 days**	**Fri 12/11/21**	**Thu 3/3/22**	**NA**	**NA**	**-127.5 days**			**0%**	
64		Delay and Disruption of Works before Feb 2021	88.5 days	Fri 12/11/21	Wed 2/3/22	NA	NA	-127.5 days	68	65	0%	
65	KD3A	Delay and Disruption of Works for the month of Feb 2021	1 day	Wed 2/3/22	Thu 3/3/22	NA	NA	-127.5 days	64	37FF	0%	
66		**Other Events affected to KD3A**	**10 days**	**Mon 1/11/21**	**Thu 11/11/21**	**NA**	**NA**	**-127.5 days**			**0%**	
67		Unforeseen Social Activities in Hong Kong in November 2019 (NCE no. 0003)	6 days	Mon 1/11/21	Sat 6/11/21	NA	NA	-127.5 days	272,273,268	68	0%	
68		Special Arrangement for Work After CNY due to Spread of Novel Coronavirus (PMI no.005)	4 days	Mon 8/11/21	Thu 11/11/21	NA	NA	-127.5 days	67	64	0%	
69		Inclement Weather to KD3B	89.5 days	Thu 18/11/21	Wed 9/3/22	NA	NA	-144.5 days			0%	
70		Delay and Disruption of Works before Feb 2021	88.5 days	Thu 18/11/21	Tue 8/3/22	NA	NA	-144.5 days	73	71	0%	
71	KD3B	Delay and Disruption of Works for the month of Feb 2021	1 day	Tue 8/3/22	Wed 9/3/22	NA	NA	-144.5 days	70	38FF	0%	



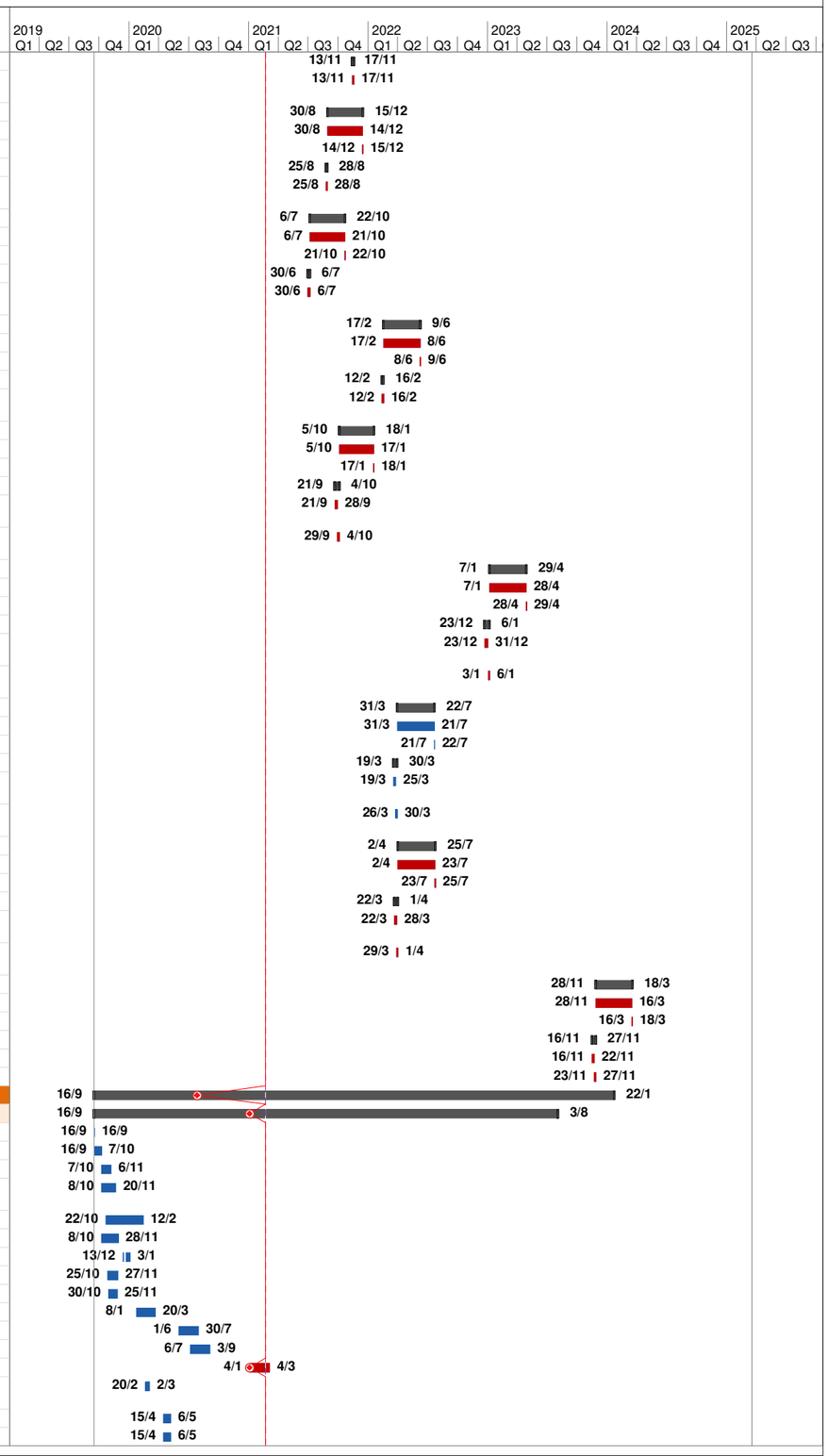
Task — Milestone ◆ — Summary — Critical

Contract No.: DC/2018/06
Contract Title: Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1
- Civil Works for Sludge Treatment Facilities and 132kV Primary Substation

Updated Programme (Status Date: 28/02/2021)

群利－俊和聯營體
KL－CW JV

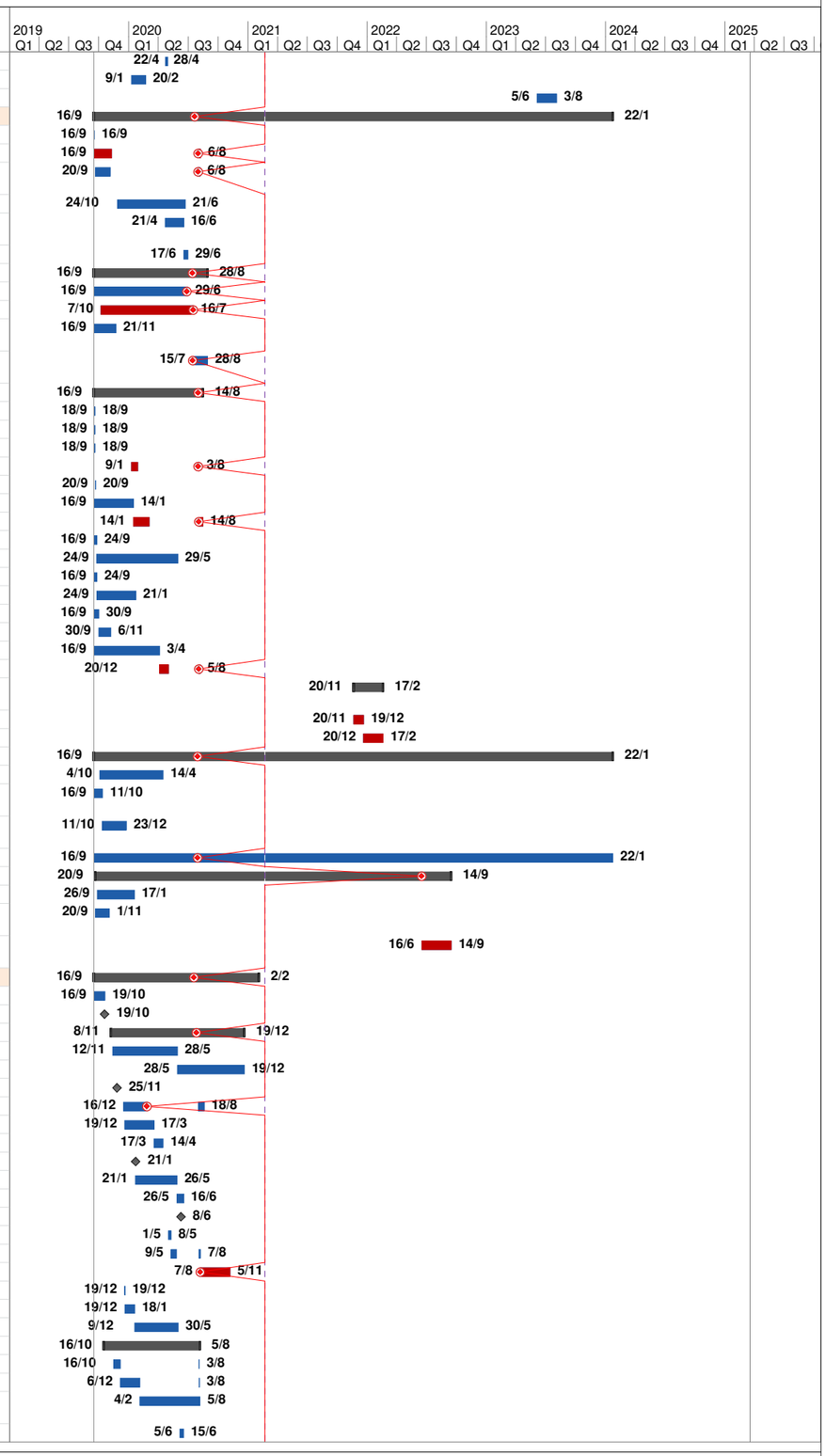
ID	KD	Task Name	Duration	Start	Finish	Actual Start	Actual Finish	Total Slack	Predecessors	Successors	% Comple	Time Risk Allowance
72		Other Events affected to KD3B	4 days	Sat 13/11/21	Wed 17/11/21	NA	NA	-144.5 days			0%	
73		Special Arrangement for Work After CNY due to Spread of Novel Coronavirus (PMI no.005)	4 days	Sat 13/11/21	Wed 17/11/21	NA	NA	-144.5 days	293,294	70	0%	
74		Inclement Weather to KD3C	89.5 days	Mon 30/8/21	Wed 15/12/21	NA	NA	-59.5 days			0%	
75		Delay and Disruption of Works before Feb 2021	88.5 days	Mon 30/8/21	Tue 14/12/21	NA	NA	-59.5 days	78	76	0%	
76	KD3C	Delay and Disruption of Works for the month of Feb 2021	1 day	Tue 14/12/21	Wed 15/12/21	NA	NA	-59.5 days	75	39FF	0%	
77		Other Events affected to KD3C	4 days	Wed 25/8/21	Sat 28/8/21	NA	NA	-59.5 days			0%	
78		Special Arrangement for Work After CNY due to Spread of Novel Coronavirus (PMI no.005)	4 days	Wed 25/8/21	Sat 28/8/21	NA	NA	-59.5 days	306,307	75	0%	
79		Inclement Weather to KD3D	89.5 days	Tue 6/7/21	Fri 22/10/21	NA	NA	-88.1 days			0%	
80		Delay and Disruption of Works before Feb 2021	88.5 days	Tue 6/7/21	Thu 21/10/21	NA	NA	-88.1 days	83	81	0%	
81	KD3D	Delay and Disruption of Works for the month of Feb 2021	1 day	Thu 21/10/21	Fri 22/10/21	NA	NA	-88.1 days	80	40FF	0%	
82		Other Events affected to KD3D	4 days	Wed 30/6/21	Tue 6/7/21	NA	NA	-88.1 days			0%	
83		Special Arrangement for Work After CNY due to Spread of Novel Coronavirus (PMI no.005)	4 days	Wed 30/6/21	Tue 6/7/21	NA	NA	-88.1 days	334FF,335FF	80	0%	
84		Inclement Weather to KD3E	89.5 days	Thu 17/2/22	Thu 9/6/22	NA	NA	-124.5 days			0%	
85		Delay and Disruption of Works before Feb 2021	88.5 days	Thu 17/2/22	Wed 8/6/22	NA	NA	-124.5 days	88	86	0%	
86	KD3E	Delay and Disruption of Works for the month of Feb 2021	1 day	Wed 8/6/22	Thu 9/6/22	NA	NA	-124.5 days	85	41FF	0%	
87		Other Events affected to KD3E	4 days	Sat 12/2/22	Wed 16/2/22	NA	NA	-124.5 days			0%	
88		Special Arrangement for Work After CNY due to Spread of Novel Coronavirus (PMI no.005)	4 days	Sat 12/2/22	Wed 16/2/22	NA	NA	-124.5 days	354,348,392,397,412,	-85	0%	
89		Inclement Weather to Section 1 of the Works	86.5 days	Tue 5/10/21	Tue 18/1/22	NA	NA	-147.5 days			0%	
90		Delay and Disruption of Works before Feb 2021	85.5 days	Tue 5/10/21	Mon 17/1/22	NA	NA	-147.5 days	94	91	0%	
91	SW1	Delay and Disruption of Works for the month of Feb 2021	1 day	Mon 17/1/22	Tue 18/1/22	NA	NA	-147.5 days	90	43FF	0%	
92		Other Events affected to Section 1 of the Works	10 days	Tue 21/9/21	Mon 4/10/21	NA	NA	-147.5 days			0%	
93		Unforeseen Social Activities in Hong Kong in November 2019 (NCE no. 0003)	6 days	Tue 21/9/21	Tue 28/9/21	NA	NA	-147.5 days	247,246,439	94	0%	
94		Special Arrangement for Work After CNY due to Spread of Novel Coronavirus (PMI no.005)	4 days	Wed 29/9/21	Mon 4/10/21	NA	NA	-147.5 days	93	90	0%	
95		Inclement Weather to Section 2 of the Works	89.5 days	Sat 7/1/23	Sat 29/4/23	NA	NA	-18.5 days			0%	
96		Delay and Disruption of Works before Feb 2021	88.5 days	Sat 7/1/23	Fri 28/4/23	NA	NA	-18.5 days	100	97	0%	
97	SW2	Delay and Disruption of Works for the month of Feb 2021	1 day	Fri 28/4/23	Sat 29/4/23	NA	NA	-18.5 days	96	44FF	0%	
98		Other Events affected to Section 2 of the Works	10 days	Fri 23/12/22	Fri 6/1/23	NA	NA	-18.5 days			0%	
99		Unforeseen Social Activities in Hong Kong in November 2019 (NCE no. 0003)	6 days	Fri 23/12/22	Sat 31/12/22	NA	NA	-18.5 days	520,535,521,523,534	100	0%	
100		Special Arrangement for Work After CNY due to Spread of Novel Coronavirus (PMI no.005)	4 days	Tue 3/1/23	Fri 6/1/23	NA	NA	-18.5 days	99	96	0%	
101		Inclement Weather to Section 3 of the Works	89.5 days	Thu 31/3/22	Fri 22/7/22	NA	NA	65.5 days			0%	
102		Delay and Disruption of Works before Feb 2021	88.5 days	Thu 31/3/22	Thu 21/7/22	NA	NA	65.5 days	106	103	0%	
103	SW3	Delay and Disruption of Works for the month of Feb 2021	1 day	Thu 21/7/22	Fri 22/7/22	NA	NA	65.5 days	102	45FF	0%	
104		Other Events affected to Section 3 of the Works	10 days	Sat 19/3/22	Wed 30/3/22	NA	NA	65.5 days			0%	
105		Unforeseen Social Activities in Hong Kong in November 2019 (NCE no. 0003)	6 days	Sat 19/3/22	Fri 25/3/22	NA	NA	65.5 days	308,309,336,337,276,	106	0%	
106		Special Arrangement for Work After CNY due to Spread of Novel Coronavirus (PMI no.005)	4 days	Sat 26/3/22	Wed 30/3/22	NA	NA	65.5 days	105	102	0%	
107		Inclement Weather to Section 4 of the Works	89.5 days	Sat 2/4/22	Mon 25/7/22	NA	NA	-113.5 days			0%	
108		Delay and Disruption of Works before Feb 2021	88.5 days	Sat 2/4/22	Sat 23/7/22	NA	NA	-113.5 days	112	109	0%	
109	SW4	Delay and Disruption of Works for the month of Feb 2021	1 day	Sat 23/7/22	Mon 25/7/22	NA	NA	-113.5 days	108	46FF	0%	
110		Other Events affected to Section 4 of the Works	10 days	Tue 22/3/22	Fri 1/4/22	NA	NA	-113.5 days			0%	
111		Unforeseen Social Activities in Hong Kong in November 2019 (NCE no. 0003)	6 days	Tue 22/3/22	Mon 28/3/22	NA	NA	-113.5 days	373,378,478,475,476,	112	0%	
112		Special Arrangement for Work After CNY due to Spread of Novel Coronavirus (PMI no.005)	4 days	Tue 29/3/22	Fri 1/4/22	NA	NA	-113.5 days	111	108	0%	
113		Inclement Weather to Section 5 of the Works	89.5 days	Tue 28/11/23	Mon 18/3/24	NA	NA	-43.5 days			0%	
114		Delay and Disruption of Works before Feb 2021	88.5 days	Tue 28/11/23	Sat 16/3/24	NA	NA	-43.5 days	118	115	0%	
115	SW5	Delay and Disruption of Works for the month of Feb 2021	1 day	Sat 16/3/24	Mon 18/3/24	NA	NA	-43.5 days	114	47FF	0%	
116		Other Events affected to Section 5 of the Works	10 days	Thu 16/11/23	Mon 27/11/23	NA	NA	-43.5 days			0%	
117		Unforeseen Social Activities in Hong Kong in November 2019 (NCE no. 0003)	6 days	Thu 16/11/23	Wed 22/11/23	NA	NA	-43.5 days	483,481,482,484,485,	118	0%	
118		Special Arrangement for Work After CNY due to Spread of Novel Coronavirus (PMI no.005)	4 days	Thu 23/11/23	Mon 27/11/23	NA	NA	-43.5 days	117	114	0%	
119		**Submissions (cal. day)**	**1590 days**	**Mon 16/9/19**	**Mon 22/1/24**	**Mon 16/9/19**	**NA**	**1 day**			**69%**	
120		**Subletting Package**	**1418 days**	**Mon 16/9/19**	**Thu 3/8/23**	**Mon 16/9/19**	**NA**	**104 days**			**84%**	
121		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	122	100%	
122		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	121	124,126,123,125,	100%	
123		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	122		100%	
124		Subletting for Drainage Diversion Works for UV System no.1& Effluent Pumping Station No.1 (NCE no. 3)	44 days	Tue 8/10/19	Wed 20/11/19	Tue 8/10/19	Wed 20/11/19	0 days	122	435	100%	
125		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	122	213	100%	
126		Subletting for Pre-drilling Works (NCE no.3)	52 days	Tue 8/10/19	Thu 28/11/19	Tue 8/10/19	Thu 28/11/19	0 days	122	127SS+15 days,1	100%	
127		Subletting for Pre-bored Socketed Steel H-Pile	13.98 days	Fri 13/12/19	Fri 3/1/20	Fri 13/12/19	Fri 3/1/20	0 days	126SS+15 days	500,257,285,303,	100%	
128		Subletting for Contractor's Designer for Temporary Works (NCE no.3)	32 days	Fri 25/10/19	Wed 27/11/19	Fri 25/10/19	Wed 27/11/19	0 days	126SS+15 days	131,130,144,136	100%	
129		Subletting for Independent Checking Engineer (NCE no.3)	27 days	Wed 30/10/19	Mon 25/11/19	Wed 30/10/19	Mon 25/11/19	0 days	122	231,261,271,288,	100%	
130		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	128	231,261,271,288,	100%	
131		Subletting for R.C Works	60 days	Mon 1/6/20	Thu 30/7/20	Mon 1/6/20	Thu 30/7/20	0 days	128	289,306,320,506,	100%	
132		Subletting for External Waterproofing	60 days	Mon 6/7/20	Thu 3/9/20	Mon 6/7/20	Thu 3/9/20	0 days	2	236,239,242,262,	100%	
133		Subletting for ABWF & BS Works	60 days	Mon 4/1/21	Thu 4/3/21	NA	NA	-93.5 days	122	247,276,296,309,	0%	
134		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	122	435,135	100%	
135		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	134		100%	
136		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	128	478,475,476,477,	100%	



Task ▬ Milestone ◆ Summary ▬ Critical ▬

Updated Programme (Status Date: 28/02/2021)

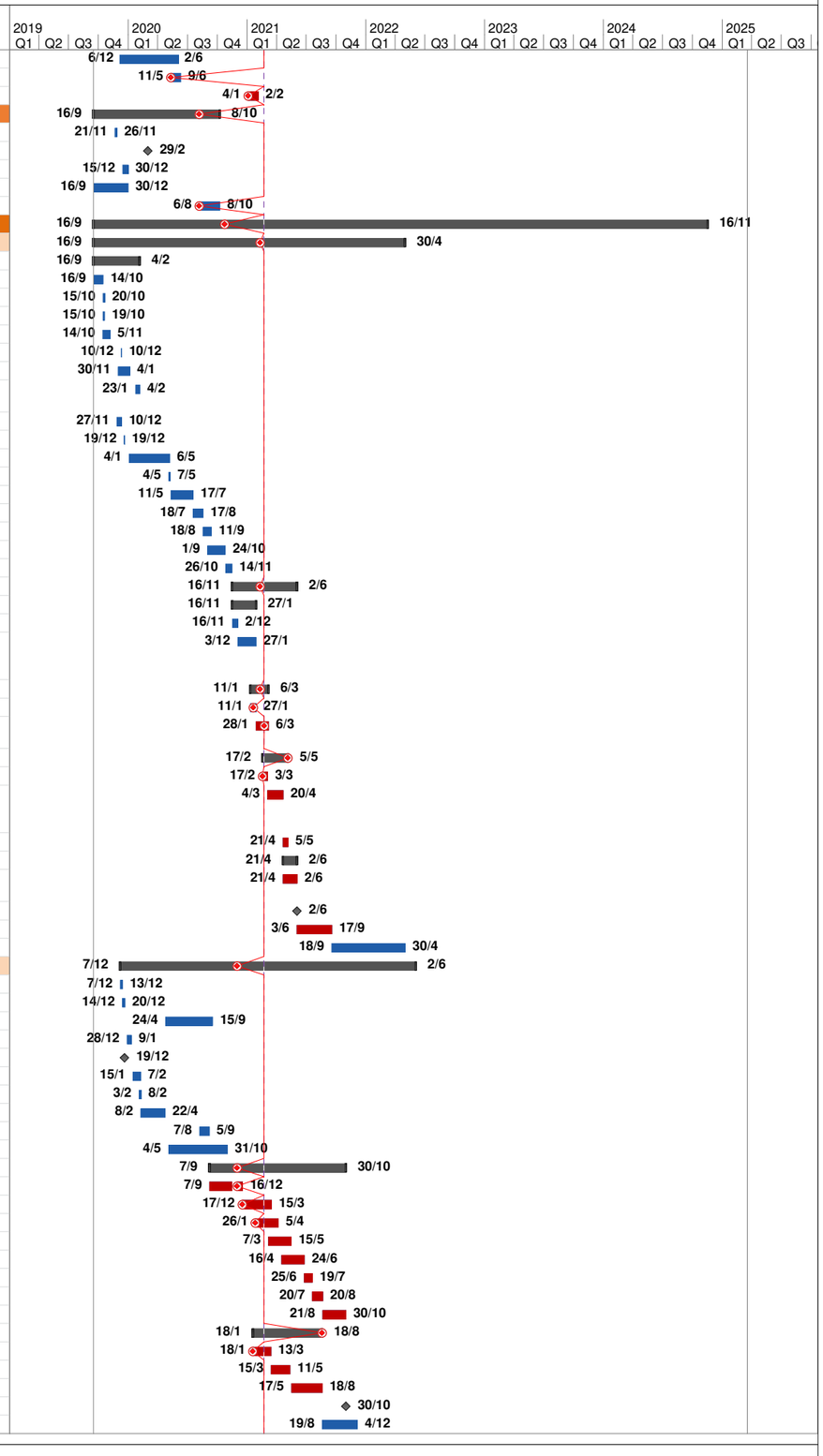
ID	KD	Task Name	Duration	Start	Finish	Actual Start	Actual Finish	Total Slack	Predecessors	Successors	% Comple	Time Risk Allowance
137		Subletting for trenchless construction	7 days	Wed 22/4/20	Tue 28/4/20	Wed 22/4/20	Tue 28/4/20	0 days	122	442	100%	
138		Subletting for Traffic Management Consultant	43 days	Thu 9/1/20	Thu 20/2/20	Thu 9/1/20	Thu 20/2/20	0 days	122	151	100%	
139		Subletting for Hard Landscape and Soft Landscape	60 days	Mon 5/6/23	Thu 3/8/23	NA	NA	104 days	122	489	0%	
140		**Statutory Submission, Submission & Approval**	**1590 days**	**Mon 16/9/19**	**Mon 22/1/24**	**Mon 16/9/19**	**NA**	**1 day**			**62%**	
141		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	253	100%	
142		Prepare and Submit Interface Management Plan	60 days	Mon 16/9/19	Thu 6/8/20	Mon 16/9/19	NA	0 days	2	253	90%	
143		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	16.4 days	2	213	90%	
144		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	128	231,261,271,288,	100%	
145		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	146,435	100%	
146		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	145	435	100%	
147		TTA Management	348 days	Mon 16/9/19	Fri 28/8/20	Mon 16/9/19	NA	193.5 days			85%	
148		Excavation Permit Application for San Wan Road (Portion A)	288 days	Mon 16/9/19	Mon 29/6/20	Mon 16/9/19	NA	253.5 days		524	99%	
149		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		80%	
150		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	435	100%	
151		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	193.5 days	138	526	0%	
152		**Environmental Aspect Submissions**	**334 days**	**Mon 16/9/19**	**Fri 14/8/20**	**Mon 16/9/19**	**NA**	**0 days**	**2**		**98%**	
153		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	253	100%	
154		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	253	100%	
155		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	253	100%	
156		Apply & approve for Effluent Discharge Licence	21 days	Thu 9/1/20	Mon 3/8/20	Thu 9/1/20	NA	0 days	2	253	90%	
157		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	253	100%	
158		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	159	100%	
159		Approval of Construction Noise Permits	60 days	Tue 14/1/20	Fri 14/8/20	Tue 14/1/20	NA	0 days	158	253	80%	
160		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%	
161		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		253	100%	
162		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	163	100%	
163		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	162	253	100%	
164		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	165	100%	
165		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	164	253	100%	
166		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	167	100%	
167		Approval of Temporary Drainage and Management Plan	30 days	Fri 20/12/19	Wed 5/8/20	Fri 20/12/19	NA	0 days	166	435	90%	
168		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%	
169		Prepare and submit arrangement and schedure to FSD	30 days	Sat 20/11/21	Sun 19/12/21	NA	NA	0 days		170	0%	
170		FSD approve the arrangement and schedule	60 days	Mon 20/12/21	Thu 17/2/22	NA	NA	0 days	169		0%	
171		**Trees Related Submissions**	**1590 days**	**Mon 16/9/19**	**Mon 22/1/24**	**Mon 16/9/19**	**NA**	**1 day**			**36%**	
172		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	210	100%	
173		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	210	100%	
174		Prepare and submit and approve the Method Statement of Tree felling, Preservation, Prunning works & Transplanting	74 days	Fri 11/10/19	Mon 23/12/19	Fri 11/10/19	Mon 23/12/19	0 days	2	210,252	100%	
175		Submit Yearly Tree Risk Assessment and Inspection Report	1590 days	Mon 16/9/19	Mon 22/1/24	Mon 16/9/19	NA	1 day	2	47FF	20%	
176		**Others**	**1090.5 days**	**Fri 20/9/19**	**Wed 14/9/22**	**Fri 20/9/19**	**NA**	**0 days**			**64%**	
177		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	223	100%	
178		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	497	100%	
179		Prepare, submit & approve for commencement Works along the riverbank by DSD	90 days	Thu 16/6/22	Wed 14/9/22	NA	NA	0 days		484,485,487,486f days	0%	
180		**Procurement**	**506 days**	**Mon 16/9/19**	**Tue 2/2/21**	**Mon 16/9/19**	**NA**	**-45 days**			**81%**	
181		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	182	100%	
182		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	181	183,200,204,205,	100%	
183		Pipe works material	408 days	Fri 8/11/19	Sat 19/12/20	Fri 8/11/19	NA	0 days	182		78%	
184		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	185	100%	
185		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	184	186	100%	
186		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	185	434,435	100%	
187		Procurement, deliver & testing of concrete pipe material (remaining)	247 days	Mon 16/12/19	Tue 18/8/20	Mon 16/12/19	NA	8.5 days		475	29%	
188		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	189	100%	
189		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	188	190	100%	
190		Procurement, deliver & testing of ductile iorn pipe material	0 days	Wed 18/12/19	Tue 21/1/20	Wed 18/12/19	Tue 21/1/20	0 days	189	477	100%	
191		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	192	100%	
192		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	191	193	100%	
193		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	192	476,477	100%	
194		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	195	100%	
195		Approval of stainless steel pipe material	21 days	Sat 9/5/20	Fri 7/8/20	Sat 9/5/20	Fri 7/8/20	0 days	194	196	100%	
196		Procurement, deliver & testing of stainless steel pipe material	90 days	Fri 7/8/20	Thu 5/11/20	NA	NA	-69.7 days	195	474	0%	
197		Prepare & submit mild steel 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	198	100%	
198		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	197	199	100%	
199		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	198	474	100%	
200		**Prefabricated steel reinforcement**	**294.61 days**	**Wed 16/10/19**	**Wed 5/8/20**	**Wed 16/10/19**	**Wed 5/8/20**	**0 days**	**182**		**100%**	
201		Prepare & submit steel reinforcement material particular	21 days	Wed 16/10/19	Mon 3/8/20	Wed 16/10/19	Mon 3/8/20	0 days	2FS+60 days	202	100%	
202		Approval of prefabricated steel reinforcement material supplier	60 days	Fri 6/12/19	Mon 3/8/20	Fri 6/12/19	Mon 3/8/20	0 days	201	203	100%	
203		Procurement, deliver & testing of prefabricated steel reinforcement material	180 days	Tue 4/2/20	Wed 5/8/20	Tue 4/2/20	Wed 5/8/20	0 days	202	506,418,382,377,	100%	
204		Prepare, submit and approve the water proofing material	11 days	Fri 5/6/20	Mon 15/6/20	Fri 5/6/20	Mon 15/6/20	0 days	182	289,306,320,506,	100%	



Task Milestone Summary Critical

Updated Programme (Status Date: 28/02/2021)

ID	KD	Task Name	Duration	Start	Finish	Actual Start	Actual Finish	Total Slack	Predecessors	Successors	% Comple	Time Risk Allowance
205		Prepare, submit and approve the concrete mix	180 days	Fri 6/12/19	Tue 2/6/20	Fri 6/12/19	Tue 2/6/20	0 days	182	289,306,320,506,	100%	
206		Prepare, submit and approve the metal works material	30 days	Mon 11/5/20	Tue 9/6/20	NA	NA	42.5 days	182	207,289,306,320,	0%	
207		Prepare, submit and approve the ABWF works material	30 days	Mon 4/1/21	Tue 2/2/21	NA	NA	-63.5 days	206,182	247,276,296,309,	0%	
208		**Site Preliminary Works**	**315.1 days**	**Mon 16/9/19**	**Thu 8/10/20**	**Mon 16/9/19**	**NA**	**14.4 days**			**66%**	
209		Mobilization for Hoarding	5 days	Thu 21/11/19	Tue 26/11/19	Thu 21/11/19	Tue 26/11/19	0 days	2	210	100%	
210		Hoarding Erection at Portion C	0 days	Wed 27/11/19	Sat 29/2/20	Wed 27/11/19	Sat 29/2/20	0 days	209,172,173,174,211,		100%	
211		Project Signboard Erection	11 days	Sun 15/12/19	Mon 30/12/19	Sun 15/12/19	Mon 30/12/19	0 days	182	210	100%	
212		Utility applications and Connection	87 days	Mon 16/9/19	Mon 30/12/19	Mon 16/9/19	Mon 30/12/19	0 days	2	213FF	100%	
213		Construction of Site Accommodation in Works Area	52 days	Thu 6/8/20	Thu 8/10/20	NA	NA	14.4 days	143,212FF,125	55	0%	
214	*	**Construction Works of Portion C of the Site**	**1526 days**	**Mon 16/9/19**	**Sat 16/11/24**	**Mon 16/9/19**	**NA**	**0 days**			**13%**	
215	*	**UV System No. 1 & Effluent Pumping Station No. 1**	**776 days**	**Mon 16/9/19**	**Sat 30/4/22**	**Mon 16/9/19**	**NA**	**415.5 days**			**55%**	
216		**Preliminary Works**	**114 days**	**Mon 16/9/19**	**Tue 4/2/20**	**Mon 16/9/19**	**Tue 4/2/20**	**0 days**			**100%**	
217		Site Clearance & Site Set Up (NCE no. 0005, 0006)	23 days	Mon 16/9/19	Mon 14/10/19	Mon 16/9/19	Mon 14/10/19	0 days	2	218	100%	
218		Tree Felling Works	6 days	Tue 15/10/19	Sun 20/10/19	Tue 15/10/19	Sun 20/10/19	0 days	217	219	100%	
219		Trial Pit Excavation & UU Detection Works	5 days	Tue 15/10/19	Sat 19/10/19	Tue 15/10/19	Sat 19/10/19	0 days	218	220	100%	
220		Temporary Footpath Diversion	20 days	Mon 14/10/19	Tue 5/11/19	Mon 14/10/19	Tue 5/11/19	0 days	219	221,224	100%	
221		Temporary diverted foorpath open to public	1 day	Tue 10/12/19	Tue 10/12/19	Tue 10/12/19	Tue 10/12/19	0 days	220	223,222	100%	
222		Additional Liaison and diversion of HyD Street Light Cables (NCE no. 0007)	28 days	Sat 30/11/19	Sat 4/1/20	Sat 30/11/19	Sat 4/1/20	0 days	221	223	100%	
223		Removal of Existing Street light and Provision of Temporary Street light (PMI no.005, NCE no. 0022)	8 days	Thu 23/1/20	Tue 4/2/20	Thu 23/1/20	Tue 4/2/20	0 days	177,221,222	434	100%	
224		Predrilling Works (8no, 1rig, 3days/drillhole/rig) (NCE no. 10)	12 days	Wed 27/11/19	Tue 10/12/19	Wed 27/11/19	Tue 10/12/19	0 days	220	225	100%	
225		Installation of Monitoring Points	1 day	Thu 19/12/19	Thu 19/12/19	Thu 19/12/19	Thu 19/12/19	0 days	224	227,226	100%	
226		Sheetpile Installation (FSP IV, 2200sq.m, 1 Rig)- stage 1 (NCE no. 18A, 22 & 25,)	97 days	Sat 4/1/20	Wed 6/5/20	Sat 4/1/20	Wed 6/5/20	0 days	225	228,230	100%	
227		Setting up plant for pre-bored socked H-pile Installation	4 days	Mon 4/5/20	Thu 7/5/20	Mon 4/5/20	Thu 7/5/20	0 days	225,228SS-5 days		100%	
228		Pre-bored Socketed H-Pile Installation (34 Nos, 1 Rig, 3days/rig/pile) (NCE no. 27, 32 & 41)	57 days	Mon 11/5/20	Fri 17/7/20	Mon 11/5/20	Fri 17/7/20	0 days	127,437,226	229,327,227SS-5	100%	6
229		Pile Loading Test	26 days	Sat 18/7/20	Mon 17/8/20	Sat 18/7/20	Mon 17/8/20	0 days	228,317FS+5 days	346FS+5 days,23	100%	
230		Sheetpile Installation (FSP IV, 2200sq.m, 1 Rig)- stage 2 (NCE no. 10)	22 days	Tue 18/8/20	Fri 11/9/20	Tue 18/8/20	Fri 11/9/20	0 days	229,226	231FS-10 days	100%	
231		ELS Works (incl. Strut (4-layers) Installation & Excavation (3,700 cu.m) (NCE no. 34)	45 days	Tue 1/9/20	Sat 24/10/20	Tue 1/9/20	Sat 24/10/20	0 days	144,130,129,230FS-1	232	100%	
232		Additional sump pits (NCE no. 077)	17 days	Mon 26/10/20	Sat 14/11/20	Mon 26/10/20	Sat 14/11/20	0 days	231	235	100%	14,3
233		**R.C. Structure (370sq.m) (NEC no. 38, 46, 69,72,92,100) (CE no. 26)**	**159 days**	**Mon 16/11/20**	**Wed 2/6/21**	**Mon 16/11/20**	**NA**	**-69 days**			**44%**	**-56**
234		**Below Ground Level Stage no.1 @ -1.10mPD**	**60 days**	**Mon 16/11/20**	**Wed 27/1/21**	**Mon 16/11/20**	**Wed 27/1/21**	**0 days**			**100%**	**5**
235		Base slab Construction (162 sq.m) (NCE no. 77)	15 days	Mon 16/11/20	Wed 2/12/20	Mon 16/11/20	Wed 2/12/20	0 days	232	236	100%	2
236		Walls and Slabs Construction @-1.10mPD to +2.50mPD [CHAX puddle (DN 1200 -> DN1600) (NCE no.0038)] [Revised Structural Layout for foundation (NCE no. 0072)], [NCE no. 46], [NCE no.100]	45 days	Thu 3/12/20	Wed 27/1/21	Thu 3/12/20	Wed 27/1/21	0 days	235,132	238SS+30 days	100%	3,10,12
237		**Below Ground Level Stage no.2 @ +1.50mPD**	**45 days**	**Mon 11/1/21**	**Sat 6/3/21**	**Mon 11/1/21**	**NA**	**0 days**			**63%**	
238		Base slab Construction (170sq.m) (NCE no.115)	15 days	Mon 11/1/21	Wed 27/1/21	Mon 11/1/21	NA	21 days	236SS+30 days	239	50%	
239		Walls and Slabs Construction @+1.5mPD to +4.9mPD [Additional CHA & CHL puddle (DN350), Additional CHLA puddle (DN150) NCE no.0038], [NCE no. 46, 100, 114]	30 days	Thu 28/1/21	Sat 6/3/21	Thu 28/1/21	NA	0 days	238,132	241SS+14 days,472	70%	6,12
240		**Below Ground Level Stage no.3 @ +3.80mPD**	**62 days**	**Wed 17/2/21**	**Wed 5/5/21**	**NA**	**NA**	**-176.5 days**			**0%**	
241		Base slab Construction (15 sq.m + 40 sq.m)	13 days	Wed 17/2/21	Wed 3/3/21	NA	NA	-176.5 days	239SS+14 days	242	0%	
242		Walls and Slabs Construction @+3.80mPD to +7.4mPD [CHAW puddle (DN1200-> DN1400), CHBA puddle (DN300), CHAY puddle (DN700 -> DN800) (NCE no.0038)], [NCE no. 46], [NCE no.100]	37 days	Thu 4/3/21	Tue 20/4/21	NA	NA	-176.5 days	132,241	243,245	0%	9,12
243		Extraction of Sheetpiles	12 days	Wed 21/4/21	Wed 5/5/21	NA	NA	-153.5 days	242	55	0%	
244		**Above Ground Level @ +7.4mPD**	**35 days**	**Wed 21/4/21**	**Wed 2/6/21**	**NA**	**NA**	**-176.5 days**			**0%**	
245	KD1A	Walls, Slabs and staircase Construction @+7.4mPD to 16.4mPD [Additional SP1-3 puddle (DN100 x 2 & DN80) (NCE.0038)], [NCE no. 46], [NCE no.100]	35 days	Wed 21/4/21	Wed 2/6/21	NA	NA	-176.5 days	242	246,247,55	0%	6,12
246	KD1A	**Allow access to Contarctor DE/2018/03 for E&M Installation**	**0 days**	**Wed 2/6/21**	**Wed 2/6/21**	**NA**	**NA**	**-55.5 days**	**245**	**93**	**0%**	
247	SW1	ABWF Works & BS Works & Apply Internal Anti-corrosion Protective Lining	90 days	Thu 3/6/21	Fri 17/9/21	NA	NA	-145.5 days	207,133,245	248,93	0%	
248	SW5	Surrounding Site formation works and road works	180 days	Sat 18/9/21	Sat 30/4/22	NA	NA	415.5 days	247	117	0%	
249	*	**Sludge Digesters and Distribution Chamber**	**733 days**	**Sat 7/12/19**	**Thu 2/6/22**	**Sat 7/12/19**	**NA**	**389.5 days**			**31%**	
250		Site Clearance & Site Set Up	6 days	Sat 7/12/19	Fri 13/12/19	Sat 7/12/19	Fri 13/12/19	0 days	251SF		100%	
251		Trial Pit Excavation & UU Detection Works	6 days	Sat 14/12/19	Fri 20/12/19	Sat 14/12/19	Fri 20/12/19	0 days	253SF	250SF	100%	
252		Tree Transplanting Works (TC080)(NCE no.50 & 51)	120 days	Fri 24/4/20	Tue 15/9/20	Fri 24/4/20	Tue 15/9/20	0 days	174	261FS-8 days	100%	
253		Predrilling Works (50no., 4rig, 3 days/drillhole/rig)(NCE no. 10)	10 days	Sat 28/12/19	Thu 9/1/20	Sat 28/12/19	Thu 9/1/20	0 days	126,141,142,153,154,	254,251SF,259	100%	
254		Installation of Monitoring Points	0 days	Thu 19/12/19	Thu 19/12/19	Thu 19/12/19	Thu 19/12/19	0 days	253	257	100%	
255		Sheetpile Installation- stage 1	24 days	Wed 15/1/20	Fri 7/2/20	Wed 15/1/20	Fri 7/2/20	0 days			100%	
256		Setting up plant for pre-bored socked H-pile Installation	6 days	Mon 3/2/20	Sat 8/2/20	Mon 3/2/20	Sat 8/2/20	0 days		257	100%	
257		Pre-bored Sockedted H-Pile Installation (127nos, 3rig, 3days/rig/pile)	60 days	Sat 8/2/20	Wed 22/4/20	Sat 8/2/20	Wed 22/4/20	0 days	127,254,259SS+20 da	258,417	100%	6
258		Pile Loading Test	26 days	Fri 7/8/20	Sat 5/9/20	Fri 7/8/20	Sat 5/9/20	0 days	257,346SS+10 days	261	100%	
259		Sheetpile Installation- stage 2 (NCE no. 10, 24)	151 days	Mon 4/5/20	Sat 31/10/20	Mon 4/5/20	Sat 31/10/20	0 days	253	257SS+20 days,2	100%	
260		Construction of Digestors	340 days	Mon 7/9/20	Sat 30/10/21	Mon 7/9/20	NA	-127.5 days			12%	
261		ELS Works (incl. Strut (4-layers) Installation & Excavation (17,600 cu.m))	70 days	Mon 7/9/20	Wed 16/12/20	Mon 7/9/20	NA	-134.5 days	144,130,258,129,252F	262,271	80%	6
262		Construction of Digesters Tank no.1 & external waterproofing works	70 days	Thu 17/12/20	Mon 15/3/21	NA	NA	-134.5 days	261,203,132	266,263SS+40 da	0%	10
263		Construction of Digesters Tank no.2 & external waterproofing works	70 days	Tue 26/1/21	Mon 5/4/21	NA	NA	-160.5 days	262SS+40 days	266,264SS+40 da	0%	
264		Construction of Digesters Tank no.3 & external waterproofing works	70 days	Sun 7/3/21	Sat 15/5/21	NA	NA	-160.5 days	263SS+40 days	266,265SS+40 da	0%	
265		Construction of Digesters Tank no.4 & external waterproofing works	70 days	Fri 16/4/21	Thu 24/6/21	NA	NA	-160.5 days	264SS+40 days	266	0%	
266		Water Test	20 days	Fri 25/6/21	Mon 19/7/21	NA	NA	-127.5 days	262,265,264,263	267	0%	
267		Apply Internal Anti-corrosion Protective Lining	28 days	Tue 20/7/21	Fri 20/8/21	NA	NA	-127.5 days	266	268	0%	
268	KD3A	Construction of Roof Slab	58 days	Sat 21/8/21	Sat 30/10/21	NA	NA	-127.5 days	267	273,67	0%	
269		Construction of Distribution Chamber	172 days	Mon 18/1/21	Wed 18/8/21	NA	NA	-67.5 days			0%	
270	SP	Sheet Pile Installation	45 days	Mon 18/1/21	Sat 13/3/21	NA	NA	-63.5 days	259	271	0%	
271		ELS Works (incl. Strut (3-layers) Installation & Excavation)	45 days	Mon 15/3/21	Tue 11/5/21	NA	NA	-63.5 days	144,130,270,129,261	272,381	0%	10
272	KD3A	Construction of Distribution Chamber	78 days	Mon 17/5/21	Wed 18/8/21	NA	NA	-67.5 days	271,264	276,273,275,274,	0%	10
273	KD3A	**Allow access to Contarctor DE/2018/03 for E&M Installation**	**0 days**	**Sat 30/10/21**	**Sat 30/10/21**	**NA**	**NA**	**-127.5 days**	**272,268**	**67**	**0%**	
274		Drainage System (within Bldg/ Structure) Installation	90 days	Thu 19/8/21	Sat 4/12/21	NA	NA	148.5 days	272	105	0%	



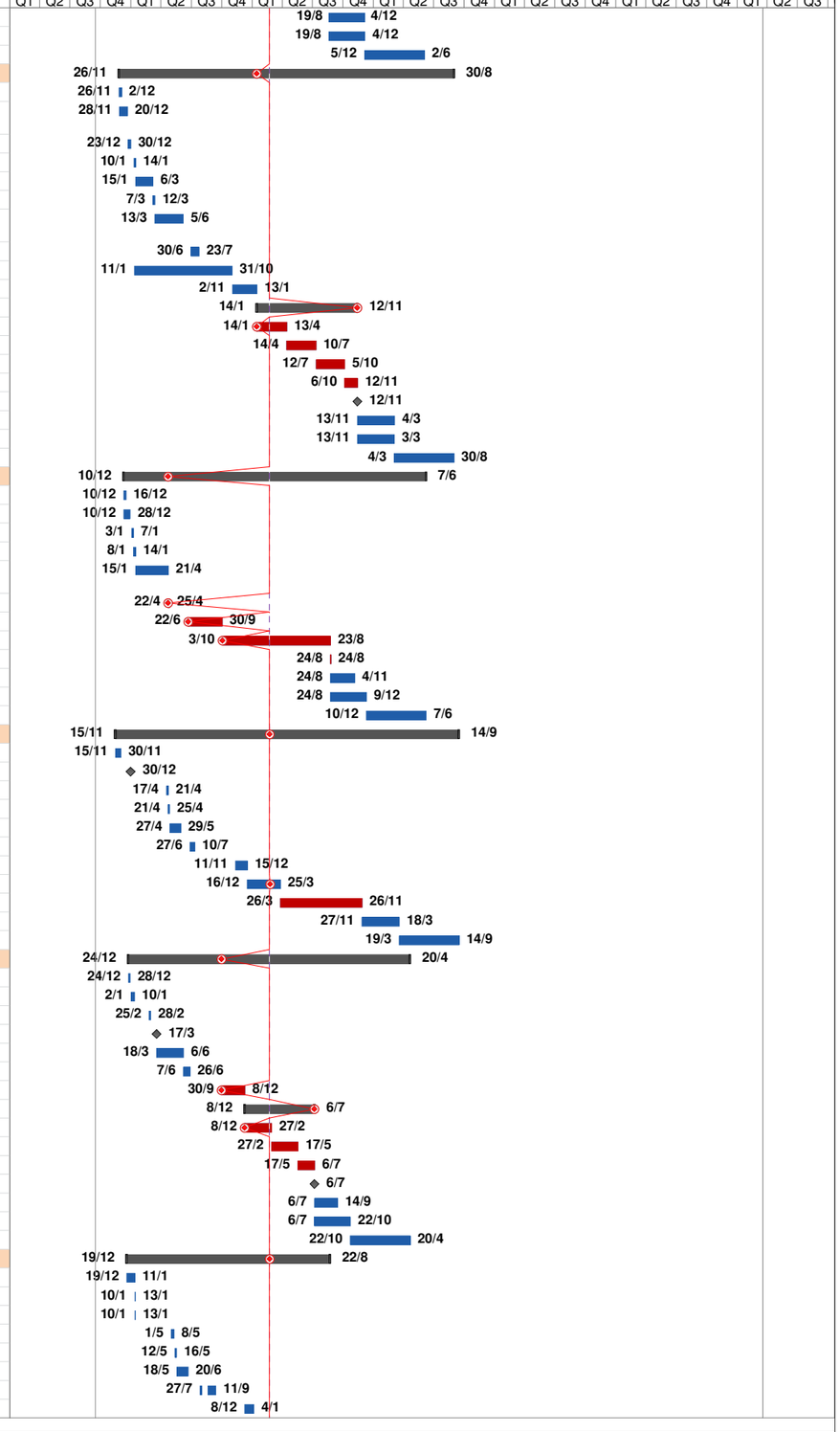
Task Milestone Summary Critical

Contract No.: DC/2018/06
Contract Title: Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1
- Civil Works for Sludge Treatment Facilities and 132kV Primary Substation

Updated Programme (Status Date: 28/02/2021)

群利－俊和聯營體
KL－CW JV

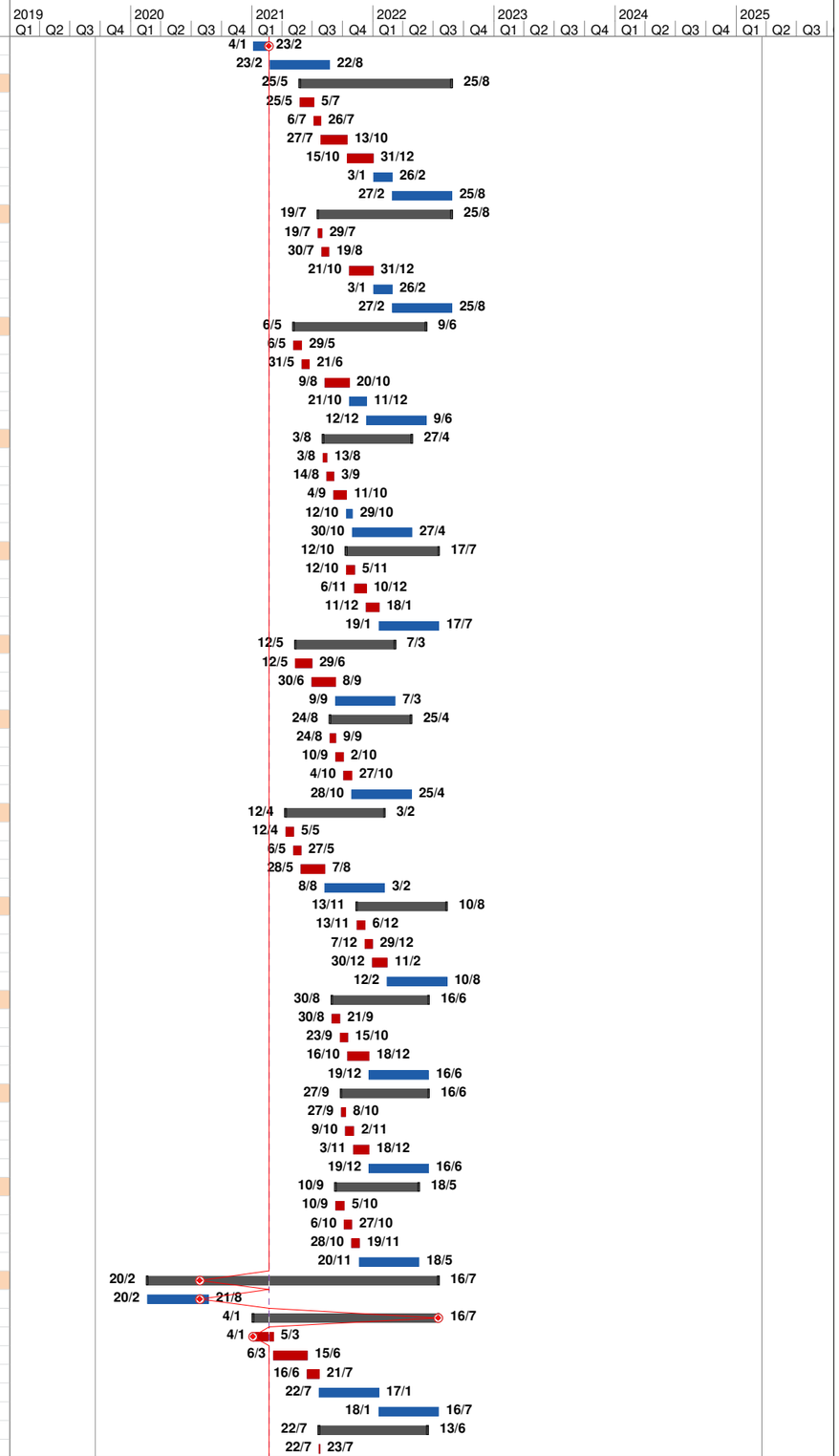
ID	KD	Task Name	Duration	Start	Finish	Actual Start	Actual Finish	Total Slack	Predecessors	Successors	% Comple	Time Risk Allowance
275		FRP Walkway & Miscellanous Installation	90 days	Thu 19/8/21	Sat 4/12/21	NA	NA	148.5 days	272	105	0%	
276	SW3	ABWF Works & BS Works, incl. External Linning	90 days	Thu 19/8/21	Sat 4/12/21	NA	NA	148.5 days	272,207,133	277,105	0%	
277	SW5	Surrounding Site formation works and road works	180 days	Sun 5/12/21	Thu 2/6/22	NA	NA	476.5 days	276	117	0%	
278	*	**Sludge Dewatering Building**	**817 days**	**Tue 26/11/19**	**Tue 30/8/22**	**Tue 26/11/19**	**NA**	**315.5 days**			**44%**	
279		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	280	100%	
280		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	126,279	282,281	100%	
281		Additional Predrilling Works (11no.)	8 days	Mon 23/12/19	Mon 30/12/19	Mon 23/12/19	Mon 30/12/19	0 days	280	282	100%	
282		Installation of Monitoring Points	4 days	Fri 10/1/20	Tue 14/1/20	Fri 10/1/20	Tue 14/1/20	0 days	280,281	287,283	100%	
283		Sheet Pile Installation- stage1 (NCE NO. 18A, 22 & 25, PMI no.005)	52 days	Wed 15/1/20	Fri 6/3/20	Wed 15/1/20	Fri 6/3/20	0 days	282	287,285,284	100%	
284		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	283	285,415SS-14 da	100%	
285		Pre-bored Socketed H-Pile Installation (202 Nos, 4 Rig, 3days/rig/pile) (NCE no. 18A, 25, 27 & 32)	67 days	Fri 13/3/20	Fri 5/6/20	Fri 13/3/20	Fri 5/6/20	0 days	127,284,283	315,286	100%	6
286		Pile Loading Test	20 days	Tue 30/6/20	Thu 23/7/20	Tue 30/6/20	Thu 23/7/20	0 days	285	288	100%	
287		Sheet Pile Installation- stage2 (NCE no. 10, 14) (NCE no. 32 & 41)	239 days	Sat 11/1/20	Sat 31/10/20	Sat 11/1/20	Sat 31/10/20	0 days	282,283	417,288	100%	
288		ELS Works (incl. Strut (3-layers) Installation & Excavation (25,000 cu.m))	60 days	Mon 2/11/20	Wed 13/1/21	Mon 2/11/20	Wed 13/1/21	0 days	144,130,286,129,287	289,290,474,475,	100%	10
289		R.C. Structure	246 days	Thu 14/1/21	Fri 12/11/21	NA	NA	-144.5 days	204,205,206,131,288,	296,295	0%	10
290		Basement Consturction & external waterproofing works	70 days	Thu 14/1/21	Tue 13/4/21	NA	NA	-144.5 days	288	291	0%	
291		Ground Floor Construction @ +7.55mpD	72 days	Wed 14/4/21	Sat 10/7/21	NA	NA	-144.5 days	290	292	0%	
292		1/F Construction @ +15.3m mPD	72 days	Mon 12/7/21	Tue 5/10/21	NA	NA	-144.5 days	291	293	0%	
293	KD3B	Roof Construction @ +25.65mPD	32 days	Wed 6/10/21	Fri 12/11/21	NA	NA	-144.5 days	292	395,294,73	0%	
294	**KD3B**	**Allow access to Contarctor DE/2018/03 for E&M Installation**	**0 days**	**Fri 12/11/21**	**Fri 12/11/21**	**NA**	**NA**	**-144.5 days**	**293**	**73**	**0%**	
295		Allow access to Contarctor DE/2018/03 for E&M Installation	90 days	Sat 13/11/21	Fri 4/3/22	NA	NA	77.5 days	289	105	0%	
296	SW5	ABWF Works & BS Works	89 days	Sat 13/11/21	Thu 3/3/22	NA	NA	78.5 days	289,207,133	297,105	0%	
297	SW5	Surrounding Site formation works and road works	180 days	Fri 4/3/22	Tue 30/8/22	NA	NA	387.5 days	296	117	0%	
298	*	**Combined Heat Power Building**	**734 days**	**Tue 10/12/19**	**Tue 7/6/22**	**Tue 10/12/19**	**NA**	**386.5 days**			**14%**	
299		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	2,300SF		100%	
300		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	126FS+28 days	301,299SF	100%	
301		Installation of Monitoring Points	4 days	Fri 3/1/20	Tue 7/1/20	Fri 3/1/20	Tue 7/1/20	0 days	300	303	100%	
302		Setting up plant for pre-bored socked H-pile Installation (NCE no. 10)	6 days	Wed 8/1/20	Tue 14/1/20	Wed 8/1/20	Tue 14/1/20	0 days		303	100%	
303		Pre-bored Socketed H-Pile Installation (50 Nos, 2 Rig 3days/rig/pile) (NCE no. 18A, 22, 25, PMI no.005)	77 days	Wed 15/1/20	Tue 21/4/20	Wed 15/1/20	Tue 21/4/20	0 days	127,301,302,500	304	100%	6
304		Pile Loading Test	4 days	Wed 22/4/20	Sat 25/4/20	NA	NA	-13.5 days	303	305	0%	
305		Excavation for Pile Cap (2,060 cu.m)	85 days	Mon 22/6/20	Wed 30/9/20	NA	NA	-59.5 days	144,130,304,129	306	0%	10
306	KD3C	R.C. Structure	263 days	Sat 3/10/20	Mon 23/8/21	NA	NA	-59.5 days	204,205,206,131,305,	308,309,307,385,	0%	10
307	**KD3C**	**Allow access to Contarctor DE/2018/03 for E&M Installation**	**1 day**	**Tue 24/8/21**	**Tue 24/8/21**	**NA**	**NA**	**-59.5 days**	**306**	**78**	**0%**	
308		Drainage System (within Bldg/ Structure) Installation	60 days	Tue 24/8/21	Thu 4/11/21	NA	NA	174.5 days	306	105	0%	
309	SW3	ABWF Works & BS Works & Apply Internal Anti-corrosion Protective Lining	90 days	Tue 24/8/21	Thu 9/12/21	NA	NA	144.5 days	306,207,133	310,105	0%	
310	SW5	Surrounding Site formation works and road works	180 days	Fri 10/12/21	Tue 7/6/22	NA	NA	471.5 days	309	117	0%	
311	*	**Sewage Pumping Station**	**838 days**	**Fri 15/11/19**	**Wed 14/9/22**	**Fri 15/11/19**	**NA**	**303.5 days**			**27%**	
312		Site Clearance & Site Set Up	14 days	Fri 15/11/19	Sat 30/11/19	Fri 15/11/19	Sat 30/11/19	0 days	2	313	100%	
313		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	126FS+14 days,312	314	100%	
314		Installation of Monitoring Points	4 days	Fri 17/4/20	Tue 21/4/20	Fri 17/4/20	Tue 21/4/20	0 days	313		100%	
315		Setting up plant for pre-bored socked H-pile Installation	5 days	Tue 21/4/20	Sat 25/4/20	Tue 21/4/20	Sat 25/4/20	0 days	285	316	100%	
316		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	127,315	317	100%	6
317		Pile Loading Test	11 days	Sat 27/6/20	Fri 10/7/20	Sat 27/6/20	Fri 10/7/20	0 days	316,329FS+5 days	319,229FS+5 day	100%	
318		Sheet Pile Installation	30 days	Wed 11/11/20	Tue 15/12/20	Wed 11/11/20	Tue 15/12/20	0 days	317,259FS+8 days	319	100%	
319		ELS Works (incl. Strut (3-layers) Installation & Excavation (1,440 cu.m))	80 days	Wed 16/12/20	Thu 25/3/21	Wed 16/12/20	Thu 25/3/21	0 days	144,130,317,129,318	320	100%	10
320	KD3E	R.C. Structure & waterproofing works	200 days	Fri 26/3/21	Fri 26/11/21	NA	NA	-64.5 days	204,205,206,131,348,	321,88	0%	10
321	SW3	ABWF Works & BS Works & Apply Internal Anti-corrosion Protective Lining	90 days	Sat 27/11/21	Fri 18/3/22	NA	NA	65.5 days	207,133,320,132	322,105	0%	
322	SW5	Surrounding Site formation works and road works	180 days	Sat 19/3/22	Wed 14/9/22	NA	NA	372.5 days	321	117	0%	
323	*	**Workshop No. 2**	**683.6 days**	**Tue 24/12/19**	**Wed 20/4/22**	**Tue 24/12/19**	**NA**	**424.9 days**			**15%**	
324		Site Clearance & Site Set Up	3 days	Tue 24/12/19	Sat 28/12/19	Tue 24/12/19	Sat 28/12/19	0 days	2	325	100%	
325		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	126,324	326	100%	
326		Installation of Monitoring Points	4 days	Tue 25/2/20	Fri 28/2/20	Tue 25/2/20	Fri 28/2/20	0 days	325	328,327	100%	
327		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	326,228	328	100%	
328		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	127,326,327	329,345	100%	6
329		Pile Loading Test	16 days	Sun 7/6/20	Fri 26/6/20	Sun 7/6/20	Fri 26/6/20	0 days	328,501FS+5 days	330,317FS+5 day	100%	
330		Excavation for Pile Cap (1,800 cu.m)	22 days	Wed 30/9/20	Tue 8/12/20	NA	NA	-88.1 days	144,130,329,129	332,474,475,476,	0%	
331		R.C. Structure	166 days	Tue 8/12/20	Tue 6/7/21	NA	NA	-88.1 days			0%	10
332		Ground Floor Construction @ +6.30mpD	64 days	Tue 8/12/20	Sat 27/2/21	NA	NA	-88.1 days	330,203	333	0%	
333		First Floor Construction @ +13.50mpD	62 days	Sat 27/2/21	Mon 17/5/21	NA	NA	-88.1 days	332	334	0%	
334	KD3D	Roof Construction @+19.00mPD	40 days	Mon 17/5/21	Tue 6/7/21	NA	NA	-88.1 days	333	336,337,335,83FI	0%	
335	**KD3D**	**Allow access to Contarctor DE/2018/03 for E&M Installation**	**0 days**	**Tue 6/7/21**	**Tue 6/7/21**	**NA**	**NA**	**-88.1 days**	**334**	**83FF**	**0%**	
336		Drainage System (within Bldg/ Structure) Installation	60 days	Tue 6/7/21	Tue 14/9/21	NA	NA	215.9 days	334	105	0%	
337	SW3	ABWF Works & BS Works & Apply Internal Anti-corrosion Protective Lining	90 days	Tue 6/7/21	Fri 22/10/21	NA	NA	185.9 days	207,133,334	338,105	0%	
338	SW5	Surrounding Site formation works and road works	180 days	Fri 22/10/21	Wed 20/4/22	NA	NA	519.9 days	337	117	0%	
339	*	**Thermal Hydrolysis Pretreatment**	**494 days**	**Thu 19/12/19**	**Sun 22/8/21**	**Thu 19/12/19**	**NA**	**618.5 days**			**39%**	
340		Site Clearance & Site Set Up	18 days	Thu 19/12/19	Sat 11/1/20	Thu 19/12/19	Sat 11/1/20	0 days	2	341,342	100%	
341		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	126FS+24 days,340	343	100%	
342		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	340	343	100%	
343		Installation of Monitoring Points	6 days	Fri 1/5/20	Fri 8/5/20	Fri 1/5/20	Fri 8/5/20	0 days	341,342	345	100%	
344		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		345	100%	
345		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	127,343,344,328	346	100%	6
346		Pile Loading Test	25 days	Mon 27/7/20	Fri 11/9/20	Mon 27/7/20	Fri 11/9/20	0 days	345,229FS+5 days	347,258SS+10 da	100%	
347		Excavation for Pile Cap (160 cu.m)	20 days	Tue 8/12/20	Mon 4/1/21	Tue 8/12/20	Mon 4/1/21	0 days	144,130,346,330	348	100%	



Task ▬ Milestone ◆ Summary ▬ Critical ▬

Updated Programme (Status Date: 28/02/2021)

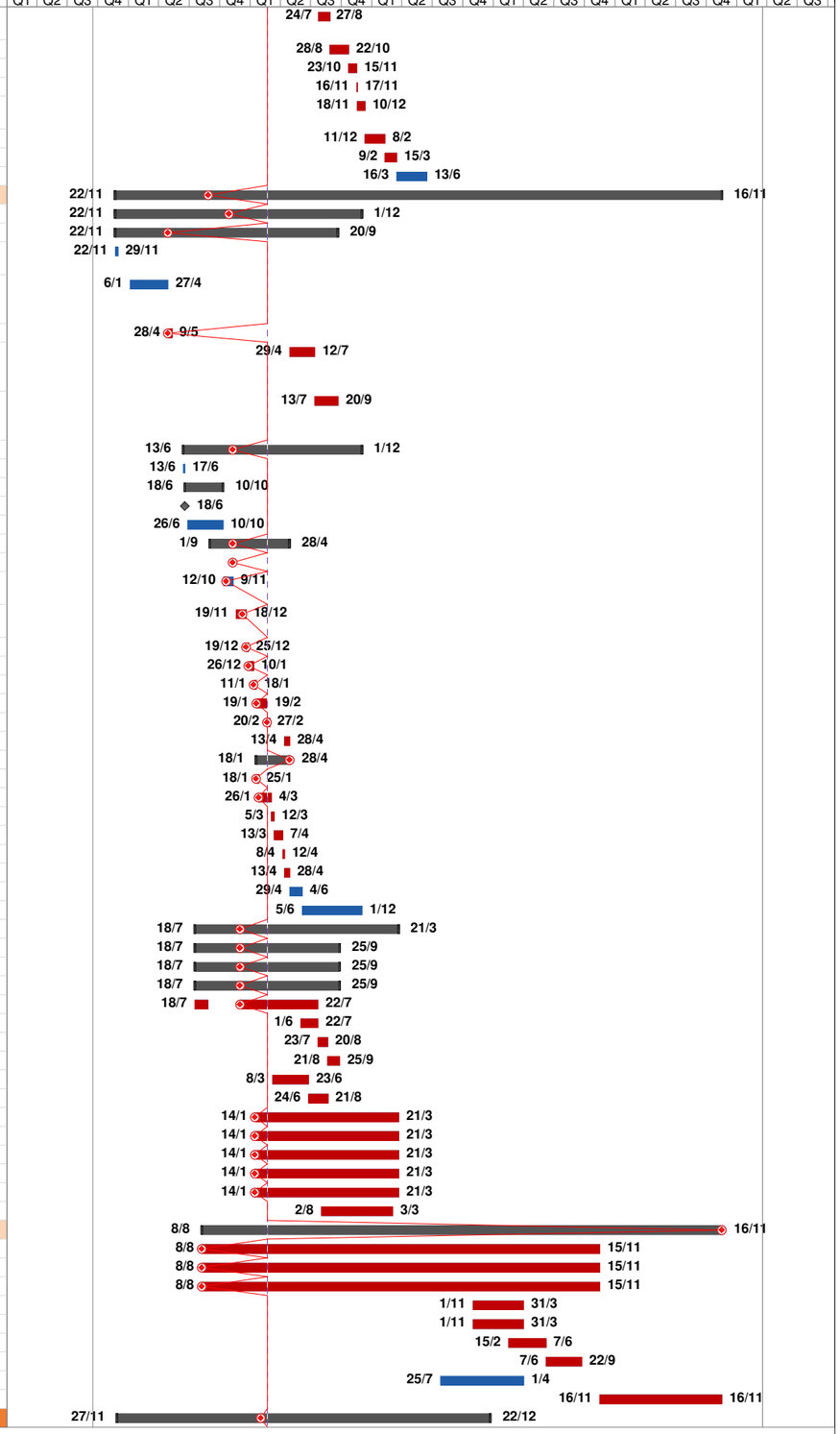
ID	KD	Task Name	Duration	Start	Finish	Actual Start	Actual Finish	Total Slack	Predecessors	Successors	% Comple	Time Risk Allowance
348	KD3E	R.C. Plinth	40 days	Mon 4/1/21	Tue 23/2/21	Mon 4/1/21	Tue 23/2/21	0 days	347	320,349,88	100%	
349	SW5	Surrounding Site formation works and road works	180 days	Tue 23/2/21	Sun 22/8/21	NA	NA	760.9 days	348	117	0%	
350	*	**Ferric Chloride Dosing Facilities**	**374 days**	**Tue 25/5/21**	**Thu 25/8/22**	**NA**	**NA**	**-92.5 days**			**0%**	
351		Excavation for Raft Footing (105 cu.m)	34 days	Tue 25/5/21	Mon 5/7/21	NA	NA	-92.5 days	2	352	0%	
352		Plate Load Test	18 days	Tue 6/7/21	Mon 26/7/21	NA	NA	-92.5 days	351	353	0%	
353		R.C. Structure	66 days	Tue 27/7/21	Wed 13/10/21	NA	NA	-92.5 days	352,131,203	354	0%	5
354	KD3E	Steel Roof Structure (On-site Fabrication)	65 days	Fri 15/10/21	Fri 31/12/21	NA	NA	-92.5 days	353	355,88	0%	
355	SW3	ABWF Works & BS Works	45 days	Mon 3/1/22	Sat 26/2/22	NA	NA	82.5 days	354,207,133	356,105	0%	
356	SW5	Surrounding Site formation works and road works	180 days	Sun 27/2/22	Thu 25/8/22	NA	NA	392.5 days	355	117	0%	
357	*	**Fire Hydrant and Booster Pump Room**	**329 days**	**Mon 19/7/21**	**Thu 25/8/22**	**NA**	**NA**	**-42.5 days**			**0%**	
358		Excavation for Raft Footing (160 cu.m)	10 days	Mon 19/7/21	Thu 29/7/21	NA	NA	-42.5 days	2,364	359,405	0%	
359		Plate Load Test	18 days	Fri 30/7/21	Thu 19/8/21	NA	NA	-42.5 days	358	360	0%	
360	KD3E	R.C. Structure & waterproofing works	60 days	Thu 21/10/21	Fri 31/12/21	NA	NA	-92.5 days	359,131,366,203,132	361,88	0%	5
361	SW3	ABWF Works & BS Works	45 days	Mon 3/1/22	Sat 26/2/22	NA	NA	82.5 days	360,207,133	362,105	0%	
362	SW5	Surrounding Site formation works and road works	180 days	Sun 27/2/22	Thu 25/8/22	NA	NA	392.5 days	361	117	0%	
363	*	**Transformer and Switchroom**	**324 days**	**Thu 6/5/21**	**Thu 9/6/22**	**NA**	**NA**	**-52.5 days**			**0%**	
364		Excavation for Raft Footing (310 cu.m)	20 days	Thu 6/5/21	Sat 29/5/21	NA	NA	-52.5 days	2,390	365,358	0%	
365		Plate Load Test	18 days	Mon 31/5/21	Mon 21/6/21	NA	NA	-52.5 days	364	366	0%	
366	KD3E	R.C. Structure	60 days	Mon 9/8/21	Wed 20/10/21	NA	NA	-92.5 days	365,131,392,203	367,360,88	0%	5
367	SW3	ABWF Works & BS Works	45 days	Thu 21/10/21	Sat 11/12/21	NA	NA	142.5 days	366,207,133	368,105	0%	
368	SW5	Surrounding Site formation works and road works	180 days	Sun 12/12/21	Thu 9/6/22	NA	NA	469.5 days	367	117	0%	
369	*	**Water Meter Cabinet**	**217 days**	**Tue 3/8/21**	**Wed 27/4/22**	**NA**	**NA**	**-63.5 days**			**0%**	
370		Excavation for Raft Footing (6 cu.m)	10 days	Tue 3/8/21	Fri 13/8/21	NA	NA	-63.5 days	2	371	0%	
371		Plate Load Test	18 days	Sat 14/8/21	Fri 3/9/21	NA	NA	-63.5 days	370	372	0%	
372		R.C. Structure	30 days	Sat 4/9/21	Mon 11/10/21	NA	NA	-63.5 days	371,131,203	373,376	0%	3
373	SW4	ABWF Works & BS Works	15 days	Tue 12/10/21	Fri 29/10/21	NA	NA	2.5 days	372,207,133	374,111	0%	
374	SW5	Surrounding Site formation works and road works	180 days	Sat 30/10/21	Wed 27/4/22	NA	NA	512.5 days	373	117	0%	
375	*	**Guard House**	**224 days**	**Tue 12/10/21**	**Sun 17/7/22**	**NA**	**NA**	**-63.5 days**			**0%**	
376		Excavation to Formation	21 days	Tue 12/10/21	Fri 5/11/21	NA	NA	-63.5 days	2,372	377	0%	
377		R.C. Structure	30 days	Sat 6/11/21	Fri 10/12/21	NA	NA	-63.5 days	131,376,203	378	0%	3
378	SW4	ABWF Works & BS Works	30 days	Sat 11/12/21	Tue 18/1/22	NA	NA	-63.5 days	377,207,133	379,111	0%	
379	SW5	Surrounding Site formation works and road works	180 days	Wed 19/1/22	Sun 17/7/22	NA	NA	431.5 days	378	117	0%	
380	*	**Coolers Pumping Station**	**245 days**	**Wed 12/5/21**	**Mon 7/3/22**	**NA**	**NA**	**-54.5 days**			**0%**	
381		Excavation for Raft Footing (185 cu.m)	40 days	Wed 12/5/21	Tue 29/6/21	NA	NA	-54.5 days	2,271	382,400	0%	
382	SW4	R.C. Structure	60 days	Wed 30/6/21	Wed 8/9/21	NA	NA	-54.5 days	381,131,203	402,383,88	0%	5
383	SW5	Surrounding Site formation works and road works	180 days	Thu 9/9/21	Mon 7/3/22	NA	NA	563.5 days	382	117	0%	
384	*	**Waste Gas Buner**	**197 days**	**Tue 24/8/21**	**Mon 25/4/22**	**NA**	**NA**	**-58.5 days**			**0%**	
385		Excavation for Raft Rooting (75cu.m)	15 days	Tue 24/8/21	Thu 9/9/21	NA	NA	-58.5 days	2,306	386,410	0%	
386		Plate Load Test	18 days	Fri 10/9/21	Sat 2/10/21	NA	NA	-58.5 days	385	387	0%	
387	KD3E	R.C. Plinth	20 days	Mon 4/10/21	Wed 27/10/21	NA	NA	-58.5 days	386,131	412,388,88	0%	
388	SW5	Surrounding Site formation works and road works	180 days	Thu 28/10/21	Mon 25/4/22	NA	NA	514.5 days	387	117	0%	
389	*	**Plant Services Water System**	**243 days**	**Mon 12/4/21**	**Thu 3/2/22**	**NA**	**NA**	**-92.5 days**			**0%**	
390		Excavation for Raft Footing (800 cu.m)	20 days	Mon 12/4/21	Wed 5/5/21	NA	NA	-92.5 days	2	391,364	0%	
391		Plate Load Test	18 days	Thu 6/5/21	Thu 27/5/21	NA	NA	-92.5 days	390	392	0%	
392	KD3E	Basement Construction @+1.20mPD	60 days	Fri 28/5/21	Sat 7/8/21	NA	NA	-92.5 days	391,131	366,393,88	0%	
393	SW5	Surrounding Site formation works and road works	180 days	Sun 8/8/21	Thu 3/2/22	NA	NA	595.5 days	392	117	0%	
394	*	**Deodorization System No. 11**	**218 days**	**Sat 13/11/21**	**Wed 10/8/22**	**NA**	**NA**	**-124.5 days**			**0%**	
395		Excavation for Raft Footing (1,280 cu.m)	20 days	Sat 13/11/21	Mon 6/12/21	NA	NA	-124.5 days	2,293	396	0%	
396		Plate Load Test	18 days	Tue 7/12/21	Wed 29/12/21	NA	NA	-124.5 days	395	397	0%	
397	KD3E	R.C. Plinth	34 days	Thu 30/12/21	Fri 11/2/22	NA	NA	-124.5 days	396,131	398,88	0%	
398	SW5	Surrounding Site formation works and road works	180 days	Sat 12/2/22	Wed 10/8/22	NA	NA	407.5 days	397	117	0%	
399	*	**Biogas Holder**	**234 days**	**Mon 30/8/21**	**Thu 16/6/22**	**NA**	**NA**	**-83.5 days**			**0%**	
400		Excavation for Raft Footing (1,120 cu.m)	20 days	Mon 30/8/21	Tue 21/9/21	NA	NA	-83.5 days	2,381	401	0%	
401		Plate Load Test	18 days	Thu 23/9/21	Fri 15/10/21	NA	NA	-83.5 days	400	402	0%	
402	KD3E	R.C. Plinth	55 days	Sat 16/10/21	Sat 18/12/21	NA	NA	-83.5 days	401,131,382	403,88	0%	
403	SW5	Surrounding Site formation works and road works	180 days	Sun 19/12/21	Thu 16/6/22	NA	NA	462.5 days	402	117	0%	
404	*	**H2S Removal System**	**211 days**	**Mon 27/9/21**	**Thu 16/6/22**	**NA**	**NA**	**-83.5 days**			**0%**	
405		Excavation for Raft Footing (396 cu.m)	10 days	Mon 27/9/21	Fri 8/10/21	NA	NA	-83.5 days	2,358	406	0%	
406		Plate Load Test	20 days	Sat 9/10/21	Tue 2/11/21	NA	NA	-83.5 days	405	407	0%	
407	KD3E	R.C. Plinth	40 days	Wed 3/11/21	Sat 18/12/21	NA	NA	-83.5 days	406	408,88	0%	
408	SW5	Surrounding Site formation works and road works	180 days	Sun 19/12/21	Thu 16/6/22	NA	NA	462.5 days	407	117	0%	
409	*	**Deodorization System No. 12**	**200 days**	**Fri 10/9/21**	**Wed 18/5/22**	**NA**	**NA**	**-58.5 days**			**0%**	
410		Excavation to Formation	20 days	Fri 10/9/21	Tue 5/10/21	NA	NA	-58.5 days	2,385	411	0%	
411		Plate Load Test	18 days	Wed 6/10/21	Wed 27/10/21	NA	NA	-58.5 days	410	412	0%	
412	KD3E	R.C. Plinth	20 days	Thu 28/10/21	Fri 19/11/21	NA	NA	-58.5 days	411,131,387	413,88	0%	
413	SW5	Surrounding Site formation works and road works	180 days	Sat 20/11/21	Wed 18/5/22	NA	NA	491.5 days	412	117	0%	
414	*	**Underpass & Pump House**	**711 days**	**Thu 20/2/20**	**Sat 16/7/22**	**Thu 20/2/20**	**NA**	**353.5 days**			**13%**	
415		Temporary Storage for H pile works and access for DSD	150 days	Thu 20/2/20	Fri 21/8/20	Thu 20/2/20	NA	0.5 days	284SS-14 days	417	85%	
416		**Stage 1 (Bay A1 - B2)**	**452 days**	**Mon 4/1/21**	**Sat 16/7/22**	**NA**	**NA**	**-108.5 days**			**0%**	
417		Sheet Pile Installation + ELS Works (incl. Strut (2-layers) Installation & Excavation	50 days	Mon 4/1/21	Fri 5/3/21	NA	NA	-108.5 days	15,287,257,415	418	0%	
418		R.C. Structure	80 days	Sat 6/3/21	Tue 15/6/21	NA	NA	-108.5 days	417,131,203	419	0%	10
419	SW4	Backfilling and Road works reinstatement	30 days	Wed 16/6/21	Wed 21/7/21	NA	NA	-108.5 days	418	423,420,111	0%	
420		Surrounding Site formation works and road works	180 days	Thu 22/7/21	Mon 17/1/22	NA	NA	432.5 days	419	421	0%	
421	SW5	ABWF & BS Works	180 days	Tue 18/1/22	Sat 16/7/22	NA	NA	432.5 days	420	117	0%	
422		**Stage 2 (Bay B3)**	**264 days**	**Thu 22/7/21**	**Mon 13/6/22**	**NA**	**NA**	**-108.5 days**			**0%**	
423		TTA implementation at Chuk Wan Street southeast bound	2 days	Thu 22/7/21	Fri 23/7/21	NA	NA	-108.5 days	419	424	0%	



Task Milestone Summary Critical

Updated Programme (Status Date: 28/02/2021)

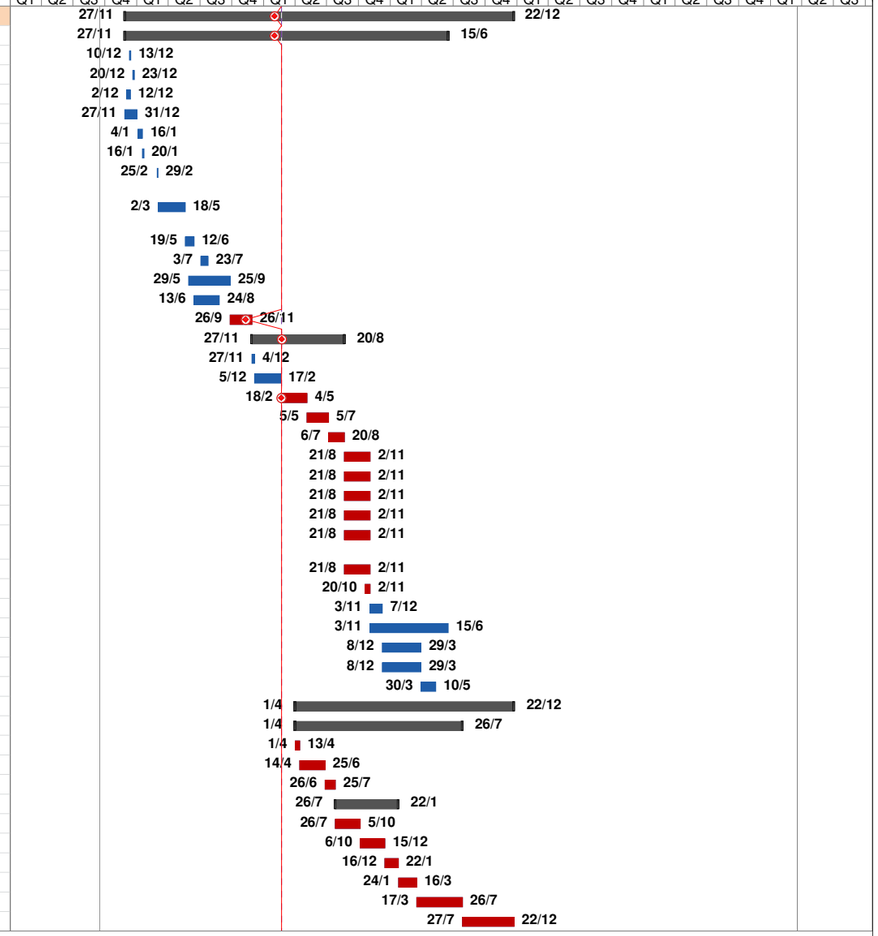
ID	KD	Task Name	Duration	Start	Finish	Actual Start	Actual Finish	Total Slack	Predecessors	Successors	% Comple	Time Risk Allowance
424		Sheet Pile Installation + ELS Works (incl. Strut (2-layers) Installation & Excavation (300 cu.m))	30 days	Sat 24/7/21	Fri 27/8/21	NA	NA	-108.5 days	423	425	0%	
425		R.C. Structure	45 days	Sat 28/8/21	Fri 22/10/21	NA	NA	-108.5 days	424	426	0%	
426		Backfilling and Reinstatement Works	20 days	Sat 23/10/21	Mon 15/11/21	NA	NA	-108.5 days	425	427	0%	
427		TTA Implementation at Chuk Wan Street northwest bound	2 days	Tue 16/11/21	Wed 17/11/21	NA	NA	-108.5 days	426	428	0%	
428		Sheet Pile Installation + ELS Works (incl. Strut (2-layers) Installation & Excavation	20 days	Thu 18/11/21	Fri 10/12/21	NA	NA	-108.5 days	427	429	0%	
429		R.C. Structure	45 days	Sat 11/12/21	Tue 8/2/22	NA	NA	-108.5 days	428	430	0%	
430	SW4	Backfilling and Road works reinstatement	30 days	Wed 9/2/22	Tue 15/3/22	NA	NA	-108.5 days	429	431,111	0%	
431	SW5	ABWF & BS Works	90 days	Wed 16/3/22	Mon 13/6/22	NA	NA	465.5 days	430	117	0%	
432	*	**Pipe Works and Utility Installation**	**1470 days**	**Fri 22/11/19**	**Sat 16/11/24**	**Fri 22/11/19**	**NA**	**0 days**			**4%**	
433		**Pipe Works At Chuk Wan Street**	**601 days**	**Fri 22/11/19**	**Wed 1/12/21**	**Fri 22/11/19**	**NA**	**534.5 days**			**29%**	
434		**Drainage Diversion (Existing Drainage Culvert)**	**542 days**	**Fri 22/11/19**	**Mon 20/9/21**	**Fri 22/11/19**	**NA**	**-147.5 days**	**223,186**		**43%**	
435		Stage 1 - Drainage Diversion of Drainage btw Reconstructed Storm Water Manhole SMH1003177A and Reconstructed Storm Water Manhole MHD33 - A	7 days	Fri 22/11/19	Fri 29/11/19	Fri 22/11/19	Fri 29/11/19	0 days	124,145,150,146,134,	436	100%	
436		Stage 1 - Drainage Diversion of Drainage btw Reconstructed Storm Water Manhole SMH1003177A and Reconstructed Storm Water Manhole MHD33 - A and Additional concrete surround at MH18, MH16 and additional manhole (Type 1) [(PPMI no. 08,015,018,028)]	90 days	Mon 6/1/20	Mon 27/4/20	Mon 6/1/20	Mon 27/4/20	0 days	435	437	100%	
437	KD1A	Stage 1 - Backfilling Works for Drainage Diversion	9 days	Tue 28/4/20	Sat 9/5/20	NA	NA	0 days	436	228	0%	
438	KD1A	Stage 2 - Drainage Diversion of Drainage b/w MHD26 and SMHH1003177A, to Abandon of Exisitng Drainage Culvert (1 Cell, 1000mm x 1150mm) within Portion C-1A & C-1B	60 days	Thu 29/4/21	Mon 12/7/21	NA	NA	-147.5 days	461	439	0%	
439	SW1	Stage 2 - Drainage Diversion of Drainage b/w MHD26 and SMHH1003177A, to Abandon of Exisitng Drainage Culvert (1 Cell, 1000mm x 1150mm) outside Portion C-1A & C-1B	60 days	Tue 13/7/21	Mon 20/9/21	NA	NA	-147.5 days	438	93	0%	
440	**SW4**	**Trenchless Work for Pipe Installation**	**438 days**	**Sat 13/6/20**	**Wed 1/12/21**	**Sat 13/6/20**	**NA**	**534.5 days**			**23%**	
441		Installation of Monitoring Points	4 days	Sat 13/6/20	Wed 17/6/20	Sat 13/6/20	Wed 17/6/20	0 days		443	100%	
442		**Construction of Temporary Jacking Pit**	**95 days**	**Thu 18/6/20**	**Sat 10/10/20**	**Thu 18/6/20**	**Sat 10/10/20**	**0 days**	**15,137**		**100%**	
443		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	2,441	444	100%	
444		Pit Construction (11m x 9m) (NCE no. 44,49)	89 days	Fri 26/6/20	Sat 10/10/20	Fri 26/6/20	Sat 10/10/20	0 days	443	447	100%	18,15
445		**Pipe Jacking Operation**	**193 days**	**Tue 1/9/20**	**Wed 28/4/21**	**Mon 12/10/20**	**NA**	**0 days**			**18%**	
446		**Twin DN900 DI pipe (CHAT & CHAU)**	107 days	Tue 1/9/20	Sat 9/1/21	Mon 12/10/20	NA	0 days			18%	(x)
447		Setting Up of Entrance Ring & Gantry, and Trenchless Equipment (NCE no.55,69)	24 days	Mon 12/10/20	Mon 9/11/20	Mon 12/10/20	NA	24 days	444	448	29%	17
448		Pipe Jacking Operation for CHAT DN900 DI pipe (30m, 3m/day) (NCE no.92)	26 days	Thu 19/11/20	Fri 18/12/20	Thu 19/11/20	NA	-42 days	447	451,449	62%	8,2
449		Setting Up of Entrance Ring & Gantry, and Trenchless Equipment	7 days	Sat 19/12/20	Fri 25/12/20	NA	NA	-49 days	448	450	0%	
450		Pipe Jacking Operation for CHAU DN900 DI pipe (30m, 3m/day)	16 days	Sat 26/12/20	Sun 10/1/21	NA	NA	-49 days	449	451	0%	
451		Installation of grouting pipe and rail	7 days	Mon 11/1/21	Mon 18/1/21	NA	NA	-39 days	448,450	452	0%	
452		Pipe Laying Works	25 days	Tue 19/1/21	Fri 19/2/21	NA	NA	-39 days	451	453	0%	
453		Formwork Erection and grouting works	7 days	Sat 20/2/21	Sat 27/2/21	NA	NA	-39 days	452		0%	
454		Backfilling works	14 days	Tue 13/4/21	Wed 28/4/21	NA	NA	-86 days	461SS		0%	
455		**Pipe Jacking Operation for DN2200 MS pipe (CHAV)**	**80 days**	**Mon 18/1/21**	**Wed 28/4/21**	**NA**	**NA**	**-147.5 days**			**0%**	**(x)**
456		Setting Up of Entrance Ring & Gantry, and Trenchless Equipment	7 days	Mon 18/1/21	Mon 25/1/21	NA	NA	-147.5 days		457	0%	
457		Pipe Jacking Operation for twin DN2200 DI pipe	30 days	Tue 26/1/21	Thu 4/3/21	NA	NA	-147.5 days	456	458	0%	16->30
458		Installation of grouting pipe and rail	7 days	Fri 5/3/21	Fri 12/3/21	NA	NA	-147.5 days	457	459	0%	
459		Pipe Laying Works	18 days	Sat 13/3/21	Wed 7/4/21	NA	NA	-147.5 days	458	460	0%	10->18
460		Formwork Erection and grouting works	4 days	Thu 8/4/21	Mon 12/4/21	NA	NA	-147.5 days	459	462,461	0%	
461		Backfilling works	14 days	Tue 13/4/21	Wed 28/4/21	NA	NA	-147.5 days	460	462,454SS,438	0%	
462		Reinstatement of Temporary Launching Pit	30 days	Thu 29/4/21	Fri 4/6/21	NA	NA	537 days	460,461	463	0%	
463	SW5	Surrounding Site formation works and road works	180 days	Sat 5/6/21	Wed 1/12/21	NA	NA	659.5 days	462	117	0%	
464		**Process Pipeworks, All Sewerage, Utilities & Roadworks in Portion C of the Site**	**498 days**	**Sat 18/7/20**	**Mon 21/3/22**	**Sat 18/7/20**	**NA**	**-113.5 days**			**1%**	
465		Process Pipeworks	355 days	Sat 18/7/20	Sat 25/9/21	Sat 18/7/20	NA	0 days			7%	
466	KD1A	**Connection pipe at UV System no.1 & Effluent Pumping Stataion no.1**	**355 days**	**Sat 18/7/20**	**Sat 25/9/21**	**Sat 18/7/20**	**NA**	**0 days**			**7%**	
467		**Effluent Pipe (aprox. 70m, dia 300 - 1600)**	**355 days**	**Sat 18/7/20**	**Sat 25/9/21**	**Sat 18/7/20**	**NA**	**0 days**			**7%**	
468		Twin DN900 +DN2200 (CHAT, CHAU, CHAV) (+0.2mPD) (NCE, 60,62,66)	220 days	Sat 18/7/20	Thu 22/7/21	Sat 18/7/20	NA	0 days	228	470,469FF	15%	26
469		DN150,350 (CHA, CHL, CHLA) Pipe Laying (+4.8mPD)	40 days	Tue 1/6/21	Thu 22/7/21	NA	NA	0 days	468FF		0%	
470		CHAM, CHAN Pipe Laying (+2.0mPD)	25 days	Fri 23/7/21	Fri 20/8/21	NA	NA	0 days	468	471	0%	
471		Concrete Pipe between MHD26 and SMH1003177A (+3.6mPD)	30 days	Sat 21/8/21	Sat 25/9/21	NA	NA	0 days	470		0%	
472		DN800(CHAY), DN1600 (CHAX), DN350 (CHBA) Pipe Laying (NCE no. 84)	86 days	Mon 8/3/21	Wed 23/6/21	NA	NA	0 days	239	473	0%	30
473		DN1400(CHAW)	50 days	Thu 24/6/21	Sat 21/8/21	NA	NA	0 days	472		0%	
474	SW4	Remaining Effluent Pipes & testing works	350 days	Thu 14/1/21	Mon 21/3/22	NA	NA	-113.5 days	136,288,330,196,199	111	0%	
475	SW4	Stormdrain Pipeworks & testing works	350 days	Thu 14/1/21	Mon 21/3/22	NA	NA	-113.5 days	136,288,330,187	111	0%	
476	SW4	Sewerage Pipeworks, manhole, protective lining & testing works	350 days	Thu 14/1/21	Mon 21/3/22	NA	NA	-113.5 days	136,288,330,193	111	0%	
477	SW4	Watermain Pipeworks & testing works	350 days	Thu 14/1/21	Mon 21/3/22	NA	NA	-113.5 days	136,288,330,190,193	111	0%	
478	SW4	Cable & Other Underground Utility Pipeworks	350 days	Thu 14/1/21	Mon 21/3/22	NA	NA	-113.5 days	136,288,330	111	0%	
479	SW4	Pipe Bridge No.1	175 days	Mon 2/8/21	Thu 3/3/22	NA	NA	-98.5 days	2	111	0%	
480	*	**Remaining Works & Landscape Works**	**1261 days**	**Sat 8/8/20**	**Sat 16/11/24**	**NA**	**NA**	**-43.5 days**			**0%**	
481	SW5	Irrigation System	970 days	Sat 8/8/20	Wed 15/11/23	NA	NA	-43.5 days	2FS+265 days	117	0%	
482	SW5	Hard Landscape Works	970 days	Sat 8/8/20	Wed 15/11/23	NA	NA	-43.5 days	2FS+265 days	117	0%	
483	SW5	Soft Landscape Works	970 days	Sat 8/8/20	Wed 15/11/23	NA	NA	-43.5 days	2FS+265 days	489,117	0%	
484		Outfall for Effluent Pipes	124 days	Tue 1/11/22	Fri 31/3/23	NA	NA	0 days	179	117	0%	
485		Slope Formation Works near Outfall	124 days	Tue 1/11/22	Fri 31/3/23	NA	NA	0 days	179	117	0%	
486		Removal of invasive trees along River Embankment (NCE no. 37)	90 days	Wed 15/2/23	Wed 7/6/23	NA	NA	0 days	179FS+124 days	487	0%	
487	SW5	Retaining Wall along River Embankment, street furniture & road works	90 days	Wed 7/6/23	Fri 22/9/23	NA	NA	0 days	179,486	117	0%	
488	SW5	Remaining Site formation works, road works and boundary fence wall	250 days	Mon 25/7/22	Sat 1/4/23	NA	NA	174 days	46	117	0%	
489		Establishment Works (365 Calendar Days)	291 days	Thu 16/11/23	Sat 16/11/24	NA	NA	0 days	483,139		0%	
490	*	**Construction of Portion A of the Site**	**911 days**	**Wed 27/11/19**	**Thu 22/12/22**	**Wed 27/11/19**	**NA**	**-18.5 days**			**23%**	



Task ▬ Milestone ◆ Summary ▬ Critical ▬

Updated Programme (Status Date: 28/02/2021)

ID	KD	Task Name	Duration	Start	Finish	Actual Start	Actual Finish	Total Slack	Predecessors	Successors	% Comple	Time Risk Allowance
491	*	**CLP 132kV Substation**	**911 days**	**Wed 27/11/19**	**Thu 22/12/22**	**Wed 27/11/19**	**NA**	**-18.5 days**			**23%**	
492		**Internal Works**	**752 days**	**Wed 27/11/19**	**Wed 15/6/22**	**Wed 27/11/19**	**NA**	**140.5 days**			**32%**	
493		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	2	494	100%	
494		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	493	496	100%	
495		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	2	497	100%	
496		Additional Demolition of existing warehouse structure (NCE no.002)	28 days	Wed 27/11/19	Tue 31/12/19	Wed 27/11/19	Tue 31/12/19	0 days	494	497	100%	
497		Predrilling Works (11no., 1rig, 3days/drillhole/rig) (NCE no. 10)	11 days	Sat 4/1/20	Thu 16/1/20	Sat 4/1/20	Thu 16/1/20	0 days	126,495,178,496	498	100%	
498		Installation of Monitoring Points	4 days	Thu 16/1/20	Mon 20/1/20	Thu 16/1/20	Mon 20/1/20	0 days	497	499	100%	
499		Setting up plant for pre-bored socked H-pile Installation (PMI no.005, NCE no. 0022)	5 days	Tue 25/2/20	Sat 29/2/20	Tue 25/2/20	Sat 29/2/20	0 days	498	500	100%	
500		Pre-bored Socketed H-Pile Installation (41 Nos, 2 Rig, 3days/rig/pile) (NCE no. 18A, 19, 25 & 27))	61 days	Mon 2/3/20	Mon 18/5/20	Mon 2/3/20	Mon 18/5/20	0 days	127,499	501,303,503	100%	6
501		Pile Load Test	22 days	Tue 19/5/20	Fri 12/6/20	Tue 19/5/20	Fri 12/6/20	0 days	500	502,329FS+5 day	100%	
502		Sheetpile Installation (NCE no. 10, 23, 36)	18 days	Fri 3/7/20	Thu 23/7/20	Fri 3/7/20	Thu 23/7/20	0 days	501,129	507,505	100%	6
503		CHP Cable Diversion Works (NCE no.23, 36, 32 & 41))	101 days	Fri 29/5/20	Fri 25/9/20	Fri 29/5/20	Fri 25/9/20	0 days	500	505	100%	
504		Watermain diversion and relocation of water meter (NCE no. 15, 36)	60 days	Sat 13/6/20	Mon 24/8/20	Sat 13/6/20	Mon 24/8/20	0 days	501	505	100%	
505		Excavation Works (NCE no.16)	50 days	Sat 26/9/20	Thu 26/11/20	Sat 26/9/20	NA	-72.5 days	502,503,504	506	70%	
506		R.C. Structure (880 sq.m)	215 days	Fri 27/11/20	Fri 20/8/21	Fri 27/11/20	NA	-90 days	204,205,206,131,203,		40%	10
507		Installation of earthmat	7 days	Fri 27/11/20	Fri 4/12/20	Fri 27/11/20	Fri 4/12/20	0 days	204,205,206,131,203,	508	100%	
508		Basement	58 days	Sat 5/12/20	Wed 17/2/21	Sat 5/12/20	Wed 17/2/21	0 days	507	509	100%	
509		Ground Floor	60 days	Thu 18/2/21	Tue 4/5/21	Thu 18/2/21	NA	-197.5 days	508	510	35%	
510		First Floor	50 days	Wed 5/5/21	Mon 5/7/21	NA	NA	-197.5 days	509	511	0%	
511		Roof Floor (461sq.m)	40 days	Tue 6/7/21	Fri 20/8/21	NA	NA	-197.5 days	510	512,517,513,518	0%	
512		ABWF Works	60 days	Sat 21/8/21	Tue 2/11/21	NA	NA	-197.5 days	511,207,133	61	0%	
513		BS Works	60 days	Sat 21/8/21	Tue 2/11/21	NA	NA	-197.5 days	511,133	61	0%	
514		Backfilling reinstatement & road works	60 days	Sat 21/8/21	Tue 2/11/21	NA	NA	-197.5 days	511	61	0%	
515		Installation of telephone line/ direct link for FSD Inspection	60 days	Sat 21/8/21	Tue 2/11/21	NA	NA	-197.5 days	511	61	0%	
516		Building Services Installation Works (incl. Fire Services, Plumbing, Drainage, etc.) & FSD Inspection	60 days	Sat 21/8/21	Tue 2/11/21	NA	NA	-197.5 days	511	61	0%	
517	KD2A	Architectual Works	60 days	Sat 21/8/21	Tue 2/11/21	NA	NA	-197.5 days	511	519,520,61	0%	
518	KD2A	Prehandover to CLP	12 days	Wed 20/10/21	Tue 2/11/21	NA	NA	-197.5 days	511FS+48 days	61	0%	
519		**Handover to CLP for Electrical System Installation**	**30 days**	**Wed 3/11/21**	**Tue 7/12/21**	**NA**	**NA**	**45.5 days**	**517**	**522,521**	**0%**	
520		**E&M Installation, Testing & Commissioning by CLP**	**180 days**	**Wed 3/11/21**	**Wed 15/6/22**	**NA**	**NA**	**140.5 days**	**517**	**99**	**0%**	
521		Testing & Commissioning of the E&M Works	90 days	Wed 8/12/21	Tue 29/3/22	NA	NA	200.5 days	519	99	0%	
522		ABWF Works - External Finishing	90 days	Wed 8/12/21	Tue 29/3/22	NA	NA	45.5 days	519,207,133	523	0%	
523	SW2	Inspection and Handover to CLP	30 days	Wed 30/3/22	Tue 10/5/22	NA	NA	45.5 days	522	535,99	0%	
524		**External Works**	**513 days**	**Thu 1/4/21**	**Thu 22/12/22**	**NA**	**NA**	**-18.5 days**	**148**		**0%**	
525		**Road Widening Works (NCE no. 20)**	**388 days**	**Thu 1/4/21**	**Tue 26/7/22**	**NA**	**NA**	**-18.5 days**			**0%**	
526		Trial Pit Excavation & UU Detection Works	7 days	Thu 1/4/21	Tue 13/4/21	NA	NA	-18.5 days	151	527	0%	
527		Diversion of existing UU (i.e. 3no. Street light)	60 days	Wed 14/4/21	Fri 25/6/21	NA	NA	-18.5 days	526	528	0%	
528		Temporary Site Access	30 days	Sat 26/6/21	Sun 25/7/21	NA	NA	-22.5 days	527	530	0%	
529		Drainage Works	150 days	Mon 26/7/21	Sat 22/1/22	NA	NA	-18.5 days			0%	
530		Trench Excavation and ELS works	60 days	Mon 26/7/21	Tue 5/10/21	NA	NA	-18.5 days	528	531	0%	
531		Pipe Laying Works	60 days	Wed 6/10/21	Wed 15/12/21	NA	NA	-18.5 days	530	532	0%	
532		Backfilling and Reinstatement Works	30 days	Thu 16/12/21	Sat 22/1/22	NA	NA	-18.5 days	531	534,533	0%	
533		Cable & Other Underground Utility Pipeworks	42 days	Mon 24/1/22	Wed 16/3/22	NA	NA	-18.5 days	532	534	0%	
534		Road Works	105 days	Thu 17/3/22	Tue 26/7/22	NA	NA	-18.5 days	532,533	535,99	0%	
535	SW2	Construction of New Boundary Wall	125 days	Wed 27/7/22	Thu 22/12/22	NA	NA	-18.5 days	523,534	99	0%	

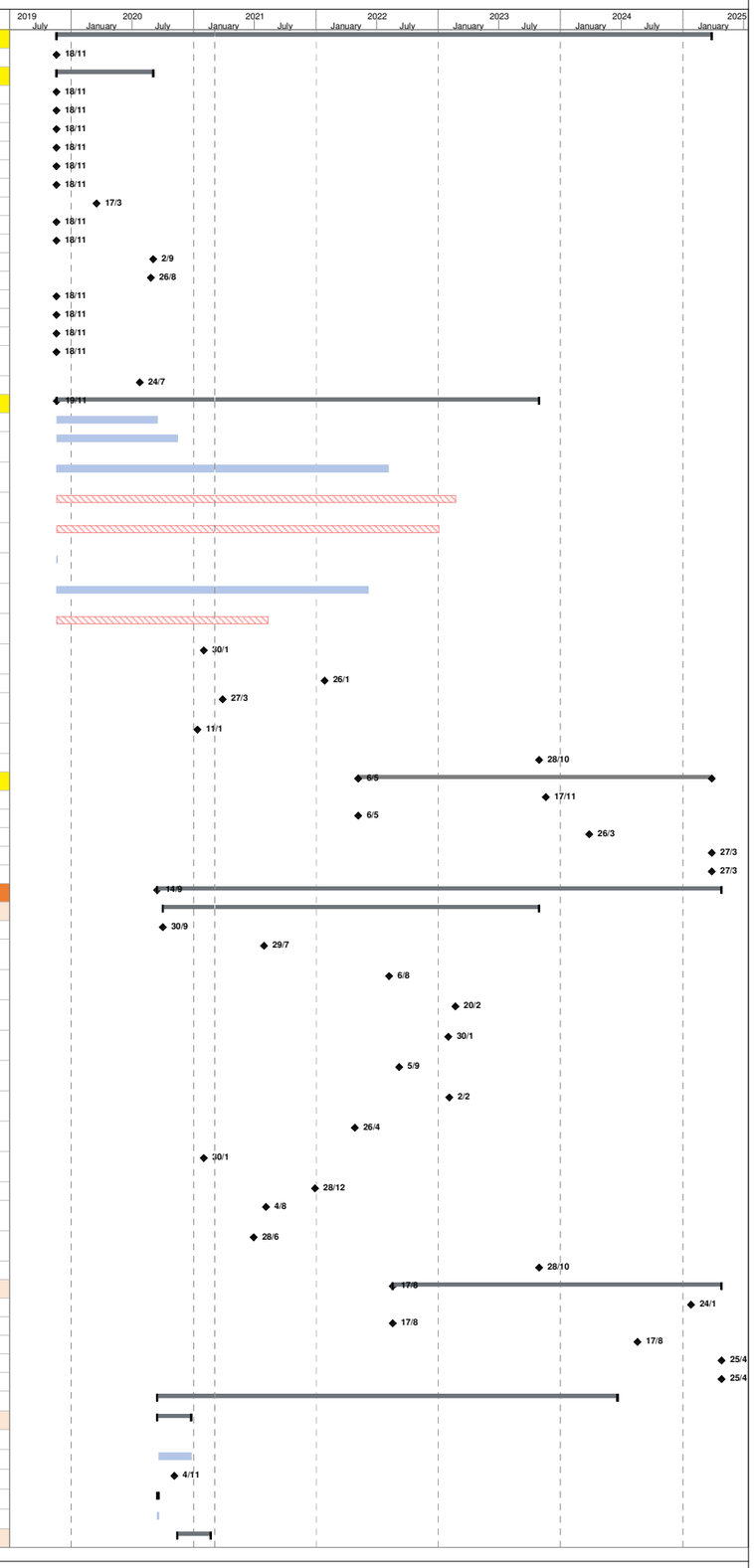


Task ▬ Milestone ◆ Summary ▬ Critical ▬

Contract No. DC/2018/07
Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1
Civil Works for Sewage Treatment Facilities

Revised Works Programme (Status Date: 31/1/2021)
[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	NCE/	ECE/	Baseline Duration	Baseline Start	Baseline Finish	Duration	Start	Finish	Actual Start	Actual Finish	Predecessors	Successors	Total Slack	Risk Allowance	% Complete	Individual Critical Path
1	**CD-1000**		**Contract Dates**			**1585 days**	**Mon 18/11/19**	**Thu 27/3/25**	**1585 days**	**Mon 18/11/19**	**Thu 27/3/25**	**Mon 18/11/19**	**NA**			**25 days**		**40%**	
2	CD-1010		Starting Date			0 days	Mon 18/11/19	Mon 18/11/19	0 days	Mon 18/11/19	Mon 18/11/19	Mon 18/11/19	Mon 18/11/19		35FS+1461 days,36FS+901	0 days		100%	
3	**CAD-1000**		**Access Dates (cal. day)**			**310 days**	**Mon 18/11/19**	**Wed 23/9/20**	**289 days**	**Mon 18/11/19**	**Wed 2/9/20**	**Mon 18/11/19**	**Wed 2/9/20**			**0 days**		**100%**	
4	CAD-1010		Portion B-1 (Access Road AR3)			0 days	Mon 18/11/19	Mon 18/11/19	0 days	Mon 18/11/19	Mon 18/11/19	Mon 18/11/19	Mon 18/11/19	2	207	0 days		100%	
5	CAD-1020		Portion B-1A (Area for the works for Sidestream Treatment Facilities by Others			0 days	Mon 18/11/19	Mon 18/11/19	0 days	Mon 18/11/19	Mon 18/11/19	Mon 18/11/19	Mon 18/11/19	2		0 days		100%	
6	CAD-1030		Portion B-2 (Inlet Works No.1)			0 days	Mon 18/11/19	Mon 18/11/19	0 days	Mon 18/11/19	Mon 18/11/19	Mon 18/11/19	Mon 18/11/19	2	297,308	0 days		100%	
7	CAD-1040		Portion B-2A (Area for the pipe-jacking works by others)			0 days	Mon 18/11/19	Mon 18/11/19	0 days	Mon 18/11/19	Mon 18/11/19	Mon 18/11/19	Mon 18/11/19	2		0 days		100%	
8	CAD-1050		Portion B-3 (Primary Sedimentation Tanks No. 1-4)			0 days	Mon 18/11/19	Mon 18/11/19	0 days	Mon 18/11/19	Mon 18/11/19	Mon 18/11/19	Mon 18/11/19	2	332	0 days		100%	
9	CAD-1060		Portion B-4 (Bioreactor No. 2A & 2B)			0 days	Mon 18/11/19	Mon 18/11/19	0 days	Mon 18/11/19	Mon 18/11/19	Mon 18/11/19	Mon 18/11/19	2	347	0 days		100%	
10	CAD-1070		Portion B-5 (Membrane Facilities Building No.2)			0 days	Mon 18/11/19	Mon 18/11/19	0 days	Tue 17/3/20	Tue 17/3/20	Tue 17/3/20	Tue 17/3/20	2	376,394,399	0 days		100%	
11	CAD-1080		Portion B-6 (SAS Pumping Station)			0 days	Mon 18/11/19	Mon 18/11/19	0 days	Mon 18/11/19	Mon 18/11/19	Mon 18/11/19	Mon 18/11/19	2	408	0 days		100%	
12	CAD-1090		Portion B-7 (Ancillary structures)			0 days	Mon 18/11/19	Mon 18/11/19	0 days	Mon 18/11/19	Mon 18/11/19	Mon 18/11/19	Mon 18/11/19	2	430	0 days		100%	
13	CAD-1100		Portion B-7A (Alternation works for existing Power House)			0 days	Wed 2/9/20	Wed 2/9/20	0 days	Wed 2/9/20	Wed 2/9/20	Wed 2/9/20	Wed 2/9/20	2FS+290 days	486FS-1 day,29FS+151 days	0 days		100%	
14	CAD-1110		Portion B-8 (Alternation for existing Membrane Facilities Building No.1)			0 days	Tue 22/9/20	Tue 22/9/20	0 days	Wed 26/8/20	Wed 26/8/20	Wed 26/8/20	Wed 26/8/20	2FS+311 days	487FS-1 day	0 days		100%	
15	CAD-1020		Portion B-8A (Alternation of air supply main for existing Air Blower House No.2)			0 days	Mon 18/11/19	Mon 18/11/19	0 days	Mon 18/11/19	Mon 18/11/19	Mon 18/11/19	Mon 18/11/19	2	479	0 days		100%	
16	CAD-1130		Portion B-9 (remainder works in Zone B)			0 days	Mon 18/11/19	Mon 18/11/19	0 days	Mon 18/11/19	Mon 18/11/19	Mon 18/11/19	Mon 18/11/19	2	488,503	0 days		100%	
17	CAD-1140		Portion B-9A (Area for the pipe-jacking works by others)			0 days	Mon 18/11/19	Mon 18/11/19	0 days	Mon 18/11/19	Mon 18/11/19	Mon 18/11/19	Mon 18/11/19	2		0 days		100%	
18	CAD-1150		Portion B-9B (Area for underground pipework modification and connection works by others)			0 days	Mon 18/11/19	Mon 18/11/19	0 days	Mon 18/11/19	Mon 18/11/19	Mon 18/11/19	Mon 18/11/19	2		0 days		100%	
19	CAD-1160		Portion B-9C (Area for the works for pipeworks)			0 days	Wed 22/7/20	Wed 22/7/20	0 days	Fri 24/7/20	Fri 24/7/20	Fri 24/7/20	Fri 24/7/20	2FS+151 days		0 days		100%	
20	**CKD-1000**		**Key Dates (cal. day)**			**1440 days**	**Tue 19/11/19**	**Sat 28/10/23**	**1440 days**	**Tue 19/11/19**	**Sat 28/10/23**	**Tue 19/11/19**	**NA**			**452 days**		**40%**	
21	CKD-1010		KD1A completion of AR3 in Portion B-1 (300days after starting date)			300 days	Tue 19/11/19	Sun 13/9/20	300 days	Tue 19/11/19	Sun 13/9/20	Tue 19/11/19	Sun 13/9/20	2FS+1 day	67	0 days		100%	
22	CKD-1020		KD1B completion of utilities diversion for commencement of Inlet Works No.1 in Portion B-2 (360days after starting date)			360 days	Tue 19/11/19	Thu 12/11/20	360 days	Tue 19/11/19	Thu 12/11/20	Tue 19/11/19	Thu 12/11/20	2FS+1 day	73	0 days		100%	
23	CKD-1030		KD1C completion of civil and structural works of Inlet Works No.1 in Portion B-2 (990days after starting date)			990 days	Tue 19/11/19	Thu 4/8/22	990 days	Tue 19/11/19	Thu 4/8/22	Tue 19/11/19	NA	2FS+1 day	79	902 days		38%	
24	CKD-1040		KD1D completion of civil and structural works of Primary Sedimentation Tanks in Portion B-3 (1190days after starting date)			1190 days	Tue 19/11/19	Mon 20/2/23	1190 days	Tue 19/11/19	Mon 20/2/23	Tue 19/11/19	NA	2FS+1 day		0 days		32%	
25	CKD-1050		KD1E completion of civil and structural works of Bioreactor in Portion B-4 (1,140days after starting date)			1140 days	Tue 19/11/19	Sun 1/1/23	1140 days	Tue 19/11/19	Sun 1/1/23	Tue 19/11/19	NA	2FS+1 day	82	0 days		33%	
26	CKD-1060		KD1F completion of civil and structural works of MFB from B2 floor to 1st floor level in Portion B-5 (780days after starting date)			800 days	Tue 19/11/19	Wed 26/1/22	780 days	Tue 19/11/19	Thu 6/1/22	Tue 19/11/19	NA	2FS+1 day	86	20 days		0%	
27	CKD-1070		KD1G completion of civil and structural works of MFB in Portion B-5 (930days after starting date)			950 days	Tue 19/11/19	Sat 25/6/22	930 days	Tue 19/11/19	Sun 5/6/22	Tue 19/11/19	NA	2FS+1 day	90	20 days		41%	
28	CKD-1080		KD1H completion of civil and structural works of SAS Pumping Station in Portion B-6 (630days after starting date)			630 days	Tue 19/11/19	Mon 9/8/21	630 days	Tue 19/11/19	Mon 9/8/21	Tue 19/11/19	NA	2FS+1 day	94	0 days		60%	
29	CKD-1090		KD1I completion alternation works for existing Power House in Portion B-7A (150days after access date of B-7A)			150 days	Fri 4/9/20	Sun 31/1/21	0 days	Sat 30/1/21	Sat 30/1/21	NA	NA	13FS+151 days		1 day		0%	
30	CKD-1100		KD1J completion of auxiliary facilites in Portion B-7 (800days after starting date)			800 days	Tue 19/11/19	Wed 26/1/22	0 days	Wed 26/1/22	Wed 26/1/22	Wed 26/1/22	NA	2FS+801 days		0 days		99%	
31	CKD-1110		KD2A completion of effluent pipes to UV system and connection to its downstream in Portion B-9 (495days after starting date)			495 days	Tue 19/11/19	Sat 27/3/21	0 days	Sat 27/3/21	Sat 27/3/21	Sat 27/3/21	NA	2FS+496 days	101	0 days		99%	
32	CKD-1120		KD2B completion of air supply main alternation to existing air blower house No.2 in Portion B-8A (420days after starting date)			420 days	Tue 19/11/19	Mon 11/1/21	0 days	Mon 11/1/21	Mon 11/1/21	Mon 11/1/21	NA	2FS+421 days	104	0 days		99%	
33	CKD-1130		KD3A completion of all utilities and road works (1440days after starting date)			1440 days	Tue 19/11/19	Sat 28/10/23	0 days	Sat 28/10/23	Sat 28/10/23	Sat 28/10/23	NA	2FS+1441 days	111	0 days		99%	
34	**CCD-1000**		**Completion Date (cal. Day)**			**1956 days**	**Tue 19/11/19**	**Thu 27/3/25**	**1056 days**	**Fri 6/5/22**	**Thu 27/3/25**	**NA**	**NA**			**0 days**		**0%**	
35	CCD-1010		Section 1 of the Works (1,460 after starting date)			1460 days	Tue 19/11/19	Fri 17/11/23	0 days	Fri 17/11/23	Fri 17/11/23	NA	NA	2FS+1461 days	117	0 days		0%	
36	CCD-1020		Section 2 of the Works (900 after starting date)			900 days	Tue 19/11/19	Fri 6/5/22	0 days	Fri 6/5/22	Fri 6/5/22	NA	NA	2FS+901 days	123	0 days		0%	
37	CCD-1030		Section 3 of the Works (1,590 after starting date)			1590 days	Tue 19/11/19	Tue 26/3/24	0 days	Tue 26/3/24	Tue 26/3/24	NA	NA	2FS+1591 days	39FS+366 days,129,38FS+3	0 days		0%	
38	CCD-1040		Defects Liability Period			365 days	Wed 27/3/24	Thu 27/3/25	0 days	Thu 27/3/25	Thu 27/3/25	NA	NA	37FS+366 days		0 days		0%	
39	CCD-1050		Landscape Establishment Works			365 days	Wed 27/3/24	Thu 27/3/25	0 days	Thu 27/3/25	Thu 27/3/25	NA	NA	37FS+366 days		29 days		0%	
40	**PD-1000**	*	**Planned Completion**			**1686 days**	**Fri 14/8/20**	**Thu 27/3/25**	**1685 days**	**Mon 14/9/20**	**Fri 25/4/25**	**Mon 14/9/20**	**NA**			**0 days**		**8%**	
41	**PCD-1000**	*	**Planned Completion - Key Dates (cal. day)**			**1170 days**	**Fri 14/8/20**	**Sat 28/10/23**	**1123 days**	**Wed 30/9/20**	**Sat 28/10/23**	**Wed 30/9/20**	**NA**			**0 days**		**0%**	
42	PKD-1010	KD1A	KD1A completion of AR3 in Portion B-1 (300days after starting date)			0 days	Sat 12/9/20	Sat 12/9/20	0 days	Wed 30/9/20	Wed 30/9/20	Wed 30/9/20	Wed 30/9/20	216FF		0 days		100%	
43	PCD-1020	KD1B	KD1B completion of utilities diversion for commencement of Inlet Works No.1 in Portion B-2 (360days after starting date)			0 days	Fri 14/8/20	Fri 14/8/20	0 days	Thu 29/7/21	Thu 29/7/21	NA	NA	218FF,296FF,286FF,293FF,256FF,254FF		-259 days		0%	
44	PCD-1030	KD1C	KD1C completion of civil and structural works of Inlet Works No.1 in Portion B-2 (990days after starting date)			0 days	Thu 4/8/22	Thu 4/8/22	0 days	Sat 6/8/22	Sat 6/8/22	NA	NA	329FF,328FF,320FF,324FF		-2 days		0%	
45	PCD-1040	KD1D	KD1D completion of civil and structural works of Primary Sedimentation Tanks in Portion B-3 (1190days after starting date)			0 days	Mon 20/2/23	Mon 20/2/23	0 days	Mon 20/2/23	Mon 20/2/23	NA	NA	343FF,342FF		0 days		0%	
46	PCD-1050	KD1E	KD1E completion of civil and structural works of Bioreactor in Portion B-4 (1,140days after starting date)			0 days	Sat 31/12/22	Sat 31/12/22	0 days	Mon 30/1/23	Mon 30/1/23	NA	NA	367FF,368FF		-30 days		0%	
47	PCD-1060	KD1F	KD1F completion of civil and structural works of MFB from B2 floor to 1st floor level in Portion B-5 (800days after starting date)			0 days	Tue 25/1/22	Tue 25/1/22	0 days	Mon 5/9/22	Mon 5/9/22	NA	NA	404FF		-242 days		0%	
48	PCD-1070	KD1G	KD1G completion of civil and structural works of MFB in Portion B-5 (950days after starting date)			0 days	Sat 25/6/22	Sat 25/6/22	0 days	Thu 2/2/23	Thu 2/2/23	NA	NA	405FF		-242 days		0%	
49	PCD-1080	KD1H	KD1H completion of civil and structural works of SAS Pumping Station in Portion B-6 (630days after starting date)			0 days	Mon 9/8/21	Mon 9/8/21	0 days	Tue 26/4/22	Tue 26/4/22	NA	NA	428FF,427FF		-260 days		0%	
50	PCD-1090	KD1I	KD1I completion alternation works for existing Power House in Portion B-7A (150days after access date of B-7A)			0 days	Sat 30/1/21	Sat 30/1/21	0 days	Sat 30/1/21	Sat 30/1/21	NA	NA	486FF		0 days		0%	
51	PCD-1100	KD1J	KD1J completion of auxiliary facilites in Portion B-7 (800days after starting date)			0 days	Wed 26/1/22	Wed 26/1/22	0 days	Tue 28/12/21	Tue 28/12/21	NA	NA	477FF,476FF,470FF,469FF,464FF,463FF		29 days		0%	
52	PCD-1110	KD2A	KD2A completion of effluent pipes to UV system and connection to its downstream in Portion B-9 (495days after starting date)			0 days	Sat 27/3/21	Sat 27/3/21	0 days	Wed 4/8/21	Wed 4/8/21	NA	NA	489FF		-129.8 days		0%	
53	PCD-1120	KD2B	KD2B completion of air supply main alternation to existing air blower house No.2 in Portion B-8A (420days after starting date)			0 days	Thu 3/9/20	Thu 3/9/20	0 days	Mon 28/6/21	Mon 28/6/21	NA	NA	479FF,483FF		-168 days		0%	
54	PCD-1130	KD3A	KD3A completion of all utilities and road works (1440days after starting date)			0 days	Sat 28/10/23	Sat 28/10/23	0 days	Sat 28/10/23	Sat 28/10/23	NA	NA	502FF		0 days		0%	
55	**PCD-1000**	*	**Planned Completion Date (cal. Day)**			**1056 days**	**Fri 6/5/22**	**Thu 27/3/25**	**982 days**	**Wed 17/8/22**	**Fri 25/4/25**	**NA**	**NA**			**0 days**		**0%**	
56	PCD-1010	SW1	Section 1 of the Works (1,460 after starting date)			0 days	Wed 23/8/23	Wed 23/8/23	0 days	Fri 24/1/25	Fri 24/1/25	NA	NA	471FF,465FF,459FF,453FF,446FF,440FF		91 days		0%	
57	PCD-1020	SW2	Section 2 of the Works (900 after starting date)			0 days	Fri 6/5/22	Fri 6/5/22	0 days	Wed 17/8/22	Wed 17/8/22	NA	NA	497FF,500FF,501FF,499FF,498FF,331FF		982 days		0%	
58	PCD-1030	SW3	Section 3 of the Works (1,590 after starting date)			0 days	Tue 26/3/24	Tue 26/3/24	0 days	Sat 17/8/24	Sat 17/8/24	NA	NA	487FF,504FF,505FF,506FF,373FF,346FF		251 days		0%	
59	PCD-1040	DLP	Defects Liability Period			0 days	Thu 27/3/25	Thu 27/3/25	0 days	Fri 25/4/25	Fri 25/4/25	NA	NA	507FF,165FF		0 days		0%	
60	PCD-1050		Landscape Establishment Works			0 days	Thu 27/3/25	Thu 27/3/25	0 days	Fri 25/4/25	Fri 25/4/25	NA	NA	507FF		0 days		0%	
61	**ET-1000**		**Effects from Inclement Weather and Other Time Affected Events**			**0 days**	**NA**	**NA**	**1106 days**	**Mon 14/9/20**	**Wed 19/6/24**	**Mon 14/9/20**	**NA**			**260 days**		**8%**	
62	**ET1A-1000**		**Effects to KD1A**			**0 days**	**NA**	**NA**	**84 days**	**Mon 14/9/20**	**Wed 23/12/20**	**Mon 14/9/20**	**NA**			**1282 days**		**70%**	
63	**ET1A-1100**		**Inclement Weather to KD1A (cal. Day)**			**0 days**	**NA**	**NA**	**70 days**	**Fri 18/9/20**	**Fri 11/12/20**	**Fri 18/9/20**	**NA**			**1292 days**		**69%**	
64	ET1A-1110		Delay and Disruption of Works before November 2020			0 days	NA	NA	80 days	Fri 18/9/20	Wed 23/12/20	Fri 18/9/20	NA	67	65	1282 days		69%	
65	ET1A-1120		Delay and Disruption of Works for the month of November 2020			0 days	NA	NA	0 days	Wed 4/11/20	Wed 4/11/20	Wed 4/11/20	Wed 4/11/20	64		0 days		100%	
66	**ET1A-1200**		**Other Events to KD1A (not all)**			**0 days**	**NA**	**NA**	**4 days**	**Mon 14/9/20**	**Thu 17/9/20**	**Mon 14/9/20**	**Thu 17/9/20**			**0 days**		**100%**	
67	ET1A-1210		Special working arrangement due to COVID-19 in January 2020			0 days	NA	NA	4 days	Mon 14/9/20	Thu 17/9/20	Mon 14/9/20	Thu 17/9/20	21	64	0 days		100%	
68	**ET1B-1000**		**Effects to KD1B**			**0 days**	**NA**	**NA**	**80 days**	**Fri 13/11/20**	**Sat 20/2/21**	**Fri 13/11/20**	**NA**			**1237 days**		**19%**	



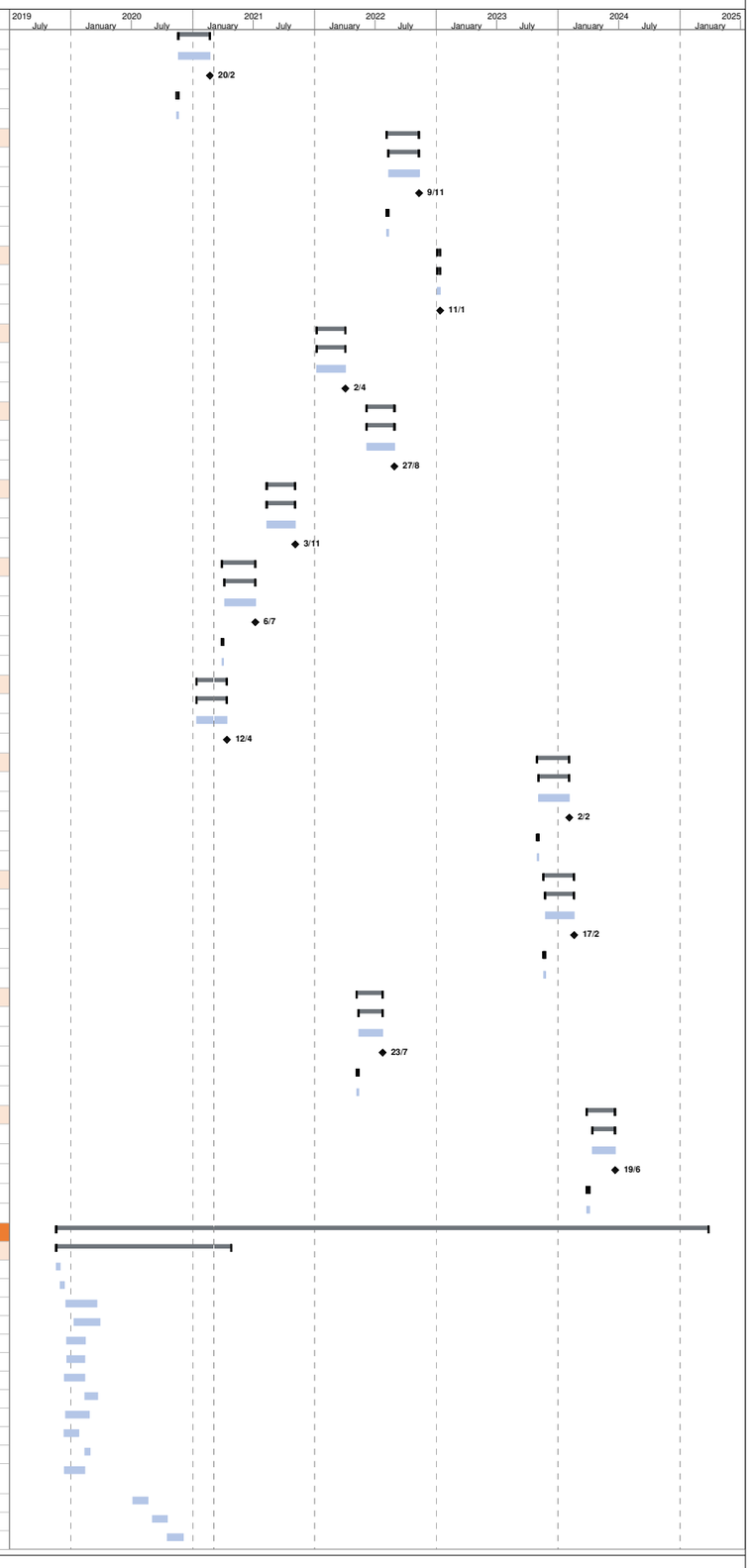
File: DC201807_Revised Works Progr
Date: Fri 5/3/21

Critical Split | Task | Milestone | Summary | Critical

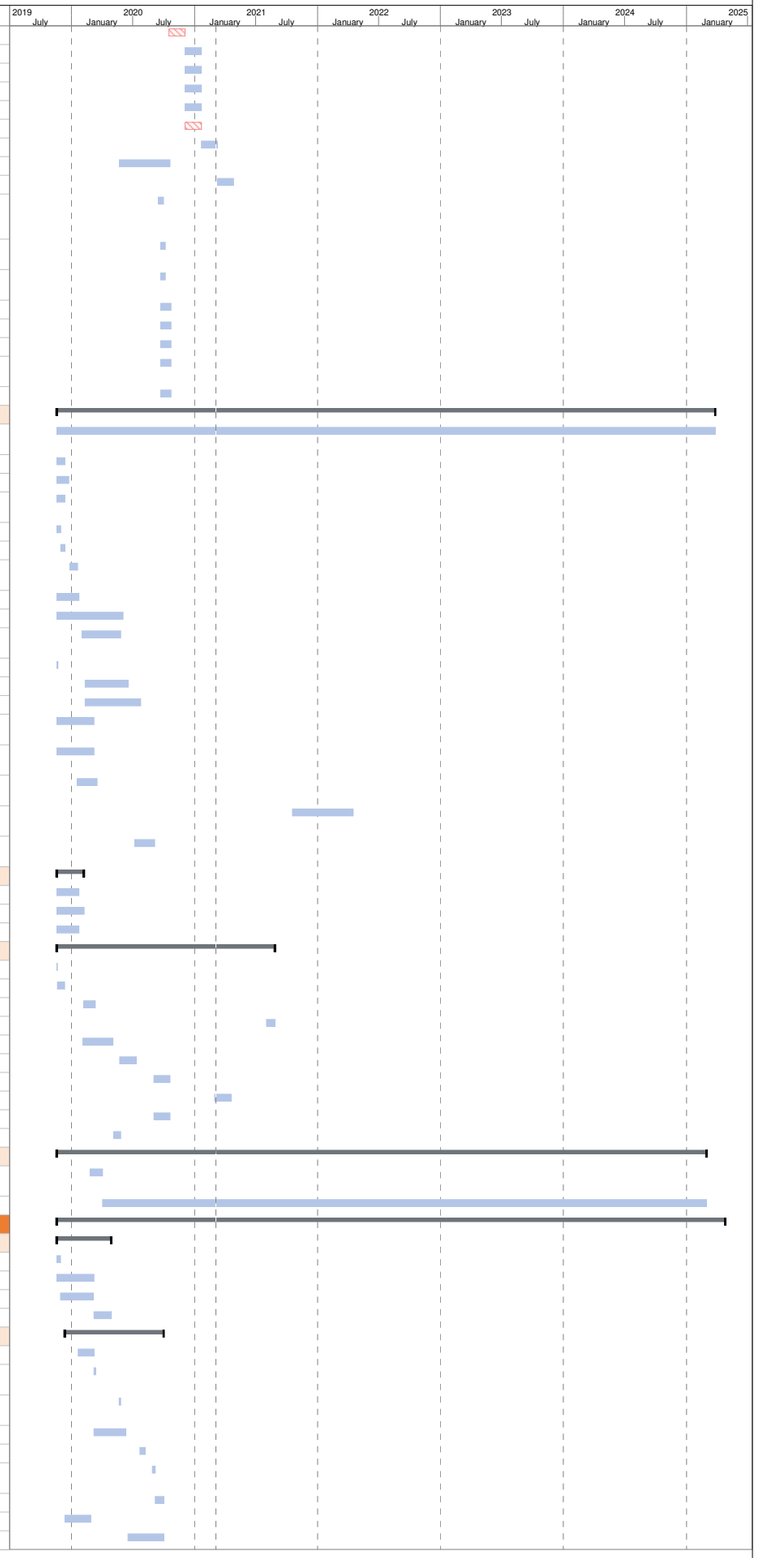
Data Date: 31/1/2021

Revision Date:06/02/2021

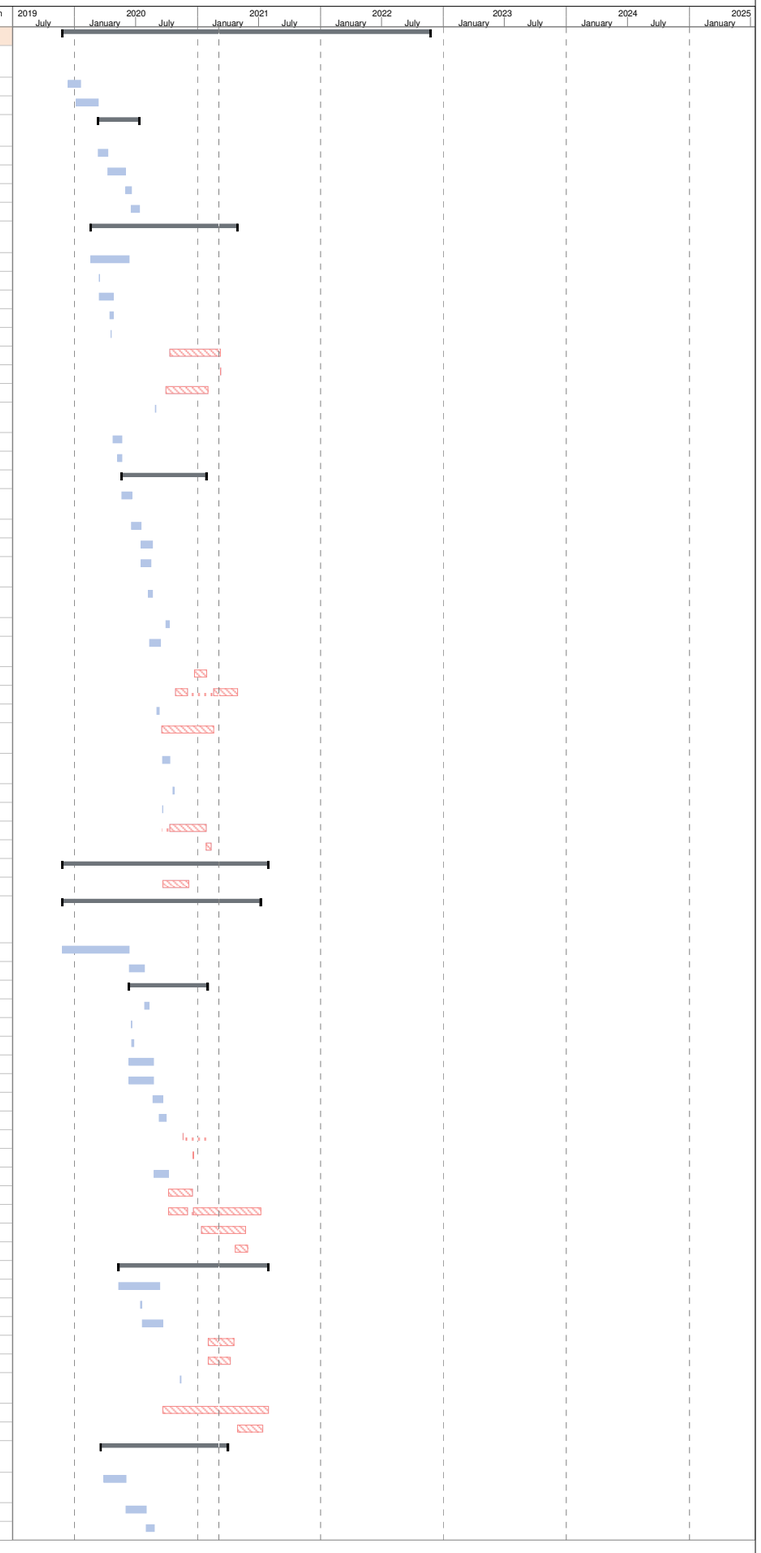
ID	Activity ID	Key Date	Task Name	NCE/ECE/	Baseline Duration	Baseline Start	Baseline Finish	Duration	Start	Finish	Actual Start	Actual Finish	Predecessors	Successors	Total Slack	Risk Allowance	% Complete	Individual Critical Path
69	**ET1B-1100**		**Inclement Weather to KD1B (cal. Day)**		**0 days**	**NA**	**NA**	**76 days**	**Wed 18/11/20**	**Sat 20/2/21**	**Wed 18/11/20**	**NA**			**1237 days**		**14%**	
70	ET1B-1110		Delay and Disruption of Works before November 2020		0 days	NA	NA	76 days	Wed 18/11/20	Sat 20/2/21	Wed 18/11/20	NA	73	71	1237 days		14%	
71	ET1B-1120		Delay and Disruption of Works for the month of November 2020		0 days	NA	NA	0 days	Sat 20/2/21	Sat 20/2/21	NA	NA	70		1237 days		0%	
72	**ET1B-1200**		**Other Events to KD1B (not all)**		**0 days**	**NA**	**NA**	**4 days**	**Fri 13/11/20**	**Tue 17/11/20**	**Fri 13/11/20**	**Tue 17/11/20**			**0 days**		**100%**	
73	ET1B-1210		Special working arrangement due to COVID-19 in January 2020		0 days	NA	NA	4 days	Fri 13/11/20	Tue 17/11/20	Fri 13/11/20	Tue 17/11/20	22	70	0 days		100%	
74	**ET1C-1000**		**Effects to KD1C**		**0 days**	**NA**	**NA**	**80 days**	**Fri 5/8/22**	**Wed 9/11/22**	**NA**	**NA**			**727 days**		**0%**	
75	**ET1C-1100**		**Inclement Weather to KD1C (cal. Day)**		**0 days**	**NA**	**NA**	**76 days**	**Wed 10/8/22**	**Wed 9/11/22**	**NA**	**NA**			**727 days**		**0%**	
76	ET1C-1110		Delay and Disruption of Works before November 2020		0 days	NA	NA	76 days	Wed 10/8/22	Wed 9/11/22	NA	NA	79	77	727 days		0%	
77	ET1C-1120		Delay and Disruption of Works for the month of November 2020		0 days	NA	NA	0 days	Wed 9/11/22	Wed 9/11/22	NA	NA	76		727 days		0%	
78	**ET1C-1200**		**Other Events to KD1C (not all)**		**0 days**	**NA**	**NA**	**4 days**	**Fri 5/8/22**	**Tue 9/8/22**	**NA**	**NA**			**727 days**		**0%**	
79	ET1C-1210		Special working arrangement due to COVID-19 in January 2020		0 days	NA	NA	4 days	Fri 5/8/22	Tue 9/8/22	NA	NA	23	76	727 days		0%	
80	**ET1E-1000**		**Effects to KD1E**		**0 days**	**NA**	**NA**	**8 days**	**Tue 3/1/23**	**Wed 11/1/23**	**NA**	**NA**			**676 days**		**0%**	
81	**ET1E-1100**		**Inclement Weather to KD1E (cal. Day)**		**0 days**	**NA**	**NA**	**8 days**	**Tue 3/1/23**	**Wed 11/1/23**	**NA**	**NA**			**676 days**		**0%**	
82	ET1E-1110		Delay and Disruption of Works before November 2020		0 days	NA	NA	8 days	Tue 3/1/23	Wed 11/1/23	NA	NA	25	83	676 days		0%	
83	ET1E-1120		Delay and Disruption of Works for the month of November 2020		0 days	NA	NA	0 days	Wed 11/1/23	Wed 11/1/23	NA	NA	82		676 days		0%	
84	**ET1F-1000**		**Effects to KD1F**		**0 days**	**NA**	**NA**	**71 days**	**Fri 7/1/22**	**Sat 2/4/22**	**NA**	**NA**			**905 days**		**0%**	
85	**ET1F-1100**		**Inclement Weather to KD1F (cal. Day)**		**0 days**	**NA**	**NA**	**71 days**	**Fri 7/1/22**	**Sat 2/4/22**	**NA**	**NA**			**905 days**		**0%**	
86	ET1F-1110		Delay and Disruption of Works before November 2020		0 days	NA	NA	71 days	Fri 7/1/22	Sat 2/4/22	NA	NA	26	87	905 days		0%	
87	ET1F-1120		Delay and Disruption of Works for the month of November 2020		0 days	NA	NA	0 days	Sat 2/4/22	Sat 2/4/22	NA	NA	86		905 days		0%	
88	**ET1G-1000**		**Effects to KD1G**		**0 days**	**NA**	**NA**	**71 days**	**Mon 6/6/22**	**Sat 27/8/22**	**NA**	**NA**			**787 days**		**0%**	
89	**ET1G-1100**		**Inclement Weather to KD1G (cal. Day)**		**0 days**	**NA**	**NA**	**71 days**	**Mon 6/6/22**	**Sat 27/8/22**	**NA**	**NA**			**787 days**		**0%**	
90	ET1G-1110		Delay and Disruption of Works before November 2020		0 days	NA	NA	71 days	Mon 6/6/22	Sat 27/8/22	NA	NA	27	91	787 days		0%	
91	ET1G-1120		Delay and Disruption of Works for the month of November 2020		0 days	NA	NA	0 days	Sat 27/8/22	Sat 27/8/22	NA	NA	90		787 days		0%	
92	**ET1H-1000**		**Effects to KD1H**		**0 days**	**NA**	**NA**	**71 days**	**Tue 10/8/21**	**Wed 3/11/21**	**NA**	**NA**			**1028 days**		**0%**	
93	**ET1H-1100**		**Inclement Weather to KD1H (cal. Day)**		**0 days**	**NA**	**NA**	**71 days**	**Tue 10/8/21**	**Wed 3/11/21**	**NA**	**NA**			**1028 days**		**0%**	
94	ET1H-1110		Delay and Disruption of Works before November 2020		0 days	NA	NA	71 days	Tue 10/8/21	Wed 3/11/21	NA	NA	28	95	1028 days		0%	
95	ET1H-1120		Delay and Disruption of Works for the month of November 2020		0 days	NA	NA	0 days	Wed 3/11/21	Wed 3/11/21	NA	NA	94		1028 days		0%	
96	**ET2A-1000**		**Effects to KD2A**		**0 days**	**NA**	**NA**	**79 days**	**Mon 29/3/21**	**Tue 6/7/21**	**NA**	**NA**			**1128 days**		**0%**	
97	**ET2A-1100**		**Inclement Weather to KD2A (cal. Day)**		**0 days**	**NA**	**NA**	**75 days**	**Tue 6/4/21**	**Tue 6/7/21**	**NA**	**NA**			**1128 days**		**0%**	
98	ET2A-1110		Delay and Disruption of Works before November 2020		0 days	NA	NA	75 days	Tue 6/4/21	Tue 6/7/21	NA	NA	101	99	1128 days		0%	
99	ET2A-1120		Delay and Disruption of Works for the month of November 2020		0 days	NA	NA	0 days	Tue 6/7/21	Tue 6/7/21	NA	NA	98		1128 days		0%	
100	**ET2A-1200**		**Other Events to KD2A (not all)**		**0 days**	**NA**	**NA**	**4 days**	**Mon 29/3/21**	**Thu 1/4/21**	**NA**	**NA**			**1128 days**		**0%**	
101	ET2A-1210		Special working arrangement due to COVID-19 in January 2020		0 days	NA	NA	4 days	Mon 29/3/21	Thu 1/4/21	NA	NA	31	98	1128 days		0%	
102	**ET2A-1000**		**Effects to KD2B**		**0 days**	**NA**	**NA**	**72 days**	**Tue 12/1/21**	**Mon 12/4/21**	**NA**	**NA**			**1197 days**		**0%**	
103	**ET2A-1100**		**Inclement Weather to KD2B (cal. Day)**		**0 days**	**NA**	**NA**	**72 days**	**Tue 12/1/21**	**Mon 12/4/21**	**NA**	**NA**			**1197 days**		**0%**	
104	ET2A-1110		Delay and Disruption of Works before November 2020		0 days	NA	NA	72 days	Tue 12/1/21	Mon 12/4/21	NA	NA	32	105	1197 days		0%	
105	ET2A-1120		Delay and Disruption of Works for the month of November 2020		0 days	NA	NA	0 days	Mon 12/4/21	Mon 12/4/21	NA	NA	104		1197 days		0%	
106	**ET3A-1000**		**Effects to KD3A**		**0 days**	**NA**	**NA**	**80 days**	**Mon 30/10/23**	**Fri 2/2/24**	**NA**	**NA**			**361 days**		**0%**	
107	**ET3A-1100**		**Inclement Weather to KD3A (cal. Day)**		**0 days**	**NA**	**NA**	**76 days**	**Fri 3/11/23**	**Fri 2/2/24**	**NA**	**NA**			**361 days**		**0%**	
108	ET3A-1110		Delay and Disruption of Works before November 2020		0 days	NA	NA	76 days	Fri 3/11/23	Fri 2/2/24	NA	NA	111	109	361 days		0%	
109	ET3A-1120		Delay and Disruption of Works for the month of November 2020		0 days	NA	NA	0 days	Fri 2/2/24	Fri 2/2/24	NA	NA	108		361 days		0%	
110	**ET3A-1200**		**Other Events to KD3A (not all)**		**0 days**	**NA**	**NA**	**4 days**	**Mon 30/10/23**	**Thu 2/11/23**	**NA**	**NA**			**361 days**		**0%**	
111	ET3A-1210		Special working arrangement due to COVID-19 in January 2020		0 days	NA	NA	4 days	Mon 30/10/23	Thu 2/11/23	NA	NA	33	108	361 days		0%	
112	**ETS1-1000**		**Effects to Section 1 of the Works**		**0 days**	**NA**	**NA**	**73 days**	**Sat 18/11/23**	**Sat 17/2/24**	**NA**	**NA**			**351 days**		**0%**	
113	**ETS1-1100**		**Inclement Weather to Section 1 of the Works (cal. Day)**		**0 days**	**NA**	**NA**	**69 days**	**Thu 23/11/23**	**Sat 17/2/24**	**NA**	**NA**			**351 days**		**0%**	
114	ETS1-1110		Delay and Disruption of Works before November 2020		0 days	NA	NA	69 days	Thu 23/11/23	Sat 17/2/24	NA	NA	117	115	351 days		0%	
115	ETS1-1120		Delay and Disruption of Works for the month of November 2020		0 days	NA	NA	0 days	Sat 17/2/24	Sat 17/2/24	NA	NA	114		351 days		0%	
116	**ETS1-1200**		**Other Events to Section 1 of the Works (not all)**		**0 days**	**NA**	**NA**	**4 days**	**Sat 18/11/23**	**Wed 22/11/23**	**NA**	**NA**			**351 days**		**0%**	
117	ETS1-1210		Special working arrangement due to COVID-19 in January 2020		0 days	NA	NA	4 days	Sat 18/11/23	Wed 22/11/23	NA	NA	35	114	351 days		0%	
118	**ETS2-1000**		**Effects to Section 2 of the Works**		**0 days**	**NA**	**NA**	**64 days**	**Sat 7/5/22**	**Sat 23/7/22**	**NA**	**NA**			**817 days**		**0%**	
119	**ETS2-1100**		**Inclement Weather to Section 2 of the Works (cal. Day)**		**0 days**	**NA**	**NA**	**60 days**	**Fri 13/5/22**	**Sat 23/7/22**	**NA**	**NA**			**817 days**		**0%**	
120	ETS2-1110		Delay and Disruption of Works before November 2020		0 days	NA	NA	60 days	Fri 13/5/22	Sat 23/7/22	NA	NA	123	121	817 days		0%	
121	ETS2-1120		Delay and Disruption of Works for the month of November 2020		0 days	NA	NA	0 days	Sat 23/7/22	Sat 23/7/22	NA	NA	120		817 days		0%	
122	**ETS2-1200**		**Other Events to Section 2 of the Works (not all)**		**0 days**	**NA**	**NA**	**4 days**	**Sat 7/5/22**	**Thu 12/5/22**	**NA**	**NA**			**817 days**		**0%**	
123	ETS2-1210		Special working arrangement due to COVID-19 in January 2020		0 days	NA	NA	4 days	Sat 7/5/22	Thu 12/5/22	NA	NA	36	120	817 days		0%	
124	**ETS3-1000**		**Effects to Section 3 of the Works**		**0 days**	**NA**	**NA**	**59 days**	**Wed 27/3/24**	**Wed 19/6/24**	**NA**	**NA**			**260 days**		**0%**	
125	**ETS3-1100**		**Inclement Weather to Section 3 of the Works (cal. Day)**		**0 days**	**NA**	**NA**	**55 days**	**Sat 13/4/24**	**Wed 19/6/24**	**NA**	**NA**			**260 days**		**0%**	
126	ETS3-1110		Delay and Disruption of Works before November 2020		0 days	NA	NA	55 days	Sat 13/4/24	Wed 19/6/24	NA	NA	129	127	260 days		0%	
127	ETS3-1120		Delay and Disruption of Works for the month of November 2020		0 days	NA	NA	0 days	Wed 19/6/24	Wed 19/6/24	NA	NA	126		260 days		0%	
128	**ETS3-1200**		**Other Events to Section 3 of the Works (not all)**		**0 days**	**NA**	**NA**	**4 days**	**Wed 27/3/24**	**Wed 3/4/24**	**NA**	**NA**			**260 days**		**0%**	
129	ETS3-1210		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	37	126	260 days		0%	
130	**SUB-1000**		**Submissions (cal.day)**		**1564 days**	**Mon 18/11/19**	**Wed 28/2/24**	**1956 days**	**Mon 18/11/19**	**Wed 26/3/25**	**Mon 18/11/19**	**NA**			**30 days**		**49%**	
131	**SUBS-1000**		**Subletting Package**		**96 days**	**Mon 18/11/19**	**Fri 21/2/20**	**525 days**	**Mon 18/11/19**	**Sun 25/4/21**	**Mon 18/11/19**	**NA**			**628 days**		**74%**	
132	SUBS-1010		Prepare & submit subletting procedure		12 days	Mon 18/11/19	Fri 29/11/19	12 days	Mon 18/11/19	Fri 29/11/19	Mon 18/11/19	Fri 29/11/19	2	133	0 days		100%	
133	SUBS-1020		PM review and accept subletting procedure		15 days	Sat 30/11/19	Wed 11/12/19	12 days	Sat 30/11/19	Wed 11/12/19	Sat 30/11/19	Wed 11/12/19	132	154,134,137,136,135	0 days		100%	
134	SUBS-1030		Subletting for demolition works		24 days	Thu 12/12/19	Sat 4/1/20	93 days	Tue 17/12/19	Wed 18/3/20	Tue 17/12/19	Wed 18/3/20	133,166	336,431,297,376,486,355	0 days		100%	
135	SUBS-1040		Subletting for UU diversion for Inlet Works No.1		24 days	Thu 12/12/19	Sat 4/1/20	78 days	Fri 10/1/20	Fri 27/3/20	Fri 10/1/20	Fri 27/3/20	133	218	0 days		100%	
136	SUBS-1050		Subletting for Inspection pit excavation		0 days	NA	NA	56 days	Thu 19/12/19	Wed 12/2/20	Thu 19/12/19	Wed 12/2/20	133,166	220,138	0 days		100%	
137	SUBS-1060		Subletting for Preliminary Works (topographic surveying)		14 days	Thu 12/12/19	Wed 25/12/19	54 days	Fri 20/12/19	Tue 11/2/20	Fri 20/12/19	Tue 11/2/20	133,166	171,204,141,142,143,139	0 days		100%	
138	SUBS-1070		Subletting for AR3 access road		24 days	Thu 12/12/19	Sat 4/1/20	0 days	Fri 13/12/19	Tue 11/2/20	Fri 13/12/19	Tue 11/2/20	136	139,216	0 days		100%	
139	SUBS-1080		Subletting for pre-drilling works		24 days	Thu 12/12/19	Sat 4/1/20	38 days	Thu 6/2/20	Fri 20/3/20	Thu 6/2/20	Fri 20/3/20	137,138	422,337,389,140	0 days		100%	
140	SUBS-1090		Subletting for Contractor designer for temporary works and ICE		24 days	Thu 12/12/19	Sat 4/1/20	71 days	Mon 16/12/19	Mon 24/2/20	Mon 16/12/19	Mon 24/2/20	139	341,366,426,433,442,449,45	0 days		100%	
141	SUBS-1100		Subletting for independent BIM consultant		24 days	Thu 12/12/19	4/1/120	0 days	Wed 11/12/19	Thu 23/1/20	Wed 11/12/19	Thu 23/1/20	137	199	0 days		100%	
142	SUBS-1110		Subletting for independent BIM services		0 days	NA	NA	15 days	Tue 14/1/20	Wed 26/2/20	Tue 14/1/20	Wed 26/2/20	137	199	0 days		100%	
143	SUBS-1120		Subletting for Design, Supply & Install of Temporary Activated Carbon Deodorization Units (E&M Works)		0 days	NA	NA	0 days	Fri 13/12/19	Tue 11/2/20	Fri 13/12/19	Tue 11/2/20	137	144,145	0 days		100%	
144	SUBS-1130		Subletting for pre-bored H pile works		36 days	Thu 12/12/19	Thu 16/1/20	45 days	Sun 5/7/20	Tue 18/8/20	Sun 5/7/20	Tue 18/8/20	143	310,338,363,390,423	0 days		100%	
145	SUBS-1140		Subletting for Sheetpile installation works		0 days	NA	NA	45 days	Tue 1/9/20	Thu 15/10/20	Tue 1/9/20	Thu 15/10/20	143	311,339,364,425,146,147	0 days		100%	
146	SUBS-1150		Subletting for ELS works for Inlet Works No.1		48 days	Sun 5/1/20	Fri 21/2/20	48 days	Fri 16/10/20	Wed 2/12/20	Fri 16/10/20	NA	145	313	300 days		96%	



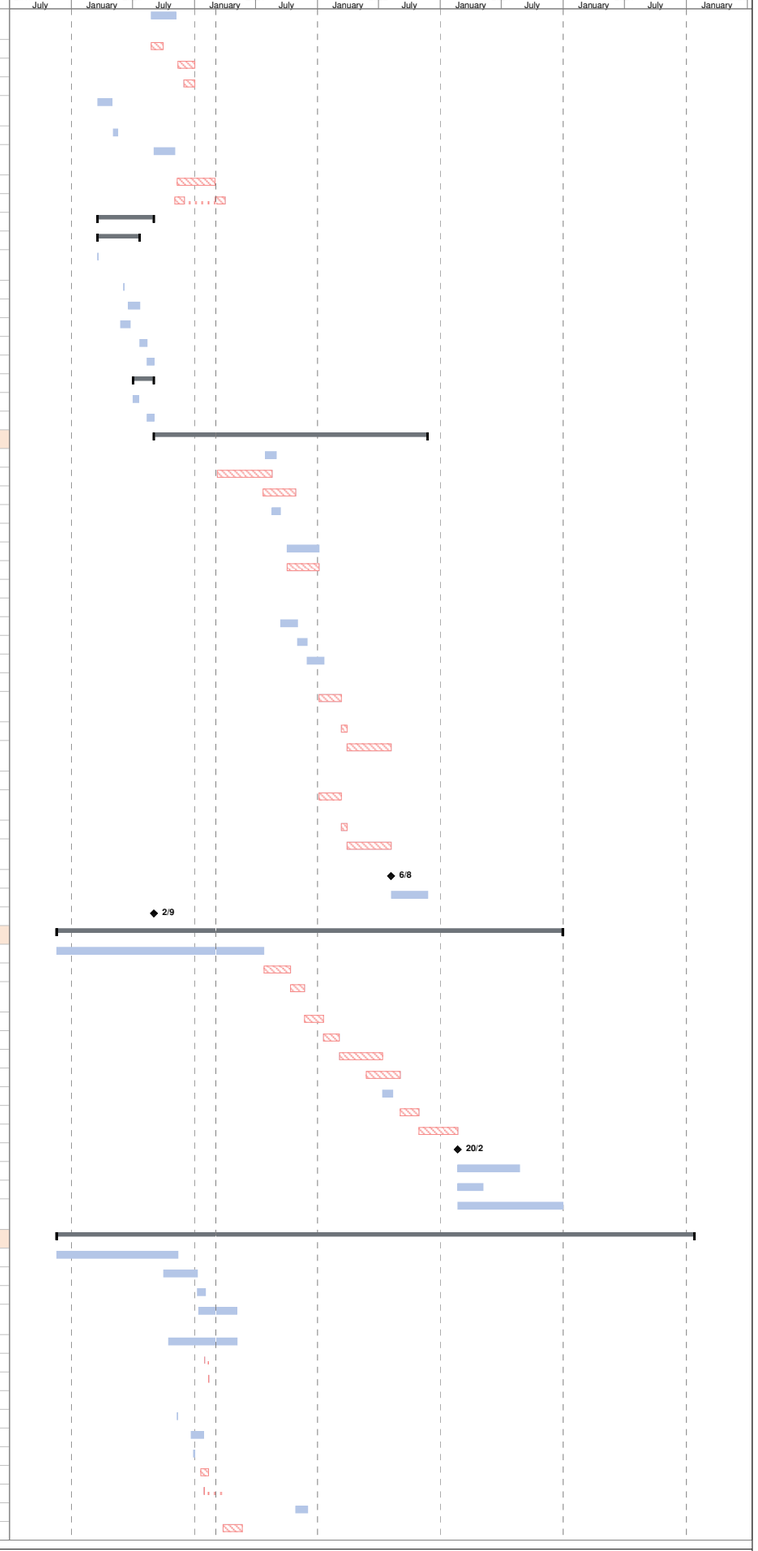
ID	Activity ID	Key Date	Task Name	NCE/	ECE/	Baseline Duration	Baseline Start	Baseline Finish	Duration	Start	Finish	Actual Start	Actual Finish	Predecessors	Successors	Total Slack	Risk Allowance	% Complete	Individual Critical Path
147	SUBS-1160		Subletting for ELS works for Membrance Facilities Building and other buildings			48 days	Sun 5/1/20	Fri 21/2/20	48 days	Fri 16/10/20	Wed 2/12/20	Fri 16/10/20	NA	145	341,366,426,148,149,150,15	-73 days		96%	
148	SUBS-1170		Subletting for structural works for Inlet Works Building			48 days	Thu 12/12/19	Tue 28/1/20	48 days	Thu 3/12/20	Tue 19/1/21	NA	NA	147	316	225 days		0%	
149	SUBS-1180		Subletting for structural works for Primary Sedimentation Tanks			48 days	Thu 12/12/19	Tue 28/1/20	48 days	Thu 3/12/20	Tue 19/1/21	NA	NA	147	342	647 days		0%	
150	SUBS-1190		Subletting for structural works for Bioreactors			48 days	Thu 12/12/19	Tue 28/1/20	48 days	Thu 3/12/20	Tue 19/1/21	NA	NA	147	367	462 days		0%	
151	SUBS-1200		Subletting for structural works for Membrance Facilities Building			48 days	Thu 12/12/19	Tue 28/1/20	48 days	Thu 3/12/20	Tue 19/1/21	NA	NA	147	400	177 days		0%	
152	SUBS-1210		Subletting for structural works for SAS pumping house and ancillary structures			48 days	Thu 12/12/19	Tue 28/1/20	48 days	Thu 3/12/20	Tue 19/1/21	NA	NA	147	427,153	-30 days		0%	
153	SUBS-1220		Subletting for ABWF works			48 days	Thu 12/12/19	Tue 28/1/20	48 days	Wed 20/1/21	Mon 8/3/21	NA	NA	152	330,344,372,429,440,446,45	628 days		0%	
154	SUBS-1230		Subletting for Process Pipeworks, Utilities and Roadworks			48 days	Thu 12/12/19	Tue 28/1/20	150 days	Fri 22/5/20	Sun 18/10/20	Fri 22/5/20	Sun 18/10/20	133	479,489,497,498,499,500,50	0 days		100%	
155	SUBS-1240		Subletting for Landscape Hardworks and Softworks			48 days	Thu 12/12/19	Tue 28/1/20	48 days	Tue 9/3/21	Sun 25/4/21	NA	NA	153	505,506,507	628 days		0%	
156	SUBS-1250		Subletting for Trial dewatering works and installation of additional stop logs at BR2 connon channel due to malfucntioned of existing penstock at FST no. 5 and 7 (EWN 055)			0 days	NA	NA	15 days	Tue 15/9/20	Tue 29/9/20	Tue 15/9/20	Tue 29/9/20		349	0 days		100%	
157	SUBS-1260		Subletting for Diversion of Power supply for existing Slaghter House pump station (CE 034)			0 days	NA	NA	14 days	Mon 21/9/20	Sun 4/10/20	Mon 21/9/20	Sun 4/10/20			0 days		100%	
158	SUBS-1270		Subletting for Decommission of exisiting power and signal systems in leachate Pump station switch room (PMI 039)			0 days	NA	NA	14 days	Mon 21/9/20	Sun 4/10/20	Mon 21/9/20	Sun 4/10/20		411	0 days		100%	
159	SUBS-1280		Subletting for Diversion of Existing DN250 Leachate Raising Main (PPMI 025)			0 days	NA	NA	31 days	Mon 21/9/20	Wed 21/10/20	Mon 21/9/20	Wed 21/10/20			0 days		100%	
160	SUBS-1290		Subletting for Construction of Cable trough for CLP 11kv Cable Diversion (PPMI 041)			0 days	NA	NA	31 days	Mon 21/9/20	Wed 21/10/20	Mon 21/9/20	Wed 21/10/20		412,423	0 days		100%	
161	SUBS-1300		Subletting for Demolition of Existing Pillar box and its concrete plinth (CE 030)			0 days	NA	NA	31 days	Mon 21/9/20	Wed 21/10/20	Mon 21/9/20	Wed 21/10/20		413	0 days		100%	
162	SUBS-1310		Subletting for Excavation to locate existing underground cable near SAS Pump Station (PPMI 038)			0 days	NA	NA	31 days	Mon 21/9/20	Wed 21/10/20	Mon 21/9/20	Wed 21/10/20		414	0 days		100%	
163	SUBS-1320		Subletting for Diversion of pumping system sewerage (PPMI 083)			0 days	NA	NA	31 days	Mon 21/9/20	Wed 21/10/20	Mon 21/9/20	Wed 21/10/20		418	0 days		100%	
164	**SUBA-1000**		**Statutory Submission, Submission and Approval**			**1564 days**	**Mon 18/11/19**	**Wed 28/2/24**	**1956 days**	**Mon 18/11/19**	**Wed 26/3/25**	**Mon 18/11/19**	**NA**			**30 days**		**43%**	
165	SUBA-1010		Liaison with operator of SWHSTW and obtain their consent of associated method statement of major activities			0 days	NA	NA	1584 days	Mon 18/11/19	Wed 26/3/25	Mon 18/11/19	NA	2	59FF	26 days		19%	
166	SUBA-1020		Prepare and submit Subcontractor Management Plan (SMP)			24 days	Mon 18/11/19	Wed 11/12/19	24 days	Mon 18/11/19	Wed 11/12/19	Mon 18/11/19	Wed 11/12/19	2	134,137,136	0 days		100%	
167	SUBA-1030		Prepare and submit Interface Management Plan			36 days	Mon 18/11/19	Mon 23/12/19	36 days	Mon 18/11/19	Mon 23/12/19	Mon 18/11/19	Mon 23/12/19	2		0 days		100%	
168	SUBA-1040		Prepare and submit the TTA plans inside Treatment Plant for UU diversion and buildings construction			24 days	Mon 18/11/19	Wed 11/12/19	24 days	Mon 18/11/19	Wed 11/12/19	Mon 18/11/19	Wed 11/12/19	2	207	0 days		100%	
169	SUBA-1050		Prepare and submit method statement for UU diversion for Inlet Works No.1			12 days	Mon 18/11/19	Fri 29/11/19	12 days	Mon 18/11/19	Fri 29/11/19	Mon 18/11/19	Fri 29/11/19	2	170	0 days		100%	
170	SUBA-1060		PM review and accept the method statement			12 days	Sat 30/11/19	Wed 11/12/19	0 days	Sat 30/11/19	Wed 11/12/19	Sat 30/11/19	Wed 11/12/19	169	219,220	0 days		100%	
171	SUBA-1070		Prepare and submit combine underground services drawing for PM's review the alignment			24 days	Thu 26/12/19	Sat 18/1/20	23 days	Thu 26/12/19	Sat 18/1/20	Thu 26/12/19	Sat 18/1/20	137		0 days		100%	
172	SUBA-1080		Prepare and submit method statement for demolition existing structures			24 days	Mon 18/11/19	Wed 11/12/19	66 days	Mon 18/11/19	Wed 22/1/20	Mon 18/11/19	Wed 22/1/20	2	376,336,431,297,486,355	0 days		100%	
173	SUBA-1090		Prepare and submit method statement for structural works for buildings			24 days	Mon 18/11/19	Wed 11/12/19	197 days	Mon 18/11/19	Mon 1/6/20	Mon 18/11/19	Mon 1/6/20	2		0 days		100%	
174	SUBA-1100		Prepare and submit method statements to MTRC regarding the works within railing protection boundary			36 days	Mon 18/11/19	Mon 23/12/19	92 days	Sat 1/2/20	Mon 25/5/20	Sat 1/2/20	Mon 25/5/20	2	336,431,486,297,355	0 days		100%	
175	SUBA-1110		Prepare and submit & approve Safety Management Plan			24 days	Mon 18/11/19	Wed 11/12/19	3 days	Mon 18/11/19	Wed 20/11/19	Mon 18/11/19	Wed 20/11/19	2		0 days		100%	
176	SUBA-1120		Prepare and submit Excavation and lateral support (ELS) proposal			24 days	Mon 10/2/20	Wed 4/3/20	128 days	Mon 10/2/20	Tue 16/6/20	Mon 10/2/20	Tue 16/6/20	2		0 days		100%	
177	SUBA-1130		Prepare and submit Dewatering proposal for basement construction			24 days	Mon 10/2/20	Wed 4/3/20	165 days	Mon 10/2/20	Thu 23/7/20	Mon 10/2/20	Thu 23/7/20	2		0 days		100%	
178	SUBA-1140		Prepare and submit Pre-construction condition survey of existing structures/ services			24 days	Wed 5/2/20	Fri 28/2/20	0 days	Mon 18/11/19	Fri 6/3/20	Mon 18/11/19	Fri 6/3/20	204		0 days		100%	
179	SUBA-1150		Prepare and submit Settlement and movement monitoring proposal of existing structures/ services			24 days	Wed 5/2/20	Fri 28/2/20	110 days	Mon 18/11/19	Fri 6/3/20	Mon 18/11/19	Fri 6/3/20	204		0 days		100%	
180	SUBA-1160		Prepare and submit design of structure elements of the temporary activated carbon deodourization unit			60 days	Fri 17/1/20	Mon 16/3/20	60 days	Mon 18/11/19	Mon 16/3/20	Mon 18/11/19	Mon 16/3/20	2FS+60 days		0 days		100%	
181	SUBA-1170		Prepare of RSE and structural design for alternation and additional (A&A) works at Membrane Facilities Building No.1			180 days	Mon 18/10/21	Fri 15/4/22	180 days	Mon 18/10/21	Fri 15/4/22	NA	NA		487	660 days		0%	
182	SUBA-1180		Prepare of RSE and structural design for alternation and additional (A&A) works at Main Power House			44 days	Wed 15/7/20	Thu 3/9/20	60 days	Mon 6/7/20	Thu 3/9/20	Mon 6/7/20	Thu 3/9/20		486	0 days		100%	
183	**SUBE-1000**		**Environmental Aspect Submissions**			**45 days**	**Mon 18/11/19**	**Wed 1/1/20**	**81 days**	**Mon 18/11/19**	**Thu 6/2/20**	**Mon 18/11/19**	**Thu 6/2/20**			**0 days**		**100%**	
184	SUBE-1010		Prepare, submit & approve Site Management Plan for Trip Ticket System			45 days	Mon 18/11/19	Wed 1/1/20	66 days	Mon 18/11/19	Wed 22/1/20	Mon 18/11/19	Wed 22/1/20	2		0 days		100%	
185	SUBE-1020		Prepare, submit & approve Waste Management Plan			45 days	Mon 18/11/19	Wed 1/1/20	81 days	Mon 18/11/19	Thu 6/2/20	Mon 18/11/19	Thu 6/2/20	2		0 days		100%	
186	SUBE-1030		Prepare, submit & approve Environmental Management Plan			45 days	Mon 18/11/19	Wed 1/1/20	66 days	Mon 18/11/19	Wed 22/1/20	Mon 18/11/19	Wed 22/1/20	2		0 days		100%	
187	**SUBP-1000**		**Procurement**			**731 days**	**Mon 18/11/19**	**Wed 17/11/21**	**648 days**	**Mon 18/11/19**	**Thu 26/8/21**	**Mon 18/11/19**	**NA**			**700 days**		**81%**	
188	SUBP-1010		Prepare and submit the Procurement Procedure			12 days	Mon 18/11/19	Fri 29/11/19	2 days	Mon 18/11/19	Tue 19/11/19	Mon 18/11/19	Tue 19/11/19	2	189	0 days		100%	
189	SUBP-1020		PM Review & Accept Procurement Procedure			12 days	Sat 30/11/19	Wed 11/12/19	21 days	Tue 19/11/19	Tue 10/12/19	Tue 19/11/19	Tue 10/12/19	188	190,191,192,193,194,195,19	0 days		100%	
190	SUBP-1030		Prepare, submit and approve the pipe works material			25 days	Thu 12/12/19	Sun 5/1/20	34 days	Thu 6/2/20	Tue 10/3/20	Thu 6/2/20	Tue 10/3/20	189	218,479,498,499,501,500,49	0 days		100%	
191	SUBP-1040		Prepare, submit and approve the water proofing material			25 days	Thu 12/12/19	Sun 5/1/20	25 days	Mon 2/8/21	Thu 26/8/21	NA	NA	189	323,327	195 days		0%	
192	SUBP-1050		Prepare, submit and approve the concrete mix material			48 days	Thu 12/12/19	Tue 28/1/20	90 days	Mon 3/2/20	Sat 2/5/20	Mon 3/2/20	Sat 2/5/20	189	316,367,427,400	0 days		100%	
193	SUBP-1060		Prepare, submit and approve the rebar material			48 days	Thu 12/12/19	Tue 28/1/20	49 days	Sat 23/5/20	Fri 10/7/20	Sat 23/5/20	Fri 10/7/20	189	316,367,427,400	0 days		100%	
194	SUBP-1070		Prepare, submit and approve the metal works material			48 days	Thu 12/12/19	Tue 28/1/20	48 days	Tue 1/9/20	Sun 18/10/20	Tue 1/9/20	Sun 18/10/20	189	316,367,427,400	0 days		100%	
195	SUBP-1080		Prepare, submit and approve the ABWF works material			48 days	Sat 12/12/20	Tue 28/1/20	48 days	Mon 1/3/21	Sat 17/4/21	NA	NA	189	330,344,372,429,440,446,45	831 days		0%	
196	SUBP-1090		Prepare, submit and approve the protective lining to concrete			0 days	NA	NA	48 days	Tue 1/9/20	Sun 18/10/20	Tue 1/9/20	Sun 18/10/20	189	316,367,427,400	0 days		100%	
197	SUBP-1100		Prepare, submit and approve the multi-part covers			0 days	NA	NA	21 days	Tue 5/5/20	Mon 25/5/20	Tue 5/5/20	Mon 25/5/20	189		0 days		100%	
198	**SUBB-1000**		**BIM**			**1205 days**	**Thu 6/2/20**	**Wed 28/2/24**	**1562 days**	**Mon 18/11/19**	**Fri 28/2/25**	**Mon 18/11/19**	**NA**			**48 days**		**16%**	
199	SUBB-1010		Prepare, submit and approve the proposal of details of Common data environment (CDE)			48 days	Thu 6/2/20	Wed 1/4/20	37 days	Mon 18/11/19	Wed 1/4/20	Mon 18/11/19	Wed 1/4/20	141,142	200	0 days		100%	
200			Prepare and submit BIM submission			1484 days	Thu 6/2/20	Wed 28/2/24	1451 days	Thu 2/4/20	Fri 28/2/25	Thu 2/4/20	NA	199		48 days		14%	
201	**C-1000**	*	**Construction Works (Working day)**			**1957 days**	**Mon 18/11/19**	**Thu 27/3/25**	**1986 days?**	**Mon 18/11/19**	**Fri 25/4/25**	**Mon 18/11/19**	**NA**			**0 days?**		**28%**	
202	**CPW-1000**		**Preliminary Works**			**109 days**	**Mon 18/11/19**	**Thu 5/3/20**	**162 days**	**Mon 18/11/19**	**Mon 27/4/20**	**Mon 18/11/19**	**Mon 27/4/20**			**0 days**		**100%**	
203	CPW-1000		Initial Survey			24 days	Mon 18/11/19	Sat 14/12/19	10 days	Mon 18/11/19	Thu 28/11/19	Mon 18/11/19	Thu 28/11/19	2	204	0 days		100%	
204	CPW-2000		Condition Survey			30 days	Fri 27/12/19	Tue 4/2/20	89 days	Mon 18/11/19	Fri 6/3/20	Mon 18/11/19	Fri 6/3/20	137,203	205,178,179,206	0 days		100%	
205	CPW-3000		Installation of Monitoring Markers			26 days	Wed 5/2/20	Thu 5/3/20	78 days	Fri 29/11/19	Thu 5/3/20	Fri 29/11/19	Thu 5/3/20	204		0 days		100%	
206	CPW-4000		Tree Felling Works			0 days	NA	NA	40 days	Sat 7/3/20	Mon 27/4/20	Sat 7/3/20	Mon 27/4/20	204		0 days		100%	
207	**CAR-0000**	*	**Access Road (AR3), B-1**			**193 days**	**Mon 20/1/20**	**Sat 12/9/20**	**238 days**	**Thu 12/12/19**	**Wed 30/9/20**	**Thu 12/12/19**	**Wed 30/9/20**	**4,168**		**0 days**		**100%**	
208	CAR-1000		Site setup and clearance wroks		05	28 days	Mon 20/1/20	Mon 24/2/20	38 days	Mon 20/1/20	Fri 6/3/20	Mon 20/1/20	Fri 6/3/20		209	0 days		100%	
209	CAR-1001		Awaiting for AECOM instruction for alignment confirmation for road works (PPMI 008)			0 days	NA	NA	5 days	Mon 17/2/20	Thu 12/3/20	Mon 17/2/20	Thu 12/3/20	208	210	0 days		100%	
210	CAR-1002		Additional Works in Access Road AR3 to Settle Left-in Material by Contract DC/2016/07	031		0 days	NA	NA	4 days	Thu 21/5/20	Mon 25/5/20	Thu 21/5/20	Mon 25/5/20	209	211	0 days		100%	
211	CAR-2000		Drainage and Utilities Works			76 days	Fri 6/3/20	Tue 9/6/20	75 days	Sat 7/3/20	Tue 9/6/20	Sat 7/3/20	Tue 9/6/20	210	212	0 days		100%	
212	CAR-2000a		Trimming of Existing Sheet Piles in Access Road AR3	051		0 days	NA	NA	20 days	Tue 14/7/20	Wed 5/8/20	Tue 14/7/20	Wed 5/8/20	211	213	0 days		100%	
213	CAR-2000b		Installation of Multi-part Cover and Manhole Cover of Chamber RP6 and Associated Concreting Works in Portion B-1	053		0 days	NA	NA	7 days	Fri 28/8/20	Fri 4/9/20	Fri 28/8/20	Fri 4/9/20	212	214	0 days		100%	
214	CAR-2001		Diversion of Existing Underground Cables in Portion B-1A		036	0 days	NA	NA	172 days	Thu 5/3/20	Wed 30/9/20	Thu 5/3/20	Wed 30/9/20	213	216	0 days		100%	
215	CAR-2002		Additional U-channel, beam barrier and footway concrete pavement (PPMI 008)			0 days	NA	NA	60 days	Thu 12/12/19	Wed 26/2/20	Thu 12/12/19	Wed 26/2/20		216	0 days		100%	
216	CAR-3000	KD1A	Roadworks (NCE 047)			80 days	Wed 10/6/20	Sat 12/9/20	133 days	Fri 24/4/20	Wed 30/9/20	Fri 24/4/20	Wed 30/9/20	138,215,214	42FF	0 days		100%	



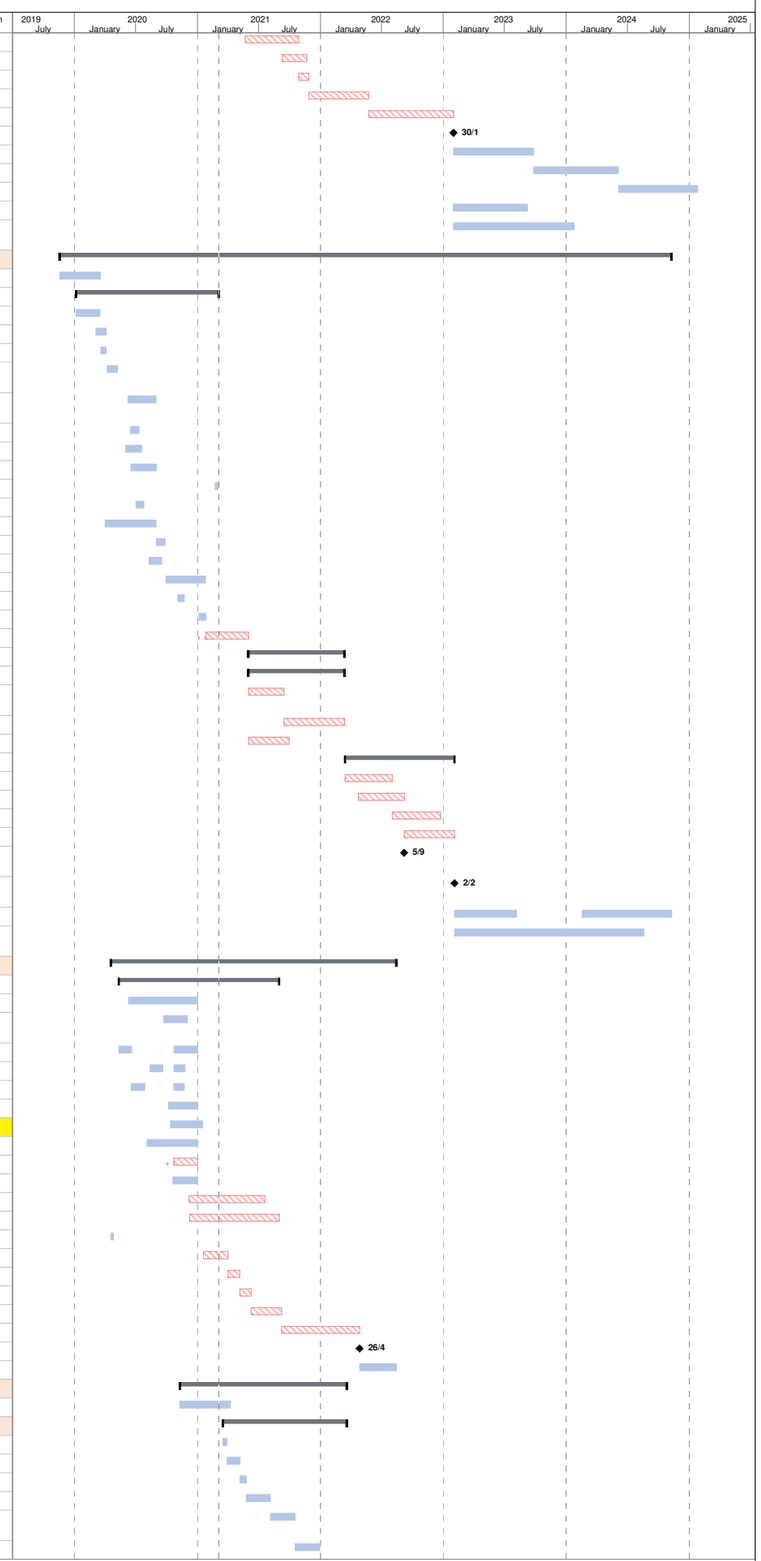
ID	Activity ID	Key Date	Task Name	NCE	ECE	Baseline Duration	Baseline Start	Baseline Finish	Duration	Start	Finish	Actual Start	Actual Finish	Predecessors	Successors	Total Slack	Risk Allowance	% Complete	Individual Critical Path
217	**CIW-0000**	*	**Inlet Works No.1, B-2**			**854 days**	**Mon 6/1/20**	**Mon 21/11/22**	**888 days?**	**Tue 26/11/19**	**Wed 23/11/22**	**Tue 26/11/19**	**NA**			**715 days?**		**40%**	
218	**CIW-1000**		**Diversion Works (1. Inlet Trunk Sewer, Leachate Rising Mains, Sludge Pipes, Tank Drains and Pipelines near Primary Sludge Thinkeners)**			**180 days**	**Mon 6/1/20**	**Fri 14/8/20**	**459 days?**	**Tue 26/11/19**	**Wed 16/6/21**	**Tue 26/11/19**	**NA**	**190,135**	**43FF**	**36 days?**		**49%**	
219	CIW-1100		Utilities scanning to idenify existing UU arrangement			12 days	Mon 6/1/20	Sat 18/1/20	0 days	Fri 13/12/19	Sat 18/1/20	Fri 13/12/19	Sat 18/1/20	170	220SS,222	0 days		100%	
220	CIW-1200		Trial pits to locate the collection points			24 days	Mon 6/1/20	Wed 5/2/20	0 days	Mon 6/1/20	Tue 10/3/20	Mon 6/1/20	Tue 10/3/20	170,219SS,136	238,285FS+13 days,257	0 days		100%	
221	**CIW-1300**		**Installation and Commissioning of Temporary Activated Carbon Deodorization Unit for the Existing Inlet Works**			**0 days**	**NA**	**NA**	**98 days**	**Wed 11/3/20**	**Sat 11/7/20**	**Wed 11/3/20**	**Sat 11/7/20**			**0 days**		**100%**	
222	CIW-1310		Construction of concrete plinth			0 days	NA	NA	24 days	Wed 11/3/20	Wed 8/4/20	Wed 11/3/20	Wed 8/4/20	219	223	0 days		100%	
223	CIW-1320		Installation of Deodorizer			0 days	NA	NA	40 days	Thu 9/4/20	Sat 30/5/20	Thu 9/4/20	Sat 30/5/20	222	224	0 days		100%	
224	CIW-1330		Testing & commissioning			0 days	NA	NA	15 days	Mon 1/6/20	Wed 17/6/20	Mon 1/6/20	Wed 17/6/20	223	225FS-1 day	0 days		100%	
225	CIW-1340		Demolishment of the existing carbon deodorization unit			0 days	NA	NA	20 days	Wed 17/6/20	Sat 11/7/20	Wed 17/6/20	Sat 11/7/20	224FS-1 day		0 days		100%	
226	**CIW-1400**		**Diversion of Inlet Trunk Sewer (approx. 40m 1800mm dia concrete pipe, 4 deep manholes and Inlet Reception Chamber)**			**146 days**	**Thu 6/2/20**	**Mon 3/8/20**	**354 days?**	**Tue 18/2/20**	**Wed 28/4/21**	**Tue 18/2/20**	**NA**			**0 days?**		**41%**	
227	CIW-1405		Joint Initial Survey arrangement with MTRCL (NCE)			0 days	NA	NA	92 days	Tue 18/2/20	Wed 10/6/20	Tue 18/2/20	Wed 10/6/20		228	0 days		100%	
228	CIW-1410		Remedial Works for uncharted sludge Pipe leakage		030	0 days	NA	NA	1 day	Sat 14/3/20	Sat 14/3/20	Sat 14/3/20	Sat 14/3/20	227	229	0 days		100%	
229	CIW-1420		Diversion of uncharted DN250 sludge pipe		030	0 days	NA	NA	32 days	Sat 14/3/20	Fri 24/4/20	Sat 14/3/20	Fri 24/4/20	228	236,230,231	0 days		100%	
230	CIW-1421		Diversion of uncharted 2' water pipe		024	0 days	NA	NA	9 days	Wed 15/4/20	Fri 24/4/20	Wed 15/4/20	Fri 24/4/20	229	236	0 days		100%	
231	CIW-1422		Additional Underground Utility Scanning for existing sludge pipe		32	0 days	NA	NA	1 day	Sat 18/4/20	Sat 18/4/20	Sat 18/4/20	Sat 18/4/20	229		0 days		100%	
232	CIW-1423		HV Cable Diversion for Inlet Works		84	0 days	NA	NA	121 days	Sat 10/10/20	Mon 8/3/21	Sat 10/10/20	NA		310,233	0 days		0%	
233			Exposing, Removal and Diversion of Existing Cables near Inlet Works No. 1		236	0 days	NA	NA	1 day?	Tue 9/3/21	Tue 9/3/21	NA	NA	232		-94 days?		0%	
234	CIW-1424		Diversion of Existing Sludge Rising Main and Sewerage System		81	0 days	NA	NA	102 days	Mon 28/9/20	Sat 30/1/21	Mon 28/9/20	NA		309,310,268,279,280	0 days		0%	
235	CIW-1425		Demolition of Deodorization System and Facilities between Existing Primary Sludge Thickeners and Primary Sludge Pump Pit		037	0 days	NA	NA	1 day	Fri 28/8/20	Fri 28/8/20	Fri 28/8/20	Fri 28/8/20			0 days		100%	
236	CIW-1430		Removal of concrete surround and uncharted sludge pipe		030	0 days	NA	NA	20 days	Fri 24/4/20	Tue 19/5/20	Fri 24/4/20	Tue 19/5/20	229,230	237	0 days		100%	
237	CIW-1440		Remedial works for uncharted pipe and unforeseen water seepage	021		0 days	NA	NA	10 days	Fri 8/5/20	Tue 19/5/20	Fri 8/5/20	Tue 19/5/20	236	238,239	0 days		100%	
238	**CIW-1450**		**Trench Excavation for 1800mm dia pipeline and manholes**			**146 days**	**Thu 6/2/20**	**Mon 3/8/20**	**208 days**	**Wed 20/5/20**	**Tue 26/1/21**	**Wed 20/5/20**	**NA**	**220,237**		**-61 days**		**84%**	
239	CIW-1450a		Sheetpile installation (on hold due to identification of uncharted obstruction)	045		0 days	NA	NA	26 days	Wed 20/5/20	Thu 18/6/20	Wed 20/5/20	Thu 18/6/20	237	240	0 days		100%	
240	CIW-1450b		Trench Excavation for 1800mm dia pipeline and manholes			45 days	Thu 6/2/20	Sat 28/3/20	22 days	Thu 18/6/20	Wed 15/7/20	Thu 18/6/20	Wed 15/7/20	239	241,253	0 days		100%	
241	CIW-1450c		Identification of uncharted concrete surround and pipes near MHA01	045		0 days	NA	NA	29 days	Thu 16/7/20	Tue 18/8/20	Thu 16/7/20	Tue 18/8/20	240	244,249,253	0 days		100%	
242	CIW-1450d		Removal of existing DSD drawpits near IRC & exposure of CLP calbes with installation of additional temporary support	051		0 days	NA	NA	26 days	Thu 16/7/20	Fri 14/8/20	Thu 16/7/20	Fri 14/8/20			0 days		100%	
243	CIW-1450e		Removal of uncharted concrete surround and pipes near MHA01 and Sheetpile installation	045		0 days	NA	NA	10 days	Fri 7/8/20	Tue 18/8/20	Fri 7/8/20	Tue 18/8/20		244,249	0 days		100%	
244	CIW-1450f		Revised type of pipe bedding between Manholes no. MHA01 and MHA02	078	096	0 days	NA	NA	7 days	Mon 28/9/20	Wed 7/10/20	Mon 28/9/20	Wed 7/10/20	243,241	245	0 days		100%	
245	CIW-1450g		Grade 200 Rockfill below the Formation level of the proposed pipe between MHA01 and MHA02	072,07	079	0 days	NA	NA	28 days	Tue 11/8/20	Fri 11/9/20	Tue 11/8/20	Fri 11/9/20	244	247	0 days		100%	
246	CIW-1450h		Grade 200 Rockfill in ELS cofferdam of IRC	161		0 days	NA	NA	28 days	Tue 22/12/20	Tue 26/1/21	NA	NA		247	-61 days		0%	
247	CIW-1451		Construct M/H MHA01, MHA02, MHA04 and Inlet Reception Chamber			65 days	Mon 30/3/20	Fri 19/6/20	88 days	Tue 27/10/20	Wed 28/4/21	Tue 27/10/20	NA	245,249,248,250,246	283	-194 days		34%	
248	CIW-1452		Enlarged size of Manhole MHA02	022	052	0 days	NA	NA	6 days	Tue 1/9/20	Mon 7/9/20	Tue 1/9/20	Mon 7/9/20		247	0 days		100%	
249	CIW-1453		Additional Works for Manhole MHA01 Constructin and Pipe Connection to Manhole MHA01	094,14		0 days	NA	NA	123 days	Wed 16/9/20	Tue 16/2/21	Wed 16/9/20	NA	241,243	247	-76 days		0%	
250	CIW-1454		Additional Works for IRC and Pipe Connection to IRC from Existing Manhole FMH1004115	096		0 days	NA	NA	17 days	Fri 18/9/20	Fri 9/10/20	Fri 18/9/20	Fri 9/10/20		251,253,247	0 days		100%	
251	CIW-1455		Removal of left-in sheetpiles at IRC	111		0 days	NA	NA	3 days	Mon 19/10/20	Wed 21/10/20	Mon 19/10/20	Wed 21/10/20	250		0 days		100%	
252	CIW-1456		Compliance Test for DN1800 Precast Concrete Pipe	077	065	0 days	NA	NA	1 day	Fri 18/9/20	Fri 18/9/20	Fri 18/9/20	Fri 18/9/20			0 days		100%	
253	CIW-1457		Lay 1800mm dia concretre pipe			24 days	Sat 20/6/20	Mon 20/7/20	88 days	Thu 17/9/20	Mon 25/1/21	Thu 17/9/20	NA	240,241,250	254	-72 days		0%	
254	CIW-1458	KD1B	Connection to existing Inlet Chamber			12 days	Tue 21/7/20	Mon 3/8/20	12 days	Tue 26/1/21	Mon 8/2/21	NA	NA	253	43FF,309	-72 days		0%	
255	**CIW-1500**		**Diversion of Leachate Rising Main, Sludge Pipes and Tank Drain**			**150 days**	**Thu 6/2/20**	**Fri 7/8/20**	**495 days**	**Tue 26/11/19**	**Thu 29/7/21**	**Tue 26/11/19**	**NA**			**0 days**		**51%**	
256	CIW-1510	KD1B	Diversion of Tank Drain MHD8.5 (approx. 70m CHES1 & CHES2)			150 days	Thu 6/2/20	Fri 7/8/20	63 days	Sat 19/9/20	Fri 4/12/20	Sat 19/9/20	NA	278	43FF,309	-19 days		94%	
257	**CIW-1500a**		**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)**			150 days	Thu 6/2/20	Fri 7/8/20	**475 days**	**Tue 26/11/19**	**Tue 6/7/21**	**Tue 26/11/19**	**NA**	**220**		**0 days**		**57%**	
258	CIW-1500b		Joint Initial Survey arrangement with MTRCL (NCE)			0 days	NA	NA	158 days	Tue 26/11/19	Wed 10/6/20	Tue 26/11/19	Wed 10/6/20			0 days		100%	
259	CIW-1500c		Site Clearance & inspection pit excavation under conforming alignments			0 days	NA	NA	36 days	Fri 12/6/20	Sat 25/7/20	Fri 12/6/20	Sat 25/7/20			0 days		100%	
260	**CIW-1511**		**Tank Drain Diversion near MTRCL track**			**0 days**	**NA**	**NA**	**193 days**	**Thu 11/6/20**	**Sat 30/1/21**	**Thu 11/6/20**	**NA**			**0 days**		**75%**	
261	CIW-1511a		Excavation of trial pit near MHD9.5 (TP45 & 47)	044	040	0 days	NA	NA	12 days	Mon 27/7/20	Sat 8/8/20	Mon 27/7/20	Sat 8/8/20		262,266	0 days		100%	
262	CIW-1511b		Uncharted cables found near MTRC track and identification	044		0 days	NA	NA	1 day	Thu 18/6/20	Thu 18/6/20	Thu 18/6/20	Thu 18/6/20	261		0 days		100%	
263	CIW-1511c		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		264	0 days		100%	
264	CIW-1511d		Lower the ground surface, opening and additional trial pit (TP38)	046		0 days	NA	NA	60 days	Thu 11/6/20	Fri 21/8/20	Thu 11/6/20	Fri 21/8/20	263	265	0 days		100%	
265	CIW-1511e		Excavation of Trial Pits near Manhle MHA04 and MH09		040	0 days	NA	NA	60 days	Thu 11/6/20	Fri 21/8/20	Thu 11/6/20	Fri 21/8/20	264		0 days		100%	
266	CIW-1511f		Additional Trial Pit between MHD9.5 and MHA04	095		0 days	NA	NA	25 days	Fri 21/8/20	Fri 18/9/20	Fri 21/8/20	Fri 18/9/20	261	267	0 days		100%	
267	CIW-1511g		Trimming of existing concrete surround	085	051	0 days	NA	NA	19 days	Tue 8/9/20	Tue 29/9/20	Tue 8/9/20	Tue 29/9/20	266	270	0 days		100%	
268	CIW-1511h		Potential Delay for Construction of Manhole MHD9.5	145		0 days	NA	NA	61 days	Wed 18/11/20	Sat 30/1/21	Wed 18/11/20	NA	234		-65 days		0%	
269	CIW-1511i		Compliance Test for DN675 and DN825 Precast concrete pipe		232	0 days	NA	NA	1 day	Fri 18/12/20	Fri 18/12/20	NA	NA		272	-31 days		0%	
270	CIW-1512		Additional Special manhole for tank drain (NCE)			0 days	NA	NA	35 days	Mon 24/8/20	Mon 5/10/20	Mon 24/8/20	Mon 5/10/20	267	271,272	0 days		100%	
271	CIW-1513		Breaking of concrete surround of cables (0.8mx0.8mx70m) (NCE)			0 days	NA	NA	60 days	Tue 6/10/20	Tue 15/12/20	Tue 6/10/20	NA	270		-28 days		78%	
272	CIW-1514	KD1B	Construction of tank drain along revised alignment (NCE)			0 days	NA	NA	221 days	Tue 6/10/20	Tue 6/7/21	Tue 6/10/20	NA	270,269	273SS+80 days,43FF,309	-189 days		21%	
273	CIW-1515		Replacement of rock fill material (NCE)			0 days	NA	NA	105 days	Tue 12/1/21	Sat 22/5/21	NA	NA	272SS+80 days	274SS+80 days	-158 days		0%	
274	CIW-1516		Backfilling with concrete bedding (NCE)			0 days	NA	NA	30 days	Thu 22/4/21	Fri 28/5/21	NA	NA	273SS+80 days		-158 days		0%	
275	**CIW-1520**		**Diversion of Sludge Pipes**			75 days	Tue 21/4/20	Tue 21/7/20	**364 days**	**Mon 11/5/20**	**Thu 29/7/21**	**Mon 11/5/20**	**NA**			**0 days**		**42%**	
276	CIW-1520a		Excavation of trial pit and identification of connection point	064		0 days	NA	NA	103 days	Mon 11/5/20	Wed 9/9/20	Mon 11/5/20	Wed 9/9/20		277	0 days		100%	
277	CIW-1520b		Trench excavation for twin DN250 sludge pipe and stopped by AECOM	064		75 days	Tue 21/4/20	Tue 21/7/20	4 days	Wed 15/7/20	Sat 18/7/20	Wed 15/7/20	Sat 18/7/20	276	278	0 days		100%	
278	CIW-1520c		Additional hole drilling works and identification of connetion point			0 days	NA	NA	53 days	Mon 20/7/20	Fri 18/9/20	Mon 20/7/20	Fri 18/9/20	277	256	0 days		100%	
279	CIW-1520d		Substandard DI 250 Leachate Pipe	120		0 days	NA	NA	60 days	Mon 1/2/21	Sat 17/4/21	NA	NA	234		-125 days		0%	
280	CIW-1520e		Substandard DI 500 Sewage Pipe	133		0 days	NA	NA	50 days	Mon 1/2/21	Tue 6/4/21	NA	NA	234		-115 days		0%	
281	CIW-1520f		Encounter of uncharted concrete pipe within sheetpile cofferdam at MHA04	123		0 days	NA	NA	2 days	Tue 10/11/20	Wed 11/11/20	Tue 10/11/20	Wed 11/11/20		282	0 days		100%	
282	CIW-1520g	KD1B	Resumption and construction of sludge pipe construction			0 days	NA	NA	253 days	Sat 19/9/20	Thu 29/7/21	Sat 19/9/20	NA	281	43FF,309	-209 days		23%	
283	CIW-1530	KD1B	Diversion of Leachate Rising Main			60 days	Tue 21/4/20	Fri 3/7/20	60 days	Thu 29/4/21	Mon 12/7/21	NA	NA	247	43FF,309	-194 days		0%	
284	**CIW-1600**		**Diversion of pipelines near Primary Sludge Thickeners (approx. 180m long 150mm to 375mm concrete pipes)**			**156 days**	**Thu 6/2/20**	**Fri 14/8/20**	**307 days**	**Thu 19/3/20**	**Wed 31/3/21**	**Thu 19/3/20**	**NA**			**0 days**		**48%**	
285	CIW-1610		Trench Excavation from M/H MHD1E to MHD5 (approx. 90m long with M/Hs MHD1A, 1B, 1C, 1D & 1E)			60 days	Thu 6/2/20	Mon 20/4/20	50 days	Sat 28/3/20	Mon 1/6/20	Sat 28/3/20	Mon 1/6/20	220FS+13 days		0 days		100%	
286	CIW-1620		Manholes construction and Pipe laying			60 days	Mon 30/3/20	Sat 13/6/20	50 days	Tue 2/6/20	Fri 31/7/20	Tue 2/6/20	Fri 31/7/20		43FF,293,287	0 days		100%	
287	CIW-1621		Temporary Diversion of Existing DN200 Filitrate Rising Main		034	0 days	NA	NA	20 days	Sat 1/8/20	Mon 24/8/20	Sat 1/8/20	Mon 24/8/20	286	288,289	0 days		100%	



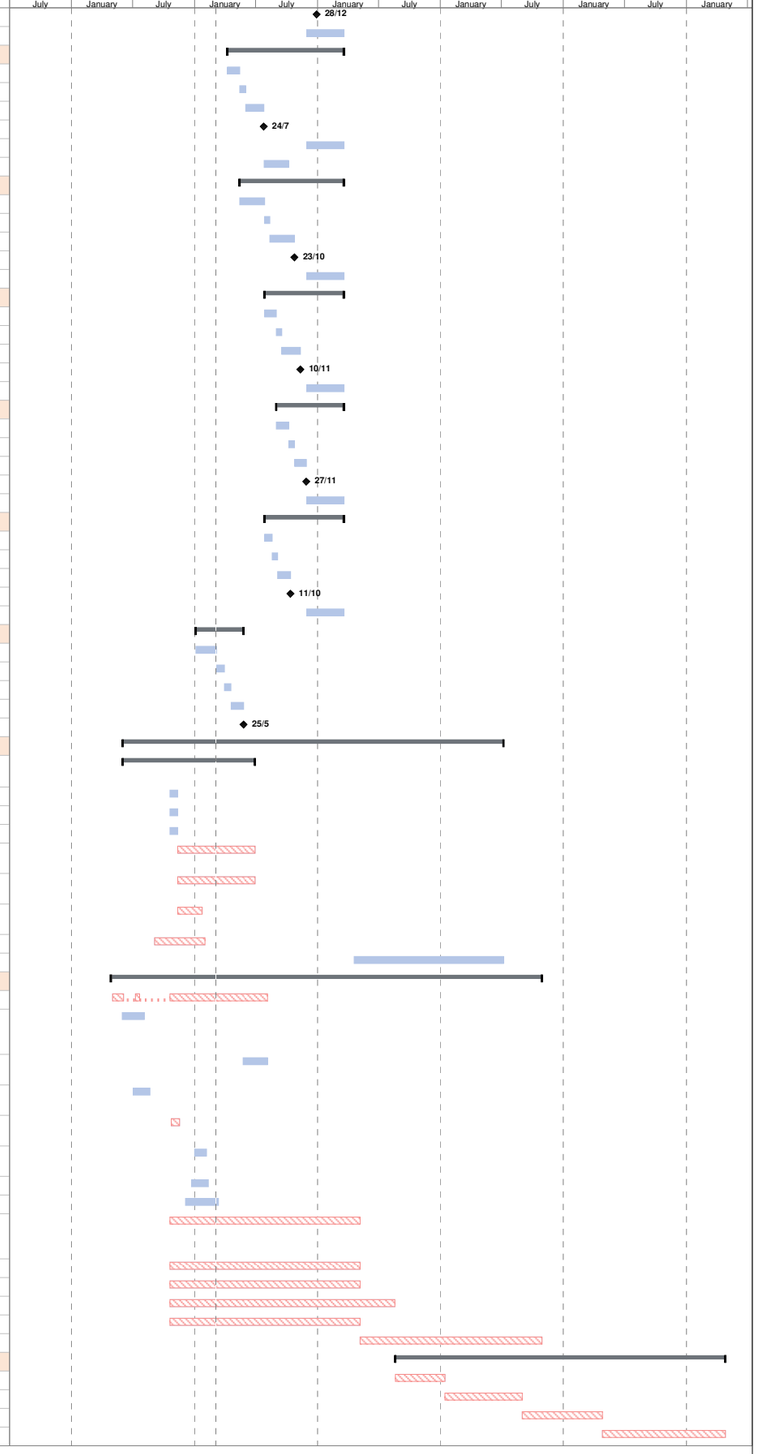
ID	Activity ID	Key Date	Task Name	NCE/E	CE/	Baseline Duration	Baseline Start	Baseline Finish	Duration	Start	Finish	Actual Start	Actual Finish	Predecessors	Successors	Total Slack	Risk Allowance	% Complete	Individual Critical Path
288	CIW-1622		E&M Equipment at Primary Sludge Thickeners to be Dismantled and Returned to DSD/ST1		039	0 days	NA	NA	60 days	Tue 25/8/20	Thu 5/11/20	Tue 25/8/20	NA	287		6 days		15%	
289	CIW-1623		Pipeline Diversion Works near Primary Sludge Thickening Tank	114		0 days	NA	NA	30 days	Tue 25/8/20	Mon 28/9/20	NA	NA	287	290,291	-5 days		0%	
290	CIW-1624		Uncharted underground utilities at Proposed MHD5B	126		0 days	NA	NA	41 days	Thu 12/11/20	Thu 31/12/20	NA	NA	289	291SS+15 days	-40 days		0%	
291	CIW-1625		Uncharted underground utilities near Proposed MHD5B	141		0 days	NA	NA	26 days	Mon 30/11/20	Thu 31/12/20	NA	NA	290SS+15 days,289	292	-40 days		0%	
292	CIW-1630		Trench Excavation from M/H MHD1E to MHD5 (approx. 90m long with M/Hs M1A to M3B)	012		60 days	Tue 21/4/20	Fri 3/7/20	32 days	Thu 19/3/20	Wed 29/4/20	Thu 19/3/20	Wed 29/4/20	291	293,294	0 days		100%	
293	CIW-1640		Manholes construction and Pipe laying	012	058	25 days	Mon 15/6/20	Wed 15/7/20	12 days	Mon 4/5/20	Sat 16/5/20	Mon 4/5/20	Sat 16/5/20	292,286	43FF,296	0 days		100%	
294	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	Wed 2/9/20	Mon 2/11/20	292,298,303,304,305,307	331SS	0 days		100%	
295	CIW-1660		Provision of Pumping System from Screen to Flume Channel		87	0 days	NA	NA	90 days	Tue 10/11/20	Mon 1/3/21	Tue 10/11/20	NA		296	-87 days		0%	
296	CIW-1670	KD1B	Manholes construction and Pipe laying			45 days	Sat 23/5/20	Thu 16/7/20	50 days	Tue 3/11/20	Wed 31/3/21	Tue 3/11/20	NA	293,295	43FF	-113 days		48%	
297	**CIW-2000**		**Decommission and Demolition of Existing Faciliates and Structures**			**240 days**	**Mon 2/3/20**	**Fri 18/12/20**	**135 days**	**Thu 19/3/20**	**Tue 1/9/20**	**Thu 19/3/20**	**Tue 1/9/20**	**6,134,172,174**		**0 days**		**100%**	
298	**CIW-2100**		**Primary Sludge Thickening Tank No.1 and No.2**			**80 days**	**Mon 2/3/20**	**Tue 9/6/20**	**99 days**	**Thu 19/3/20**	**Tue 21/7/20**	**Thu 19/3/20**	**Tue 21/7/20**		**294**	**0 days**		**100%**	
299	CIW-2101		Additional Works for Temporary Diversion of Bypass Pipe near Primary Sludge Thickeners	012		0 days	NA	NA	45 days	Thu 19/3/20	Sun 17/5/20	Thu 19/3/20	Sun 17/5/20			0 days		100%	
300	CIW-2110		Removal of E&M equipment of primary sludge thickening tank	020		0 days	NA	NA	1 day	Thu 4/6/20	Thu 4/6/20	Thu 4/6/20	Thu 4/6/20		301	0 days		100%	
301	CIW-2120		Decommission and Demolition the tank	052		80 days	Mon 2/3/20	Tue 9/6/20	27 days	Thu 18/6/20	Tue 21/7/20	Thu 18/6/20	Tue 21/7/20	300	303	0 days		100%	
302	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%	
303	CIW-2200		Primary Sludge Pump Pit			60 days	Wed 10/6/20	Thu 20/8/20	18 days	Wed 22/7/20	Tue 11/8/20	Wed 22/7/20	Tue 11/8/20	301	304,305,294,306	0 days		100%	
304	CIW-2300		Septic Tank			50 days	Fri 21/8/20	Tue 20/10/20	18 days	Wed 12/8/20	Tue 1/9/20	Wed 12/8/20	Tue 1/9/20	303	294	0 days		100%	
305	**CIW-2400**		**Diesel Tank**			**50 days**	**Wed 21/10/20**	**Fri 18/12/20**	**53 days**	**Thu 2/7/20**	**Tue 1/9/20**	**Thu 2/7/20**	**Tue 1/9/20**	**303**	**294**	**0 days**		**100%**	
306	CIW-2410		Transfers of Remaining Diesel Fuel of Existing Diesel Tank	001		0 days	NA	NA	15 days	Thu 2/7/20	Tue 21/7/20	Thu 2/7/20	Tue 21/7/20	303	307	0 days		100%	
307	CIW-2420		Demolition of diesel tank			50 days	Wed 21/10/20	Fri 18/12/20	18 days	Wed 12/8/20	Tue 1/9/20	Wed 12/8/20	Tue 1/9/20	306	**294**	0 days		100%	
308	**CIW-3000**	*	**Inlet Works No.1 Building**			**569 days**	**Sat 19/12/20**	**Mon 21/11/22**	**661 days**	**Wed 2/9/20**	**Wed 23/11/22**	**Wed 2/9/20**	**NA**	**6**		**715 days**		**0%**	
309	CIW-3100		Predrilling (32nrs, 3rigs, 2.5days/drillhole/rig)			40 days	Mon 4/1/21	Mon 22/2/21	27 days	Tue 15/9/20	Mon 30/8/21	Tue 15/9/20	NA	254,256,272,282,283,234	310SS+40 days	1081 days	1	0%	
310	CIW-3200		Pre-bored H piles (167nos, 2rigs, 2days/rig/pile)			133 days	Tue 23/2/21	Wed 4/8/21	133 days	Tue 9/3/21	Wed 18/8/21	NA	NA	144,309SS+40 days,232,234	311SS+110 days,313,312	-23 days	5	0%	
311	CIW-3300		Sheetpile Installation (3,840sq.m, 1rigs, 50sqm/rig/day)			80 days	Tue 23/3/21	Wed 30/6/21	80 days	Fri 23/7/21	Wed 27/10/21	NA	NA	310SS+110 days,145	313	-23 days		0%	
312	CIW-3400		Pile Load Test			26 days	Thu 5/8/21	Fri 3/9/21	21 days	Thu 19/8/21	Sat 11/9/21	NA	NA	310	313,314,315,318	13 days		0%	
313	CIW-3500		**ELS works (strutting 4 layers, excavate soil 7445cu.m)**			**77 days**	**Sat 4/9/21**	**Mon 6/12/21**	**77 days**	**Sat 2/10/21**	**Tue 4/1/22**	**NA**	**NA**	**311,310,146,312**		**0 days**	**5**	**0%**	
314	CIW-3510		Phrase C (Grid A1 to G3) - Excavation to -3.3mPD and blinding			77 days	Fri 4/6/21	Mon 6/12/21	77 days	Sat 2/10/21	Tue 4/1/22	NA	NA	312		978 days		0%	
315	CIW-3520		Phrase B (Grid A1 to G3) - Excavation to -7.5mPD and blinding			77 days	Fri 4/6/21	Mon 6/12/21	77 days	Sat 2/10/21	Tue 4/1/22	NA	NA	312	322,326	-2 days		0%	
316	CIW-3600		**R.C. Structure works**			**296 days**	**Thu 5/8/21**	**Thu 4/8/22**	**296 days**	**Thu 2/9/21**	**Thu 1/9/22**	**NA**	**NA**	**148,192,193,196,194**		**0 days**	**5**	**0%**	
317	CIW-3610		**Phase A (Grid G3 to L7)**			**105 days**	**Thu 5/8/21**	**Wed 8/12/21**	**105 days**	**Thu 2/9/21**	**Sat 8/1/22**	**NA**	**NA**			**167 days**		**0%**	
318	CIW-3611		Rebar fix and formwork and concreting for the pile cap (G/F)			40 days	Thu 5/8/21	Mon 20/9/21	40 days	Mon 13/9/21	Mon 1/11/21	NA	NA	312	319	158 days		0%	
319	CIW-3612		Rebar fix and formwork and concreting upto +13.45mPD (1/F)			25 days	Tue 21/9/21	Fri 22/10/21	25 days	Tue 2/11/21	Tue 30/11/21	NA	NA	318	320	158 days		0%	
320	CIW-3613		Rebar fix and formwork and concreting upto +25.80mPD (R/F)			40 days	Sat 23/10/21	Wed 8/12/21	40 days	Wed 1/12/21	Wed 19/1/22	NA	NA	319	44FF	158 days		0%	
321	CIW-3620		**Phase B (Gride A1 to G3) (621 sqm)**			**193 days**	**Tue 7/12/21**	**Thu 4/8/22**	**193 days**	**Wed 5/1/22**	**Tue 30/8/22**	**NA**	**NA**			**0 days**		**0%**	
322	CIW-3621		Rebar fix and formwork and concreting for the Inlet Works structure upto Ground Level			54 days	Tue 7/12/21	Mon 14/2/22	54 days	Wed 5/1/22	Fri 11/3/22	NA	NA	315	323	-2 days		0%	
323	CIW-3622		Apply waterproofing membrance and backfilling			14 days	Tue 15/2/22	Wed 2/3/22	14 days	Sat 12/3/22	Mon 28/3/22	NA	NA	322,191	324	-2 days		0%	
324	CIW-3623		Rebar fix and formwork and concreting for the Inlet Works structure upto Roof Level			105 days	Thu 3/3/22	Thu 4/8/22	105 days	Tue 29/3/22	Sat 6/8/22	NA	NA	323	329,330,44FF	-2 days		0%	
325	CIW-3630		**Phase C (G1 to L3) (662 sqm)**			**260 days**	**Thu 16/9/21**	**Thu 4/8/22**	**260 days**	**Wed 5/1/22**	**Sat 19/11/22**	**NA**	**NA**			**0 days**		**0%**	
326	CIW-3631		Rebar fix and formwork and concreting for the Inlet Works structure upto Ground Level			54 days	Tue 7/12/21	Mon 14/2/22	54 days	Wed 5/1/22	Fri 11/3/22	NA	NA	315	327	-2 days		0%	
327	CIW-3632		Apply waterproofing membrance and backfilling			14 days	Tue 15/2/22	Wed 2/3/22	14 days	Sat 12/3/22	Mon 28/3/22	NA	NA	326,191	328	-2 days		0%	
328	CIW-3633	KD1C	Rebar fix and formwork and concreting for the Inlet Works structure upto Roof Level			105 days	Thu 3/3/22	Thu 4/8/22	105 days	Tue 29/3/22	Sat 6/8/22	NA	NA	327	330,44FF,329	-2 days		0%	
329	CIW-3700	KD1C	Allow access to Contractor DE/2018/04 for E&M installation and T&C works			0 days	Thu 4/8/22	Thu 4/8/22	0 days	Sat 6/8/22	Sat 6/8/22	NA	NA	328,324	44FF	-2 days		0%	
330	CIW-3800	SW1	ABWF works + BS works			90 days	Fri 5/8/22	Mon 21/11/22	90 days	Mon 8/8/22	Wed 23/11/22	NA	NA	328,195,153,324	56FF	715 days		0%	
331	CIW-3900	SW2	Process Pipe CHE chainage 0-20 & CHF chainage 0-20			0 days	NA	NA	0 days	Wed 2/9/20	Wed 2/9/20	Wed 2/9/20	Wed 2/9/20	294SS	57FF	0 days		100%	
332	**CPS-0000**	*	**Primary Sedimentation Tanks, B-3**			**1115 days**	**Mon 18/11/19**	**Wed 23/8/23**	**1220 days**	**Mon 18/11/19**	**Fri 29/12/23**	**Mon 18/11/19**	**NA**	**8**		**390 days**		**23%**	
333	CPS-1000		Operation of the Existing Primary sedimentation Tanks			615 days	Mon 18/11/19	Sat 24/7/21	615 days	Mon 18/11/19	Sat 24/7/21	Mon 18/11/19	NA	2	334	1 day		62%	
334	CPS-1100		Identification of existing cables near Primiary Sedimentation Tank		88	0 days	NA	NA	65 days	Mon 26/7/21	Mon 11/10/21	NA	NA	333	335	0 days		0%	
335	CPS-1200		Reinstatement and re-commissioning of existing Primary Sedimentation Tank No. 4 and 6 (by others)			0 days	NA	NA	35 days	Tue 12/10/21	Mon 22/11/21	NA	NA	334	336	0 days		0%	
336	CPS-2000		Demolition of existing primary sedimentation tanks no. 1 & 2			45 days	Mon 13/12/21	Wed 9/2/22	45 days	Tue 23/11/21	Mon 17/1/22	NA	NA	134,172,174,335	337	0 days		0%	
337	CPS-3000		Predrilling (68nrs, 3rigs, 3days/drillhole/rig)			38 days	Thu 10/2/22	Fri 25/3/22	38 days	Tue 18/1/22	Sat 5/3/22	NA	NA	336,139,422	338	0 days	1	0%	
338	CPS-4000		Pre-bored H piles (205nos, 4rigs, 2days/pile/rig)			102 days	Sat 26/3/22	Mon 1/8/22	102 days	Mon 7/3/22	Tue 12/7/22	NA	NA	337,144,423	339FS-40 days,341,340	0 days	5	0%	
339	CPS-5000		Sheetpile Installation (FSP-II, 3360sq.m, 1rigs, 50sqm/rig/day)			85 days	Wed 25/5/22	Fri 2/9/22	85 days	Wed 25/5/22	Fri 2/9/22	NA	NA	338FS-40 days,145	341	0 days		0%	
340	CPS-6000		Pile Load Test			26 days	Tue 2/8/22	Wed 31/8/22	26 days	Wed 13/7/22	Thu 11/8/22	NA	NA	338	341	19 days		0%	
341	CPS-7000		ELS works (20000cu.m soil with 2 layers wailing / strutting)			45 days	Sat 3/9/22	Fri 28/10/22	45 days	Sat 3/9/22	Fri 28/10/22	NA	NA	338,147,340,339,140	342	0 days	3	0%	
342	CPS-8000	KD1D	R.C. Structure works			92 days	Sat 29/10/22	Mon 20/2/23	92 days	Sat 29/10/22	Mon 20/2/23	NA	NA	341,149	343,344,45FF,345,346	0 days	3	0%	
343	CPS-9000	KD1D	Allow access to Contractor DE/2018/04 for E&M installation and T&C works			0 days	Mon 20/2/23	Mon 20/2/23	0 days	Mon 20/2/23	Mon 20/2/23	NA	NA	342	45FF	0 days		0%	
344	CPS-10000	SW1	ABWF works + BS works			150 days	Tue 21/2/23	Wed 23/8/23	150 days	Tue 21/2/23	Wed 23/8/23	NA	NA	342,195,153	56FF	495 days		0%	
345	CPS-11000	SW1	Flowmeter Chamber no.1			60 days	Tue 21/2/23	Sat 6/5/23	60 days	Tue 21/2/23	Sat 6/5/23	NA	NA	342	56FF	585 days		0%	
346	CPS-12000	SW3	Process Pipe CHG chainage 0-50, CHH chainage 0-80, CHI chainage 0-95 & CHJ chianage 0-40			0 days	NA	NA	255 days	Tue 21/2/23	Fri 29/12/23	NA	NA	342	58FF	390 days		0%	
347	**CBR-0000**	*	**Bioreactors No.2A & 2B, B-4**			**1106 days**	**Mon 18/11/19**	**Sat 12/8/23**	**1532 days**	**Mon 18/11/19**	**Fri 24/1/25**	**Mon 18/11/19**	**NA**	**9**		**78 days**		**18%**	
348	CBR-1000		Operation of 2no. Existing 800mm air mains over bioreactor no.2			360 days	Mon 18/11/19	Wed 11/11/20	360 days	Mon 18/11/19	Wed 11/11/20	Mon 18/11/19	Wed 11/11/20	2	351FF	0 days		100%	
349	CBR-2000		Construction of Removable Steel Shutter in the Common Channel of BR2 and 3		67	0 days	NA	NA	80 days	Thu 1/10/20	Fri 8/1/21	Thu 1/10/20	NA	156	350	1251 days		41%	
350			Construction of Isolation Wall in Existing common channel of BR2 (PPMI 061)			0 days	NA	NA	20 days	Sat 9/1/21	Mon 1/2/21	NA	NA	349		1251 days		0%	
351	CBR-4000		Diversion of rising main, drainage pipes, and foam collection & surplus activated sludge pipes			0 days	NA	NA	90 days	Wed 13/1/21	Wed 5/5/21	NA	NA	348FF	352FF	1178 days		0%	
352	CBR-4100		Take Down E&M Equipment in Bioreactor BR2 and Return to DSD	55	95	0 days	NA	NA	164 days	Thu 15/10/20	Thu 6/5/21	Thu 15/10/20	NA	351FF		1177 days		0%	
353	CBR-4200		Installation of monitoring points before demolition of BR2	113	219	0 days	NA	NA	10 days	Sat 30/1/21	Wed 10/2/21	Sat 30/1/21	NA	359	354	0 days		0%	
354	CBR-4300		Condition Survey for BR2 (NCE)			0 days	NA	NA	1 day	Thu 11/2/21	Thu 11/2/21	NA	NA	353	360	0 days		0%	
355	**CBR-5000**		**Demolition of existing bioreactor no.2**			**60 days**	**Wed 3/2/21**	**Tue 20/4/21**	**50 days**	**Sat 19/12/20**	**Mon 22/2/21**	**Tue 10/11/20**	**NA**	**134,172,174**		**1236 days**		**42%**	
356	CBR-5100		Identification and removal of existing cables	121		0 days	NA	NA	35 days	Tue 10/11/20	Sat 19/12/20	Tue 10/11/20	Sat 19/12/20		358,357	0 days		100%	
357	CBR-5200		Diversion of existing lighting cable and Earthing ducts (NCE)			0 days	NA	NA	29 days	Mon 21/12/20	Tue 26/1/21	Mon 21/12/20	Tue 26/1/21	356	360	0 days		100%	
358	CBR-5300		Plugging and demolition of existing DN800 air main		91	0 days	NA	NA	4 days	Mon 28/12/20	Thu 31/12/20	Mon 28/12/20	Thu 31/12/20	356		0 days		100%	
359	CBR-5400		Overflow incident from BR1 to BR2 works area	77		0 days	NA	NA	20 days	Tue 19/1/21	Wed 10/2/21	Tue 19/1/21	NA		360,353	0 days		0%	
360	CBR-5500		Demolition of existing pipe bridge, partition wall and base slab (Stage 1)			30 days	Wed 3/2/21	Fri 12/3/21	45 days	Fri 29/1/21	Thu 25/3/21	Fri 29/1/21	NA	357,354,359	362	-21 days		0%	
361	CBR-5600		Demolition of surrounded walls and channel of BR2 (Stage 2)			30 days	Fri 12/3/21	Tue 20/4/21	30 days	Thu 28/10/21	Wed 1/12/21	NA	NA	363		1004 days		0%	
362	CBR-6000		Predrilling (36nrs, 3rigs, 2days/drillhole/rig)			44 days	Wed 21/4/21	Sat 12/6/21	44 days	Fri 26/3/21	Fri 21/5/21	NA	NA	360	363	-21 days	1	0%	



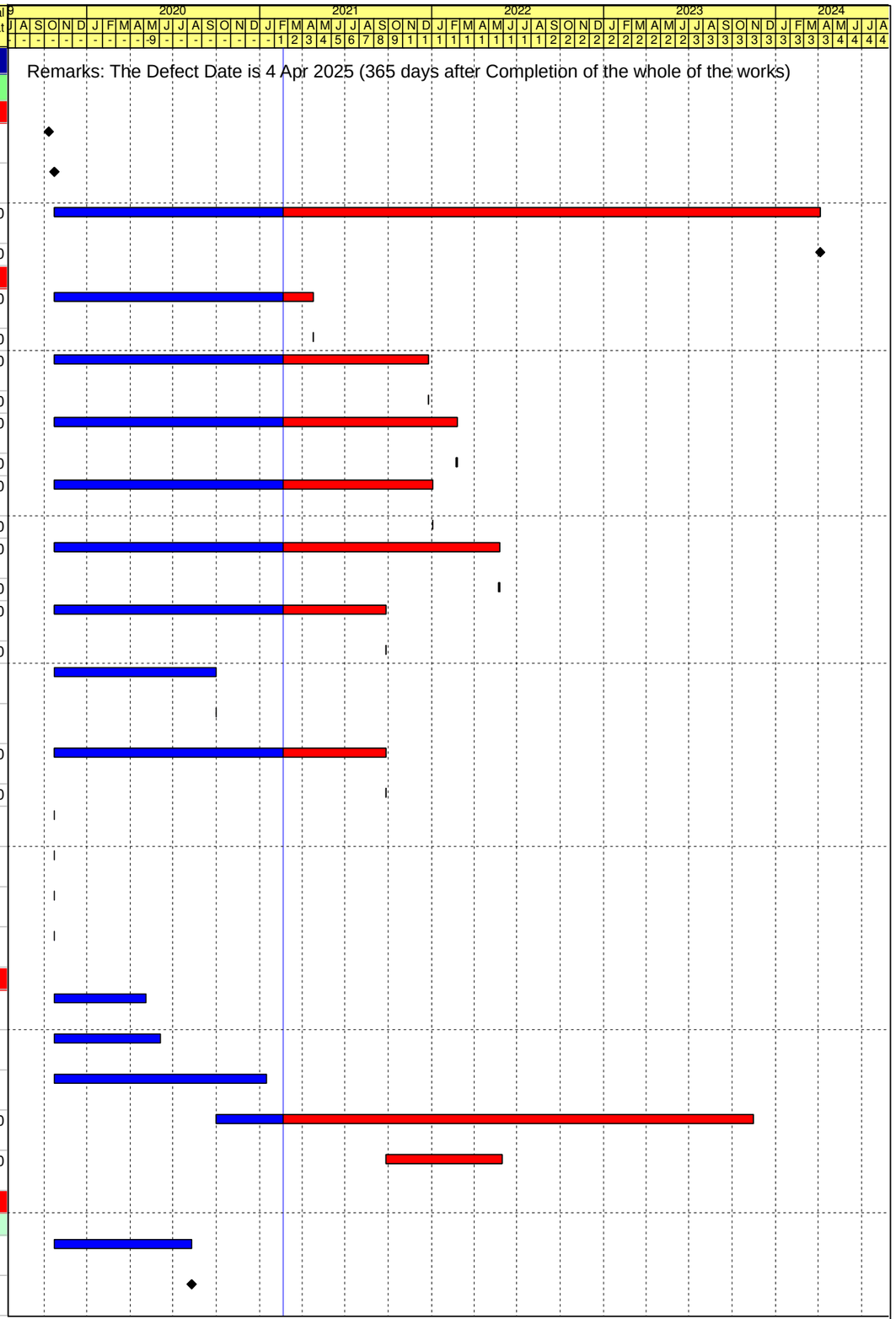
ID	Activity ID	Key Date	Task Name	NCE/E	CE/	Baseline Duration	Baseline Start	Baseline Finish	Duration	Start	Finish	Actual Start	Actual Finish	Predecessors	Successors	Total Slack	Risk Allowance	% Complete	Individual Critical Path
363	CBR-7000		Pre-bored H piles (157nos, 2rigs, 2days/pile/rig)			131 days	Tue 15/6/21	Thu 18/11/21	131 days	Sat 22/5/21	Wed 27/10/21	NA	NA	362,144,390	364FS-39 days,366,365,361	-21 days	5	0%	
364	CBR-8000		Sheetpile Installation (3000sq.m, 1rigs, 50sqm/rig/day)			60 days	Wed 8/9/21	Fri 19/11/21	60 days	Thu 9/9/21	Sat 20/11/21	NA	NA	363FS-39 days,145	366	-16 days		0%	
365	CBR-9000		Pile Load Test			26 days	Wed 8/9/21	Tue 19/1/21	26 days	Thu 28/10/21	Fri 26/11/21	NA	NA	363	366	-21 days		0%	
366	CBR-10000		ELS works (18100cu.m soil with 4 layers wailing / strutting)			125 days	Mon 20/12/21	Fri 27/5/22	140 days	Sat 27/11/21	Mon 23/5/22	NA	NA	363,364,147,365,140	367	-21 days	3	0%	
367	CBR-11000	KD1E	R.C. Structure works			180 days	Sat 28/5/22	Sat 31/12/22	205 days	Tue 24/5/22	Mon 30/1/23	NA	NA	150,192,193,366,196,194	368,372,46FF,369,370,371,3	-21 days	5	0%	
368	CBR-12000	KD1E	Allow access to Contractor DE/2018/04 for E&M installation and T&C works			0 days	Sat 31/12/22	Sat 31/12/22	0 days	Mon 30/1/23	Mon 30/1/23	NA	NA	367	46FF	-21 days		0%	
369	CBR-13000	SW1	Flowmeter no. 2-4			180 days	2023/1/3	2023/8/12	195 days	Tue 31/1/23	Sat 23/9/23	NA	NA	367	370	78 days		0%	
370	CBR-14000	SW1	Gate Valve Chamber no.1-3			180 days	2023/1/3	2023/8/12	195 days	Mon 25/9/23	Mon 3/6/24	NA	NA	367,369	371	78 days		0%	
371	CBR-15000	SW1	Plug Valve Chamber no.1-2			180 days	2023/1/3	2023/8/12	195 days	Tue 4/6/24	Fri 24/1/25	NA	NA	367,370	56FF	78 days		0%	
372	CBR-16000	SW1	ABWF works + BS works			180 days	Tue 3/1/23	Sat 12/8/23	180 days	Tue 31/1/23	Wed 6/9/23	NA	NA	367,195,153	56FF	483 days		0%	
373	CBR-17000	SW3	Process Pipe CHQ chainage 65-170, CHP chainage 60-130, CHO chainage 65-140, CHL chainage 0-35 & CHK chianage 0-50			0 days	NA	NA	292 days	Tue 31/1/23	Mon 22/1/24	NA	NA	367	58FF	371 days		0%	
374	**CMF-0000**	*	**Membrane Facilities Building, B-5**			**941 days**	**Mon 6/1/20**	**Thu 9/3/23**	**1468 days**	**Mon 18/11/19**	**Fri 8/11/24**	**Mon 18/11/19**	**NA**	**2**		**142 days**		**30%**	
375			Operation of existing Final Sedimentation Tanks no.3 & 4 (CE 0026)			0 days	NA	NA	98 days	Mon 18/11/19	Tue 17/3/20	Mon 18/11/19	Tue 17/3/20	2		0 days		100%	
376	**CMF-1000**		**Demolition of existing final sedimentation tanks no. 3 & 4**			**14 days**	**Mon 6/1/20**	**Tue 21/1/20**	**344 days**	**Mon 6/1/20**	**Thu 4/3/21**	**Mon 6/1/20**	**NA**	**172,134,10**		**1227 days**		**98%**	
377	CMF-1100		Confirmation of Decommission Schedule		30	0 days	NA	NA	58 days	Mon 6/1/20	Mon 16/3/20	Mon 6/1/20	Mon 16/3/20		378	0 days		100%	
378	CMF-1200		Provision of new submersed pump		26	0 days	NA	NA	27 days	Wed 4/3/20	Fri 3/4/20	Wed 4/3/20	Fri 3/4/20	377	379	0 days		100%	
379	CMF-1205		Assistant to decommissioning of Final Sedimentation Tank No. 3 and 4			0 days	NA	NA	14 days	Wed 4/3/20	Fri 3/4/20	Wed 4/3/20	Fri 3/4/20	378	380	0 days		100%	
380	CMF-1300		Additional dismantling works to retain specified electrical and mechanical equipment	013		0 days	NA	NA	21 days	Tue 7/4/20	Wed 6/5/20	Tue 7/4/20	Wed 6/5/20	379	381	0 days		100%	
381	CMF-1400		Additional pluging works for DN 1200 Conc. S&S pipe at wash water pumping station chamber	015		0 days	NA	NA	70 days	Mon 8/6/20	Sat 29/8/20	Mon 8/6/20	Sat 29/8/20	380	382	0 days		100%	
382	CMF-1500		Diversion of wash water main		032	0 days	NA	NA	21 days	Mon 15/6/20	Fri 10/7/20	Mon 15/6/20	Fri 10/7/20	381	383	0 days		100%	
383	CMF-1600		Isolation wall for RAS Channel No.1		035	0 days	NA	NA	40 days	Mon 1/6/20	Sat 18/7/20	Mon 1/6/20	Sat 18/7/20	382	388	0 days		100%	
384	CMF-1700		Plug End of DN1400 Bioreactor No.2 Effluent Pipe		043	0 days	NA	NA	63 days	Tue 16/6/20	Sat 29/8/20	Tue 16/6/20	Sat 29/8/20			0 days		100%	
385	CMF-1710		Removal of DN1400 Bioreactor No. 2 Effluent Pipe		043	0 days	NA	NA	10 days	Mon 22/2/21	Thu 4/3/21	NA				1227 days		0%	
386	CMF-1800		Exposed and disconnet uncharted existing cable between FST3 and FST 4	007	038	0 days	NA	NA	20 days	Thu 2/7/20	Fri 24/7/20	Thu 2/7/20	Fri 24/7/20			0 days		100%	
387	CMF-1110		Demolition of structure no. 3 & 4			14 days	Mon 6/1/20	Tue 21/1/20	122 days	Wed 1/4/20	Sat 29/8/20	Wed 1/4/20	Sat 29/8/20		389	0 days		100%	
388	CMF-1900		Removal of Existing DN150 SAS Rising Main at RAS Channel No. 1		060	0 days	NA	NA	23 days	Mon 31/8/20	Fri 25/9/20	Mon 31/8/20	Fri 25/9/20	383	390	0 days		100%	
389	CMF-2000		Predrilling (83nrs, 4rigs, 2.5days/drillhole/rig)			42 days	Sat 6/6/20	Mon 27/7/20	31 days	Mon 10/8/20	Mon 14/9/20	Mon 10/8/20	Mon 14/9/20	139,387	390	0 days	1	100%	
390	CMF-3000		Pre-bored H piles (171nos, 2rigs, 1.5days/pile/rig)			140 days	Tue 28/7/20	Wed 13/1/21	96 days	Mon 28/9/20	Sat 23/1/21	Mon 28/9/20	Sat 23/1/21	389,144,388	363,391,392	0 days	5	100%	
391	CMF-3100		Change of Layout of Basement of MFB no. 2	102		0 days	NA	NA	17 days	Tue 3/11/20	Sat 21/11/20	Tue 3/11/20	Sat 21/11/20	390		0 days		100%	
392	CMF-4000		Pile Load Test			25 days	Thu 14/1/21	Tue 16/2/21	19 days	Mon 4/1/21	Mon 25/1/21	Mon 4/1/21	Mon 25/1/21	390	393,396	0 days		100%	
393	CMF-5000		Installation of sheetpile (5200sq.m, 1rigs, 50sqm/rig/day)			40 days	Wed 22/1/20	Wed 11/3/20	100 days	Fri 1/1/21	Mon 31/5/21	Fri 1/1/21	NA	392	396	-197 days		0%	
394	**CMF-6000**		**ELS works**			**169 days**	**Wed 17/2/21**	**Thu 9/9/21**	**234 days**	**Tue 1/6/21**	**Sat 12/3/22**	**NA**	**NA**	**10**		**-197 days**	**5**	**0%**	**MFB**
395	**CMF-6100**		**Pharse A (A1 to N6) - Excavation to -11mPD and blinding**	**112**	**45**	**169 days**	**Wed 17/2/21**	**Thu 9/9/21**	**234 days**	**Tue 1/6/21**	**Sat 12/3/22**	**NA**	**NA**		**398SS**	**-197 days**		**0%**	**MFB**
396	CMF-6110		Soil Excavation [Extended working hours 0700-1900 & reduction of excavation volume]			169 days	Wed 17/2/21	Thu 9/9/21	88 days	Tue 1/6/21	Mon 13/9/21	NA	NA	393,147,392	397	-197 days		0%	MFB
397	CMF-6120		Additional Rock Excavation [2200 cu.m, 7.5cu.m/group x 2]	112		0 days	NA	NA	146 days	Tue 14/9/21	Sat 12/3/22	NA	NA	396	400	-197 days		0%	MFB
398	CMF-6200		Pharse B (A6 to N10) - Excavation to -1.9mPD and blinding			169 days	Wed 17/2/21	Thu 9/9/21	100 days	Tue 1/6/21	Tue 28/9/21	NA	NA	395SS	401	-33 days		0%	MFB
399	**CMF-7000**		**RC Structure works**			**232 days**	**Fri 10/9/21**	**Sat 25/6/22**	**262 days**	**Tue 15/3/22**	**Thu 2/2/23**	**NA**	**NA**	**10**		**-198 days**	**5**	**0%**	**MFB**
400	CMF-7100	KD1F	Phase A - from B2 - Level 1			112 days	Fri 10/9/21	Tue 25/1/22	112 days	Tue 15/3/22	Mon 1/8/22	NA	NA	151,192,193,196,194,397	401SS+30 days,402,404	-198 days		0%	MFB
401	CMF-7110	KD1F	Phase B - from B1 - Level 1			112 days	Fri 10/9/21	Tue 25/1/22	112 days	Sat 23/4/22	Mon 5/9/22	NA	NA	400SS+30 days,398	403,404	-198 days		0%	MFB
402	CMF-7120	KD1G	Phase A - from Level 1 to Roof			120 days	Wed 26/1/22	Sat 25/6/22	120 days	Tue 2/8/22	Thu 22/12/22	NA	NA	400	405,406,407	-168 days		0%	MFB
403	CMF-7130	KD1G	Phase B - from Level 1 to Roof			120 days	Wed 26/1/22	Sat 25/6/22	120 days	Tue 6/9/22	Thu 2/2/23	NA	NA	401	405,406,407	-198 days		0%	MFB
404	CMF-8000	KD1F	Allow access to Contractor DE/2018/04 for E&M installation and T&C works (from B2-level 1)			0 days	Tue 25/1/22	Tue 25/1/22	0 days	Mon 5/9/22	Mon 5/9/22	NA	NA	400,401	47FF	-196 days		0%	MFB
405	CMF-9000	KD1G	Allow access to Contractor DE/2018/04 for E&M installation and T&C works (from Level to Roof)			0 days	Sat 25/6/22	Sat 25/6/22	0 days	Thu 2/2/23	Thu 2/2/23	NA	NA	402,403	48FF	-198 days		0%	MFB
406	CMF-10000	SW1	ABWF works + BS works			210 days	Mon 27/6/22	Thu 9/3/23	359 days	Fri 3/2/23	Fri 8/11/24	NA	NA	195,153,402,403	56FF	142 days		0%	MFB
407	CMF-11000	SW3	Process Pipe CHQ chainage 0-65, CHM chainage 0-120, CHN chainage 0-125, CHO chainage 0-65, CHP chainage 0-60 & CHV chaiange 0-50			0 days	NA	NA	450 days	Fri 3/2/23	Sat 17/8/24	NA	NA	402,403	58FF	210 days		0%	MFB
408	**CSA-0000**	*	**SAS Pumping Station, B-6**			**455 days**	**Wed 20/5/20**	**Thu 25/11/21**	**690 days**	**Sat 18/4/20**	**Sat 13/8/22**	**Sat 18/4/20**	**NA**	**11**		**799 days**		**44%**	
409	**CSA-1000**		**Additional Preliminary Works**			**0 days**	**NA**	**NA**	**390 days**	**Tue 12/5/20**	**Mon 30/8/21**	**Tue 12/5/20**	**NA**			**-19 days**		**60%**	
410	CSA-1100		Diversion of Existing SAS Rising Main near SAS Pumping Station (PPMI 025)		69	0 days	NA	NA	170 days	Tue 9/6/20	Thu 31/12/20	Tue 9/6/20	Thu 31/12/20		423	0 days		100%	
411	CSA-1200		Decommission of exisiting power and signal systems in leachate Pump station switch room (PPMI 039)		74	0 days	NA	NA	58 days	Mon 21/9/20	Mon 30/11/20	Mon 21/9/20	Mon 30/11/20	158	423	0 days		100%	
412	CSA-1300		Construction of Cable trough for CLP 11kv Cable Diversion (PPMI 041)		61	0 days	NA	NA	91 days	Tue 12/5/20	Thu 31/12/20	Tue 12/5/20	Thu 31/12/20	160	423	0 days		100%	
413	CSA-1400		Demolition of Existing Pillar box and its concrete plinth (PPMI 014)		30	0 days	NA	NA	60 days	Wed 12/8/20	Mon 23/11/20	Wed 12/8/20	NA	161	423	44 days		55%	
414	CSA-1500		Excavation to locate existing underground cable near SAS Pump Station		78	0 days	NA	NA	59 days	Wed 17/6/20	Sat 21/11/20	Wed 17/6/20	Sat 21/11/20	162	423	0 days		100%	
415	CSA-1600		Diversion of Existing DN80 Permeate Rising Main near SAS Pumping station		89	0 days	NA	NA	72 days	Tue 6/10/20	Thu 31/12/20	Tue 6/10/20	Thu 31/12/20		423	0 days		100%	
416	CSA-1800		Trench Excavation near SAS for diversion of 11kV cable by CLP		97	0 days	NA	NA	79 days	Mon 12/10/20	Fri 15/1/21	Mon 12/10/20	Fri 15/1/21		423	0 days		100%	
417	CSA-1700		Relocation of Oil Interceptor Near Existing Compressor House		70	0 days	NA	NA	125 days	Mon 3/8/20	Thu 31/12/20	Mon 3/8/20	Thu 31/12/20		423	0 days		100%	
418	CSA-1900		Diversion of pumping system sewerage		83	0 days	NA	NA	80 days	Wed 23/9/20	Wed 30/12/20	Wed 23/9/20	NA	163	425,423,419	-110 days		0%	
419	CSA-1910		Diversion of Existing copper pipe near proposed SAS pumping station	107	225	0 days	NA	NA	60 days	Mon 19/10/20	Wed 30/12/20	Mon 19/10/20	Wed 30/12/20	418		0 days		100%	
420	CSA-1920		Pipework of proposed SAS Pumping Station - 13 nos. of puddles		221	0 days	NA	NA	180 days	Mon 7/12/20	Mon 19/7/21	NA	NA		427SS+30 days	-18 days		0%	
421	CSA-1930		Additional Sewage Rising main for SAS		220	0 days	NA	NA	215 days	Tue 8/12/20	Mon 30/8/21	NA	NA		427SS+30 days	-19 days		0%	
422	CSA-2000		Predrilling (4nrs, 1rig, 4days/drillhole/rig)			16 days	Wed 20/5/20	Sat 6/6/20	7 days	Sat 18/4/20	Sat 25/4/20	Sat 18/4/20	Sat 25/4/20	139	337,423	0 days		100%	
423	CSA-3000		Pre-bored H piles (12nos, 1rigs, 4days/pile/rig)			60 days	Mon 8/6/20	Tue 18/8/20	60 days	Mon 18/1/21	Wed 31/3/21	Mon 18/1/21	NA	144,422,160,412,410,411,413,414,415,41	338,424	-210 days	2	0%	
424	CSA-4000		Pile Load Test			26 days	Wed 19/8/20	Thu 17/9/20	26 days	Thu 1/4/21	Wed 5/5/21	NA	NA	423	426,425	-210 days		0%	
425	CSA-5000		Sheetpile Installation (FSP-II, 690sq.m, 40sqm/day)			28 days	Wed 19/8/20	Sat 19/9/20	28 days	Thu 6/5/21	Tue 8/6/21	NA	NA	145,424,418	426	-210 days		0%	
426	CSA-6000		ELS works (1300cu.m soil with 2 layers wailing / strutting)			75 days	Mon 21/9/20	Wed 19/2/20	75 days	Wed 9/6/21	Mon 6/9/21	NA	NA	425,147,424,140	427	-210 days	2	0%	
427	CSA-7000	KD1H	R.C. Structure works			186 days	Mon 21/12/20	Mon 9/8/21	186 days	Tue 7/9/21	Tue 26/4/22	NA	NA	152,192,193,426,196,194,420SS+30 days	428,429,49FF	-210 days	5	0%	
428	CSA-8000	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	Wed 26/4/22	Tue 26/4/22	NA	NA	427	49FF	-210 days		0%	
429	CSA-9000	SW1	ABWF works + BS works			90 days	Tue 10/8/21	Thu 25/11/21	90 days	Wed 27/4/22	Sat 13/8/22	NA	NA	427,195,153,465SS	56FF	799 days		0%	
430	**CAS-0000**	*	**Ancillary Structures, B-7**			**503 days**	**Mon 7/9/20**	**Sat 21/5/22**	**404 days**	**Mon 9/11/20**	**Sat 19/3/22**	**NA**	**NA**	**12**		**48 days**		**0%**	
431	**CAS-1000**		Demolition of Existing Faciliates and Structures (leachate pump pit & pumping station)			120 days	Mon 7/9/20	Sat 30/1/21	120 days	Mon 9/11/20	Wed 7/4/21	NA	NA	134,172,174	441,448,454,460,466	48 days		0%	
432	**CCS-1000**	*	**Chemical System No.1**			**168 days**	**Mon 1/2/21**	**Thu 26/8/21**	**300 days**	**Wed 17/3/21**	**Sat 19/3/22**	**NA**	**NA**			**24 days**		**0%**	
433	CCS-1100		Excavation for Raft Footing (20cu.m)			10 days	Mon 1/2/21	Thu 11/2/21	10 days	Wed 17/3/21	Sat 27/3/21	NA	NA	140	442,434	24 days		0%	
434	CCS-1110		Diversion of Leachate Rising Main near SSSH (PPMI 030)			0 days	NA	NA	30 days	Mon 29/3/21	Thu 6/5/21	NA	NA	433	435	24 days		0%	
435	CCS-1200		Plate load test			14 days	Tue 16/2/21	Wed 3/3/21	14 days	Fri 7/5/21	Mon 24/5/21	NA	NA	434	436	24 days		0%	
436	CCS-1300	KD1J	R.C. structure works			45 days	Mon 15/3/21	Mon 10/5/21	60 days	Tue 25/5/21	Wed 4/8/21	NA	NA	435	51FF,440,437	24 days	2	0%	
437	CCS-1310		Construction of Flowmeter chamber, gate valve chamber and associated sewerage (PMI 085)			0 days	NA	NA	60 days	Thu 5/8/21	Sat 16/10/21	NA	NA	436	438	24 days		0%	
438	CCS-1310		Demolition of SSSH Pump Pit and Associated Sewerage System (PMI 086)			0 days	NA	NA	60 days	Mon 18/10/21	Tue 28/12/21	NA	NA	437	439	24 days		0%	



ID	Activity ID	Key Date	Task Name	NCE/ECE/	Baseline Duration	Baseline Start	Baseline Finish	Duration	Start	Finish	Actual Start	Actual Finish	Predecessors	Successors	Total Slack	Risk Allowance	% Complete	Individual Critical Path
439	CCS-1400	KD1J	Allow access to Contractor DE/2018/04 for E&M installation and T&C works		0 days	Mon 10/5/21	Mon 10/5/21	0 days	Tue 28/12/21	Tue 28/12/21	NA	NA	438	51FF	24 days		0%	
440	CCS-1500	SW1	ABWF works + BS works		90 days	Tue 11/5/21	Thu 26/8/21	90 days	Mon 29/11/21	Sat 19/3/22	NA	NA	195,153,436,465SS	56FF	917 days		0%	
441	**CCS-2000**	*	**Chemical System No.2**		**189 days**	**Thu 4/3/21**	**Thu 21/10/21**	**284 days**	**Thu 8/4/21**	**Sat 19/3/22**	**NA**	**NA**	**431**		**48 days**		**0%**	
442	CCS-2100		Excavation for Raft Footing (100cu.m)		15 days	Thu 4/3/21	Sat 20/3/21	30 days	Thu 8/4/21	Thu 13/5/21	NA	NA	140,433	443,449	48 days		0%	
443	CCS-2200		Plate load test		14 days	Mon 22/3/21	Fri 9/4/21	14 days	Fri 14/5/21	Mon 31/5/21	NA	NA	442	444	153 days		0%	
444	CCS-2300	KD1J	R.C. structure works		45 days	Tue 11/5/21	Mon 5/7/21	45 days	Tue 1/6/21	Sat 24/7/21	NA	NA	443	445,51FF,446,447	153 days	2	0%	
445	CCS-2400	KD1J	Allow access to Contractor DE/2018/04 for E&M installation and T&C works		0 days	Mon 5/7/21	Mon 5/7/21	0 days	Sat 24/7/21	Sat 24/7/21	NA	NA	444	51FF	153 days		0%	
446	CCS-2500	SW1	ABWF works + BS works		90 days	Tue 6/7/21	Thu 21/10/21	90 days	Mon 29/11/21	Sat 19/3/22	NA	NA	195,153,444,465SS	56FF	917 days		0%	
447	CCS-2600	SW1	Demolition of existing chemical room		60 days	Tue 6/7/21	Mon 13/9/21	60 days	Mon 26/7/21	Tue 5/10/21	NA	NA	444	56FF	1052 days		0%	
448	**CFS-1000**	*	**Fire Services Sprinkler Pumping Room**		**220 days**	**Sat 10/4/21**	**Sun 3/1/21**	**254 days**	**Fri 14/5/21**	**Sat 19/3/22**	**NA**	**NA**	**431**		**48 days**		**0%**	
449	CFS-2000		Excavation for Raft Footing (800cu.m)		45 days	Sat 10/4/21	Thu 3/6/21	60 days	Fri 14/5/21	Mon 26/7/21	NA	NA	140,442	450,455,467	48 days		0%	
450	CFS-3000		Plate load test		14 days	Fri 4/6/21	Mon 21/6/21	14 days	Tue 27/7/21	Wed 11/8/21	NA	NA	449	451	78 days		0%	
451	CFS-4000	KD1J	R.C. structure works		60 days	Tue 6/7/21	Mon 13/9/21	60 days	Thu 12/8/21	Sat 23/10/21	NA	NA	450	453,452,51FF	78 days	2	0%	
452	CFS-5000	KD1J	Allow access to Contractor DE/2018/04 for E&M installation and T&C works		0 days	Mon 13/9/21	Mon 13/9/21	0 days	Sat 23/10/21	Sat 23/10/21	NA	NA	451	51FF	78 days		0%	
453	CFS-6000	SW1	ABWF works + BS works		90 days	Tue 14/9/21	Mon 3/1/22	90 days	Mon 29/11/21	Sat 19/3/22	NA	NA	195,153,451,465SS	56FF	917 days		0%	
454	**CTC-0000**	*	**Temporary Chemical Dosing System**		**191 days**	**Tue 22/6/21**	**Thu 10/2/22**	**194 days**	**Tue 27/7/21**	**Sat 19/3/22**	**NA**	**NA**	**431**		**48 days**		**0%**	
455	CTC-1000		Excavation for Raft Footing (300cu.m)		30 days	Tue 22/6/21	Tue 27/7/21	30 days	Tue 27/7/21	Mon 30/8/21	NA	NA	140,449	456,461	48 days		0%	
456	CTC-2000		Plate load test		14 days	Wed 28/7/21	Thu 12/8/21	14 days	Tue 31/8/21	Wed 15/9/21	NA	NA	455	457	63 days		0%	
457	CTC-3000	KD1J	R.C. structure works		30 days	Tue 14/9/21	Thu 21/10/21	45 days	Thu 16/9/21	Wed 10/11/21	NA	NA	456	458,51FF,459	63 days	1	0%	
458	CTC-4000	KD1J	Allow access to Contractor DE/2018/04 for E&M installation and T&C works		0 days	Thu 21/10/21	Thu 21/10/21	0 days	Wed 10/11/21	Wed 10/11/21	NA	NA	457	51FF	63 days		0%	
459	CTC-5000	SW1	ABWF works + BS works		90 days	Fri 22/10/21	Thu 10/2/22	90 days	Mon 29/11/21	Sat 19/3/22	NA	NA	195,153,457,465SS	56FF	917 days		0%	
460	**CFB-0000**	*	**Fire Hydrant and Booster Pump Room**		**177 days**	**Fri 13/8/21**	**Thu 17/3/22**	**164 days**	**Tue 31/8/21**	**Sat 19/3/22**	**NA**	**NA**	**431**		**48 days**		**0%**	
461	CFB-1000		Excavation for Raft Footing (200cu.m)		30 days	Fri 13/8/21	Thu 16/9/21	30 days	Tue 31/8/21	Wed 6/10/21	NA	NA	140,455	462	48 days		0%	
462	CFB-2000		Plate load test		14 days	Fri 17/9/21	Tue 5/10/21	14 days	Thu 7/10/21	Sat 23/10/21	NA	NA	461	463	48 days		0%	
463	CFB-3000	KD1J	R.C. structure works		30 days	Fri 22/10/21	Thu 25/11/21	30 days	Mon 25/10/21	Sat 27/11/21	NA	NA	462	464,465,51FF	48 days	1	0%	
464	CFB-4000	KD1J	Allow access to Contractor DE/2018/04 for E&M installation and T&C works		0 days	Thu 25/11/21	Thu 25/11/21	0 days	Sat 27/11/21	Sat 27/11/21	NA	NA	463	51FF	48 days		0%	
465	CFB-5000	SW1	ABWF works + BS works		90 days	Fri 26/11/21	Thu 17/3/22	90 days	Mon 29/11/21	Sat 19/3/22	NA	NA	463,195,153	56FF,471SS,459SS,453SS,4	917 days		0%	
466	**CEG-0000**	*	**Emergency Generator House**		**163 days**	**Wed 6/10/21**	**Tue 26/4/22**	**194 days**	**Tue 27/7/21**	**Sat 19/3/22**	**NA**	**NA**	**431**		**88 days**		**0%**	
467	CEG-1000		Excavation for Raft Footing (100cu.m)		20 days	Wed 6/10/21	Fri 29/10/21	20 days	Tue 27/7/21	Wed 18/8/21	NA	NA	140,449	468	88 days		0%	
468	CEG-2000		Plate load test		14 days	Sat 30/10/21	Mon 15/11/21	14 days	Thu 19/8/21	Fri 3/9/21	NA	NA	467	469	88 days		0%	
469	CEG-3000	KD1J	R.C. structure works		30 days	Fri 26/11/21	Mon 3/1/22	30 days	Sat 4/9/21	Mon 11/10/21	NA	NA	468	470,51FF,471	88 days	1	0%	
470	CEG-4000	KD1J	Allow access to Contractor DE/2018/04 for E&M installation and T&C works		0 days	Mon 3/1/22	Mon 3/1/22	0 days	Mon 11/10/21	Mon 11/10/21	NA	NA	469	51FF	88 days		0%	
471	CEG-5000	SW1	ABWF works + BS works		90 days	Tue 4/1/22	Tue 26/4/22	90 days	Mon 29/11/21	Sat 19/3/22	NA	NA	195,153,469,465SS	56FF	917 days		0%	
472	**CDS-0000**	*	**Deodorization System No.1 and No.3A**		**149 days**	**Tue 16/11/21**	**Sat 21/5/22**	**114 days**	**Mon 4/1/21**	**Tue 25/5/21**	**NA**	**NA**			**203 days**		**0%**	
473	CDS-1000		Demolition of Existing Leachate Pump Pit		0 days	NA	NA	50 days	Mon 4/1/21	Fri 5/3/21	NA	NA		474	203 days		0%	
474	CDS-2000		Excavation for Raft Footing (400cu.m)		20 days	Tue 16/11/21	Wed 8/12/21	20 days	Sat 6/3/21	Mon 29/3/21	NA	NA	140,473,486	475	203 days		0%	
475	CDS-3000		Plate load test		14 days	Thu 9/12/21	Fri 24/12/21	14 days	Tue 30/3/21	Sat 17/4/21	NA	NA	474	476	203 days		0%	
476	CDS-4000	KD1J	Footing works		20 days	Tue 4/1/22	Wed 26/1/22	30 days	Mon 19/4/21	Tue 25/5/21	NA	NA	475	477,51FF	203 days		0%	
477	CDS-5000	KD1J	Allow access to Contractor DE/2018/04 for E&M installation and T&C works		0 days	Wed 26/1/22	Wed 26/1/22	0 days	Tue 25/5/21	Tue 25/5/21	NA	NA	476	51FF	203 days		0%	
478	**CAA-0000**	*	**Additional and Alternation Works for Existing Facilities (B-7A, B-8, B-8A)**		**662 days**	**Wed 29/1/20**	**Fri 22/4/22**	**918 days**	**Mon 1/6/20**	**Thu 6/7/23**	**Mon 1/6/20**	**NA**			**536 days**		**39%**	
479	**CAA-1000**	**KD2B**	**B-8A Alternation works for existing Air Blower House No.2 (Pipeline CHTA, approx. 133m DN800 D.I.)**		**180 days**	**Wed 29/1/20**	**Thu 3/9/20**	**320 days**	**Mon 1/6/20**	**Mon 28/6/21**	**Mon 1/6/20**	**NA**	**15,154,190**	**53FF**	**0 days**		**53%**	
480	CAA-1100		Change of pipe bridge design	057	0 days	NA	NA	135 days	Mon 1/6/20	Tue 10/11/20	Mon 1/6/20	Tue 10/11/20		483,484,485	0 days		100%	
481	CAA-1200		Additional inspection pit to verify the connection point to existing (CE xxx)		0 days	NA	NA	135 days	Mon 1/6/20	Tue 10/11/20	Mon 1/6/20	Tue 10/11/20		483,484,485	0 days		100%	
482	CAA-1300		Additional MBV installation (CE xxx)		0 days	NA	NA	135 days	Mon 1/6/20	Tue 10/11/20	Mon 1/6/20	Tue 10/11/20		483,484,485	0 days		100%	
483	CAA-1400		Alternation works for existing Air Blower House No.2 (Pipeline CHTA, approx. 133m DN800 D.I.)		180 days	Wed 29/1/20	Thu 3/9/20	185 days	Wed 11/11/20	Mon 28/6/21	Wed 11/11/20	NA	480,481,482	53FF	-135 days		9%	
484	CAA-1500		Re-alignmnet of DN800 Temporary Air Main (CHTA) and Provision of FRP Staircases	064	0 days	NA	NA	185 days	Wed 11/11/20	Mon 28/6/21	Wed 11/11/20	NA	480,481,482		-135 days		9%	
485	CAA-1600		Elevated Section of DN800 Temporary Air Main (CHTA) across existing Bioreactor's Distibution Chamber No. 2 (PPMI 044)	017 062	0 days	NA	NA	60 days	Wed 11/11/20	Fri 22/1/21	NA	NA	480,481,482		-10 days		0%	
486	CAA-2000	KD1I	B7-A Alternation works for exisiting Power House		122 days	Fri 4/9/20	Sat 30/1/21	122 days	Fri 4/9/20	Sat 30/1/21	Fri 4/9/20	NA	13FS-1 day,134,172,174,182	50FF,474	0 days		59%	
487	CAA-3000	SW3	Alternation works for existing Membrane Facilities Building No.1		360 days	Mon 1/2/21	Fri 22/4/22	360 days	Tue 19/4/22	Thu 6/7/23	NA	NA	14FS-1 day,181	58FF	536 days		0%	
488	**CUU-0000**	*	**External Underground Service, Utilities, Road/Drain**		**1091 days**	**Mon 24/2/20**	**Sat 28/10/23**	**1041 days**	**Mon 27/4/20**	**Sat 28/10/23**	**Mon 27/4/20**	**NA**	**16**		**441 days**		**11%**	
489	CUU-1000	KD2A	Process Pipes CHR and CHS (approx. 93m twin DN900 D.I.)		325 days	Mon 24/2/20	Sat 27/3/21	272 days	Mon 27/4/20	Wed 4/8/21	Mon 27/4/20	NA	190,154	501SS+48 days,499SS+48 d	-103.8 days		27%	
490	CUU-1000a		Special Treatment for Removing the Existing Abandoned DN1800 By-pass Pipe and the Concrete Mass in Conflict with the Proposed Sheetpile wall for trenching work of Process Pipeline CHR and CHS	029	0 days	NA	NA	54 days	Sat 30/5/20	Mon 3/8/20	Sat 30/5/20	Mon 3/8/20			0 days		100%	
491	CUU-1000b		Trenchless work for Process Pipes CHR and CHS (approx. 7m twin DN900 D.I.) (PPMI 040)		0 days	NA	NA	60 days	Mon 24/5/21	Wed 4/8/21	NA	NA	492,489FF		1103.2 days		0%	
492	CUU-1001		Removal of Abandoned DN1800 Concrete Pipe and Concrete Mass near Existing UV Disinfection Channel at CHR & CHS Process Pipe Works Area	033	0 days	NA	NA	43 days	Thu 2/7/20	Thu 20/8/20	Thu 2/7/20	Thu 20/8/20		491	0 days		100%	
493	CUU-1002		Grouting for Sheung Shui Slaughter House Boundary Walls along CHR & CHS Pipes Works Area (PPMI 064)		0 days	NA	NA	20 days	Fri 23/10/20	Mon 16/11/20	Fri 23/10/20	NA			0 days		84%	
494	CUU-1003		Ground settlement near CHR CHS Open trench due to leakage of water main at SSSH	080	0 days	NA	NA	30 days	Thu 31/12/20	Thu 4/2/21	NA	NA			1248 days		0%	
495	CUU-1004		Delay Delivery of DI pipes due to COVID-19	076	0 days	NA	NA	40 days	Tue 22/12/20	Tue 9/2/21	NA	NA		497FF	363 days		0%	
496	CUU-1005		Change alignment and fittings for CHDO1 and CHDO2	074	0 days	NA	NA	78 days	Fri 4/12/20	Thu 11/3/21	NA	NA		497FF	340 days		0%	
497	CUU-2000	SW2	Process Pipes, including CHT, CHX, CHY, CHPS1&2, CHS S1&2, CHDO 1&2, CHPSW 1-8, CHTPS, CHPT1&2. CHTFT 1&2, CHTE, CHTD, Foam Collection & Surplus activated sludge rising main pipe		550 days	Mon 29/6/20	Fri 6/5/22	457 days	Mon 19/10/20	Fri 6/5/22	Mon 19/10/20	NA	190,489SS+48 days,154,495FF,496FF	57FF,502	0 days		8%	
498	CUU-3000	SW2	Drainage		550 days	Mon 29/6/20	Fri 6/5/22	457 days	Mon 19/10/20	Fri 6/5/22	Mon 19/10/20	NA	190,489SS+48 days,154	57FF,502	0 days	5	8%	
499	CUU-4000	SW2	Sewerage		550 days	Mon 29/6/20	Fri 6/5/22	457 days	Mon 19/10/20	Fri 6/5/22	Mon 19/10/20	NA	489SS+48 days,190,154	57FF,502	0 days	5	8%	
500	CUU-5000	SW2	Waterworks		550 days	Mon 29/6/20	Fri 6/5/22	542 days	Mon 19/10/20	Wed 17/8/22	Mon 19/10/20	NA	489SS+48 days,190,154	504FS+2 days,57FF	0 days	5	7%	
501	CUU-6000	SW2	Cable Ducts		550 days	Mon 29/6/20	Fri 6/5/22	457 days	Mon 19/10/20	Fri 6/5/22	Mon 19/10/20	NA	489SS+48 days,190,154	502,57FF	0 days	5	8%	
502	CUU-7000	KD3A	Roadworks		540 days	Fri 31/12/21	Sat 28/10/23	440 days	Sat 7/5/22	Sat 28/10/23	NA	NA	501,498,499,497	54FF	0 days	5	0%	
503	**CLW-0000**	*	**Landscaping Works**		**854 days**	**Wed 11/5/22**	**Thu 27/3/25**	**794 days**	**Sat 20/8/22**	**Fri 25/4/25**	**NA**	**NA**	**16**		**0 days**		**0%**	
504	CLW-1000	SW3	Irrigation System		120 days	Wed 11/5/22	Fri 30/9/22	120 days	Sat 20/8/22	Fri 13/1/23	NA	NA	500FS+2 days,190	505,58FF	0 days		0%	
505	CLW-2000	SW3	Hard Landscaping Works		220 days	Mon 3/10/22	Mon 3/7/23	185 days	Sat 14/1/23	Wed 30/8/23	NA	NA	504,155	506,58FF	0 days	5	0%	
506	CLW-3000	SW3	Soft Landscaping Works		220 days	Tue 4/7/23	Tue 26/3/24	185 days	Thu 31/8/23	Thu 25/4/24	NA	NA	505,155	507,58FF	0 days	5	0%	
507	CLW-4000	DLP	Establishment Works (365 days)		294 days	Wed 27/3/24	Thu 27/3/25	365 days	Fri 26/4/24	Fri 25/4/25	NA	NA	506,155	59FF,60FF	0 days	5	0%	



Activity ID	Activity Name	Original Duration	Early Start	Early Finish	Late Start	Late Finish	Total Float
SWH - Main Works Stage 1 Sidestream Treatment Facilities & E&M Works for Sludge Treatment Facilities							
Contract Data							
Starting Date & Completion Date							
AS000010	Contract Date (LOA)	0	11-Oct-19 A		21-Feb-21		
AS000020	Starting Date	0	23-Oct-19 A		21-Feb-21		
AS000110	Whole Contract Period (1626 days from starting date)	1626	23-Oct-19 A	04-Apr-24	21-Feb-21	04-Apr-24	0
AS000220	Completion Date for the whole of the Works	0		04-Apr-24		04-Apr-24	0
Access Date							
AS001100	Portion C-1A (within 480 to 550 days from starting date)	550	23-Oct-19 A	24-Apr-21	21-Feb-21	24-Apr-21	0
AS001120	Planned Access Date for Portion C-1A	1	24-Apr-21	24-Apr-21*	24-Apr-21	24-Apr-21	0
AS001200	Portion C-2A (within 705 to 795 days from starting date)	795	23-Oct-19 A	25-Dec-21	21-Feb-21	25-Dec-21	0
AS001220	Planned Access Date for Portion C-2A	1	25-Dec-21	25-Dec-21*	25-Dec-21	25-Dec-21	0
AS001300	Portion C-2B (within 765 to 855 days from starting date)	855	23-Oct-19 A	23-Feb-22	21-Feb-21	23-Feb-22	0
AS001320	Planned Access Date for Portion C-2B	1	23-Feb-22	23-Feb-22*	23-Feb-22	23-Feb-22	0
AS001400	Portion C-2C (within 715 to 805 days from starting date)	805	23-Oct-19 A	04-Jan-22	21-Feb-21	04-Jan-22	0
AS001420	Planned Access Date for Portion C2-C	1	04-Jan-22	04-Jan-22*	04-Jan-22	04-Jan-22	0
AS001500	Portion C-2D (within 825 to 945 days from starting date)	945	23-Oct-19 A	24-May-22	21-Feb-21	24-May-22	0
AS001520	Planned Access Date for Portion C-2D	1	24-May-22	24-May-22*	24-May-22	24-May-22	0
AS001600	Portion C-3 (within 615 to 705 days from starting date)	705	23-Oct-19 A	26-Sep-21	21-Feb-21	26-Sep-21	0
AS001620	Planned Access Date for Portion C-3	1	26-Sep-21	26-Sep-21*	26-Sep-21	26-Sep-21	0
AS001700	Portion B-1 (within 285 to 345 days from starting date)	345	23-Oct-19 A	30-Sep-20 A	21-Feb-21	21-Feb-21	
AS001720	Planned Access Date for Portion B-1	1	30-Sep-20 A	30-Sep-20 A	21-Feb-21	21-Feb-21	
AS001800	Portion B-2 (within 615 to 705 days from starting date) (SS by NCE-NCE-219)	705	23-Oct-19 A	26-Sep-21	21-Feb-21	26-Sep-21	0
AS001820	Planned Access Date for Portion B-2 (SS by NCE-NCE-219)	1	26-Sep-21	26-Sep-21*	26-Sep-21	26-Sep-21	0
AS001900	Works Area WA1-B (starting date)	1	23-Oct-19 A	23-Oct-19 A	22-Feb-21	22-Feb-21	
AS001910	Planned Access Date for Works Area WA1-B	1	23-Oct-19 A	23-Oct-19 A	22-Feb-21	22-Feb-21	
AS001920	Works Area WA3 (starting date)	1	23-Oct-19 A	23-Oct-19 A	22-Feb-21	22-Feb-21	
AS001930	Planned Access Date for Works Area WA3	1	23-Oct-19 A	23-Oct-19 A	22-Feb-21	22-Feb-21	
Key Dates							
AS002010	KD1A Submission of Civil Requirement Dwgs, Elec. Schematic Dwgs of UV System No.1 and Effluent Pumping Station No.1	196	23-Oct-19 A	05-May-20 A	15-Apr-21	15-Apr-21	
AS002020	KD2A Submission of Civil Requirement Dwgs, Elec. Schematic Dwgs of SD Bldg, SD & DC, CHP Bldg, Workshop No.2, etc.	226	23-Oct-19 A	04-Jun-20 A	09-Jun-21	09-Jun-21	
AS002040	KD2B Submission of Remaining Civil Requirement Dwgs, Elec. Schematic Dwgs of SD Bldg, SD & DC, CHP Bldg, etc.	461	23-Oct-19 A	15-Jan-21 A	09-Jun-21	09-Jun-21	
AS002050	KD3A Completion of Phase 1 Commissioning of Sidestream Treatment Facilities (1140d after Portion B-1 Access)	1141	30-Sep-20 A	14-Nov-23*	21-Feb-21	14-Nov-23	0
AS002060	KD5A - Completion of the BS Fittings Installation at CLP Sub-Station at Workshop No. 2 (245d after Portion C-3 Access)	246	26-Sep-21	29-May-22*	26-Sep-21	29-May-22	0
Completion Date							
Section 1 - Complete All Design at UV System No.1 & EP Station No. 1							
AS003100	Contract Duration of Section 1	291	23-Oct-19 A	08-Aug-20 A	04-Apr-24	04-Apr-24	
AS003110	Completion date - Section 1 (290 days after starting date)	0		08-Aug-20 A		04-Apr-24	



JEC

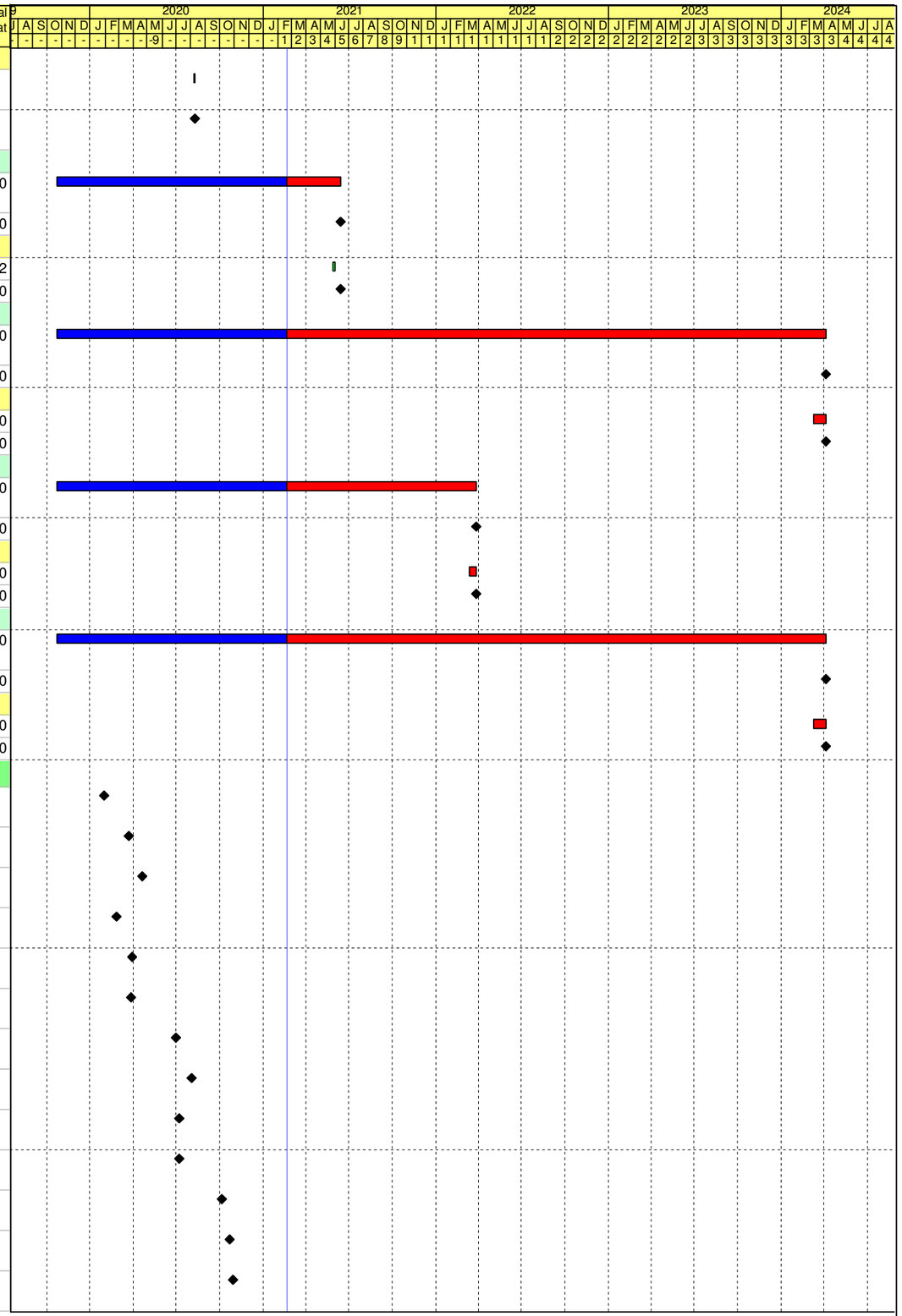
File Name: DE/2018/03 RP R7
Layout: DE1803 RP (Feb 2021) - WBS
Page 1 of 20

Remaining Work
Critical Activity
Milestone
Actual Progress

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
Revised Programme - as at 20 Feb 2021

Date	Revision	Checked	Approved
30-Oct-20	Rev.3	LT	KM
02-Dec-20	Rev.4	LT	KM
30-Dec-20	Rev.5	LT	KM
26-Jan-21	Rev.6	LT	KM
26-Feb-21	Rev.7	LT	KM

Activity ID	Activity Name	Original Duration	Early Start	Early Finish	Late Start	Late Finish	Total Float
	Time Risk Allowance and Planned Completion						
AS003105	Time Risk Allowance for Section 1	1	08-Aug-20 A	08-Aug-20 A	04-Apr-24	04-Apr-24	
AS003130	Planned Completion for Section 1	0		08-Aug-20 A		04-Apr-24	
	Section 2 - Complete All Designs (exclude Sec. 1 & 3)						
AS003200	Contract Duration of Section 2	601	23-Oct-19 A	14-Jun-21	21-Feb-21	14-Jun-21	0
AS003210	Completion date - Section 2 (600 days after starting date)	0		14-Jun-21*		14-Jun-21	0
	Time Risk Allowance and Planned Completion						
AS003220	Time Risk Allowance for Section 2	6	28-May-21	02-Jun-21	09-Jun-21	14-Jun-21	12
AS003230	Planned Completion for Section 2	0		14-Jun-21*		14-Jun-21	0
	Section 3 - Complete Design, Construction & T&C for Sidestream Facilities						
AS003300	Contract Duration of Section 3	1626	23-Oct-19 A	04-Apr-24	21-Feb-21	04-Apr-24	0
AS003310	Completion date - Section 3 (1625 days after starting date)	0		04-Apr-24*		04-Apr-24	0
	Time Risk Allowance and Planned Completion						
AS003320	Time Risk Allowance for Section 3	26	10-Mar-24	04-Apr-24	10-Mar-24	04-Apr-24	0
AS003330	Planned Completion for Section 3	0		04-Apr-24*		04-Apr-24	0
	Section 4 - Complete Construction & T&C for UV System No.1 & EP Station No. 1						
AS003400	Contract Duration of Section 4	886	23-Oct-19 A	26-Mar-22	21-Feb-21	26-Mar-22	0
AS003410	Completion date - Section 4 (885 days after starting date)	0		26-Mar-22*		26-Mar-22	0
	Time Risk Allowance and Planned Completion						
AS003420	Time Risk Allowance for Section 4	14	13-Mar-22	26-Mar-22	13-Mar-22	26-Mar-22	0
AS003430	Planned Completion for Section 4	0		26-Mar-22*		26-Mar-22	0
	Section 5 - Complete all remaining Works (incl. T&C)						
AS003500	Contract Duration of Section 5	1626	23-Oct-19 A	04-Apr-24	21-Feb-21	04-Apr-24	0
AS003510	Completion date - Section 5 (1625 days after starting date)	0		04-Apr-24*		04-Apr-24	0
	Time Risk Allowance and Planned Completion						
AS003520	Time Risk Allowance for Section 5	26	10-Mar-24	04-Apr-24	10-Mar-24	04-Apr-24	0
AS003530	Planned Completion for Section 5	0		04-Apr-24*		04-Apr-24	0
	Compensation Event						
CE000010	CE No.001 - Special Work Arrangement in Ruducing the Risk of the Spread of Novel Coronavirus	0		30-Jan-20 A		04-Apr-24	
CE000020	CE No.002 - The Contractor's Site Accomodation by Modular Integrated Construction (MIC) Method	0		23-Mar-20 A		04-Apr-24	
CE000030	CE No.003 - Flowmeter Relocation & Pipework Rearrangement at Effluent Transfer Pumping Station	0		20-Apr-20 A		04-Apr-24	
CE000040	CE No.004 - Designated Area for the Contractor's Site Accommodation in Works Area WA1	0		26-Feb-20 A		04-Apr-24	
CE000050	CE No.005 - Revised Size of Penstock at UV System No.1 & Effluent Pumping Station No.1 for Ex. Outfall	0		30-Mar-20 A		04-Apr-24	
CE000055	CE No.006 - Additional Duty Point for Effluent Transfer Pumps	0		27-Mar-20 A		04-Apr-24	
CE000060	CE No.007 - Additional Adjustable Weir at UV System No.1 & Effluent Pumping Station No.1	0		30-Jun-20 A		04-Apr-24	
CE000070	CE No.008 - Provision of Additional 2nd Temp. Power Supply for UV System No.1 & Effluent Pumping Station No.1	0		03-Aug-20 A		04-Apr-24	
CE000080	CE No.009 - Employment of Temporary Staff under Anti-Epidemic Fund	0		07-Jul-20 A		04-Apr-24	
CE000090	CE No.010 - Revised Setting Out Plan for Sidestream Treatment Facilities	0		07-Jul-20 A		04-Apr-24	
CE000100	CE No.012 - Provision of Touchscreen Display System for the Project Manager's Office	0		06-Oct-20 A		04-Apr-24	
CE000110	CE No.013 - Feasibility Study for Adopting emMiC & DfMA	0		22-Oct-20 A		04-Apr-24	
CE000120	CE No.014 - Revised FS Water Supply Arrangement for CHP, Guard House, Workshop No.2, SludgeDigester&DistributionChamber	0		28-Oct-20 A		04-Apr-24	

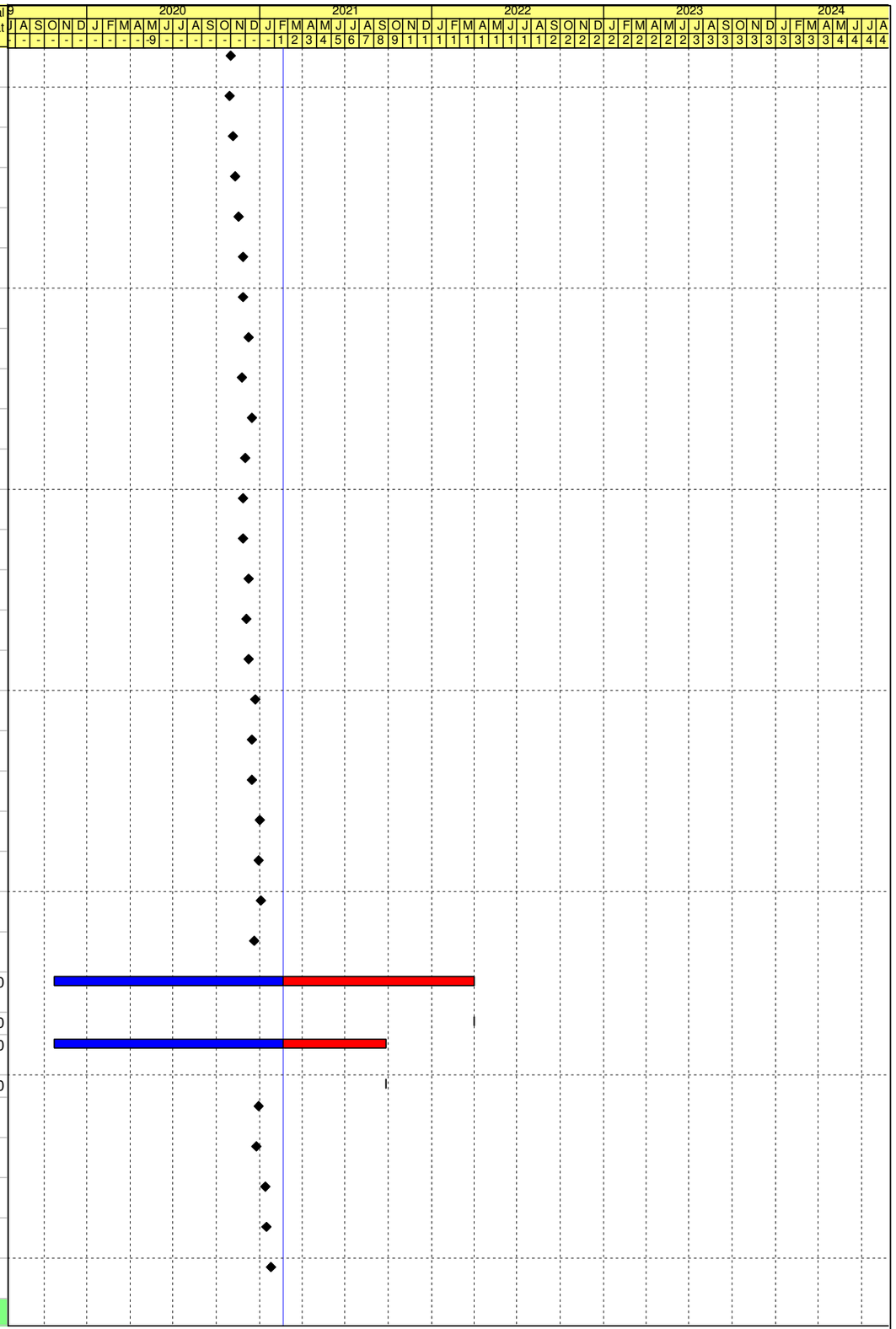


Remaining Work
Critical Activity
Milestone
Actual Progress

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
Revised Programme - as at 20 Feb 2021

Date	Revision	Checked	Approved
30-Oct-20	Rev.3	LT	KM
02-Dec-20	Rev.4	LT	KM
30-Dec-20	Rev.5	LT	KM
26-Jan-21	Rev.6	LT	KM
26-Feb-21	Rev.7	LT	KM

Activity ID	Activity Name	Original Duration	Early Start	Early Finish	Late Start	Late Finish	Total Float
CE000130	CE No.015 - Revised Plumbing Arranagement for Workshop No.2, UV & Effluent No.1, CHP, SPS&FCDF, DOU No.11&12, H2S, SDDC	0		30-Oct-20 A		04-Apr-24	
CE000140	CE No.016 - Elect. Provisions for Addit. 800A ACB w/ CMPD as Standby Supply for MBBR for UV No.2 for Future Expansion	0		28-Oct-20 A		04-Apr-24	
CE000150	CE No.018 - MVAC Layout for Plant Service Water System	0		05-Nov-20 A		04-Apr-24	
CE000160	CE No.020 - Addit. set of 11kV power feeder panel at 11kV SB in CHP for future connection to Zone B in Stage 2	0		09-Nov-20 A		04-Apr-24	
CE000165	NCE-PMI-0201 - Provision of Access Platform for EOT cranes in UV System No.1 & Effluent Pumping Station No.1	0		16-Nov-20 A		04-Apr-24	
CE000170	NCE-PMI-0202 - Revised Plumbing Arrangement for Sludge Dewatering Building	0		26-Nov-20 A		04-Apr-24	
CE000175	NCE-PPMI-0203 - MVAC Layout for SAS Pumping Station	0		25-Nov-20 A		04-Apr-24	
CE000180	NCE-PMI-0204 - CHP - Provisional of Additional ATS for Power Supply for UPS	0		08-Dec-20 A		04-Apr-24	
CE000185	NCE-PPMI-0205 - Fibre Optics Network Connection for SCADA Systems between Zone B & Zone C	0		23-Nov-20 A		04-Apr-24	
CE000190	NCE-PMI-0206 - SDB - Provisional of Additional ATS for Power Supply for UPS	0		15-Dec-20 A		04-Apr-24	
CE000191	NCE-PMI-0207 - TX Rm & Switch Rm - Provision of ATS for Power Supply for UPS	0		01-Dec-20 A		04-Apr-24	
CE000192	NCE-PPMI-0208 - Provision of Drainage service Layout for SAS Pumping Station	0		26-Nov-20 A		04-Apr-24	
CE000193	NCE-PPMI-0209 - Drainage System for Plant Service Water System	0		26-Nov-20 A		04-Apr-24	
CE000194	NCE-PPMI-0210 - Electrical provisions for MVAC & Drainage Systems in SAS Pumping Station	0		08-Dec-20 A		04-Apr-24	
CE000195	NCE-PPMI-0211 - Revised MVAC Layout & Electrical Provisions for MVAC in TX and Switch Rm	0		02-Dec-20 A		04-Apr-24	
CE000196	NCE-PMI-0212 - Provision of Louvre Panel for Outdoor AC Units at Contractor's Site Accomodation	0		07-Dec-20 A		04-Apr-24	
CE000197	NCE-PPMI-0213 - Electrical provisions for MVAC & Drainage System in UV System No.1 & Effluent Pumping Station No.1	0		21-Dec-20 A		04-Apr-24	
CE000200	NCE-PPMI-0214 - Additional Sump Pump & Drain Pipes at UV System No.1 & Effluent Pumping Station	0		14-Dec-20 A		04-Apr-24	
CE000210	NCE-PPMI-0215 - Revised MVAC Layout for UV System No.1 & Effluent Pumping Station No.1	0		14-Dec-20 A		04-Apr-24	
CE000220	NCE-PPMI-0216 - Electrical Provisions for MVAC & drainage Sytems in Plant Service Water System	0		31-Dec-20 A		04-Apr-24	
CE000230	NCE-PMI-0217 - Revised Duty Points for Effluent Transfer Pumps	0		29-Dec-20 A		04-Apr-24	
CE000240	NCE-PPMI-0218 - Scoping Study for Application of Digital Twin & IoT in Zone B & Zone C of SWHEPP	0		04-Jan-21 A		04-Apr-24	
CE000250	NCE-NCE-0219 - Change of Site Access Date to SAS Pumping Station Forming Part of Portion B-2 of the Site	0		19-Dec-20 A		04-Apr-24	
CE000252	NCE-NCE-0219 - Portion B-2a (within 771 to 891 days from starting date)	891	23-Oct-19 A	31-Mar-22	21-Feb-21	31-Mar-22	0
CE000254	NCE-NCE-0219 - Revised Access Date for Portion B-2a	1	31-Mar-22	31-Mar-22*	31-Mar-22	31-Mar-22	0
CE000256	NCE-NCE-0219 - Portion B-2b (within 615 to 705 days from starting date)	705	23-Oct-19 A	26-Sep-21	21-Feb-21	26-Sep-21	0
CE000258	NCE-NCE-0219 - Revised Access Date for Portion B-2b	1	26-Sep-21	26-Sep-21*	26-Sep-21	26-Sep-21	0
CE000260	NCE-PMI-0220 - Supply of Puddle Pipes for Effluent to Shek Sheung River	0		30-Dec-20 A		04-Apr-24	
CE000270	NCE-PPMI-0221 - General Arrangement for Fire Hydrant & Booster Pump Room	0		24-Dec-20 A		04-Apr-24	
CE000280	NCE-PMI-0222 - Revised Water Supply Arrangement (FS Water) to Sludge Dewatering Building	0		12-Jan-21 A		04-Apr-24	
CE000290	NCE-PMI-0223 - Construction of Trial Pits for Sidestream Treatment Facilities	0		15-Jan-21 A		04-Apr-24	
CE000300	NCE-PMI-0224 - Independent Inspection Body (IIB) for the Factory Acceptance Test (FAT) for UV Disinfeciton System	0		25-Jan-21 A		04-Apr-24	
Preliminaries							

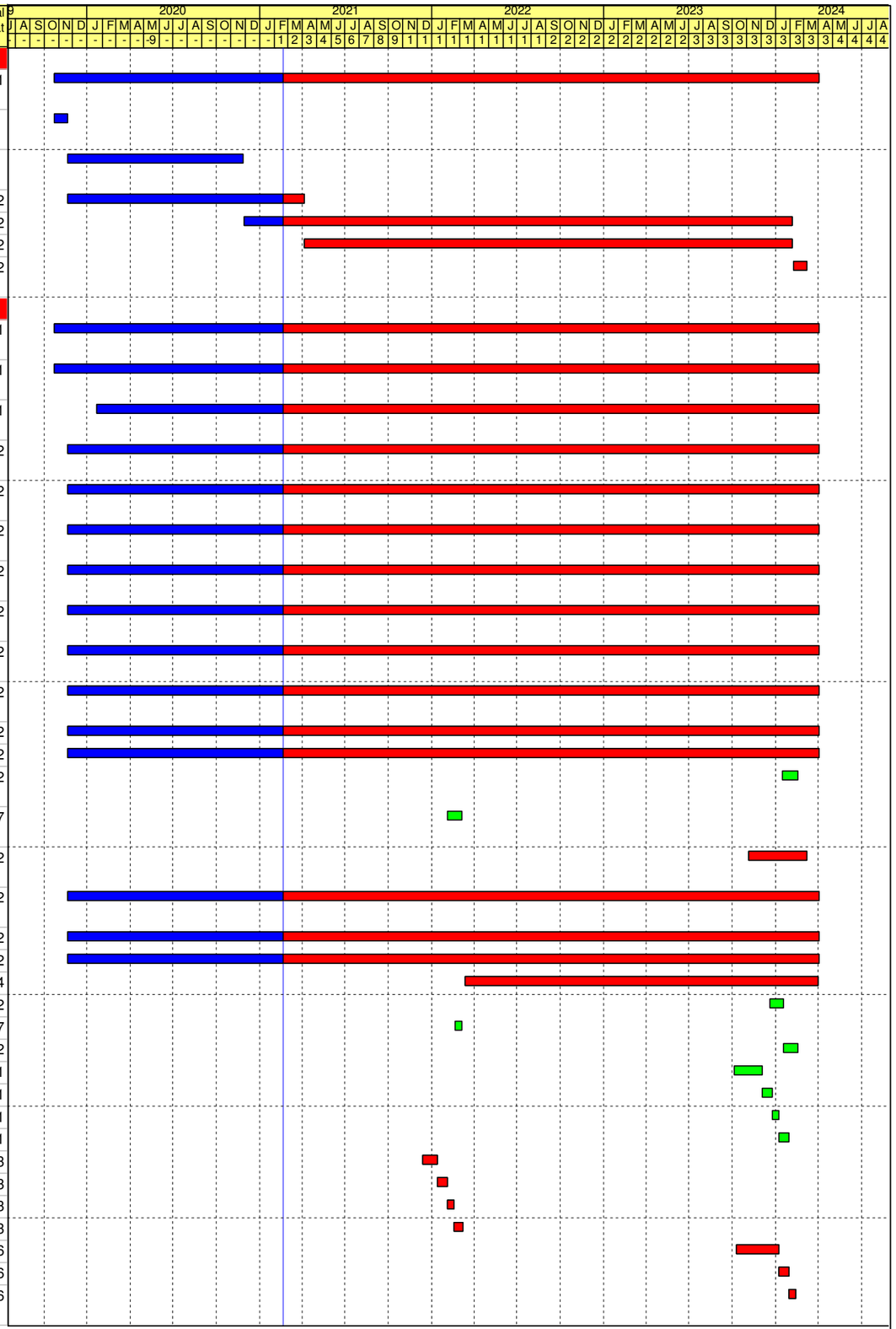


Remaining Work
Critical Activity
Milestone
Actual Progress

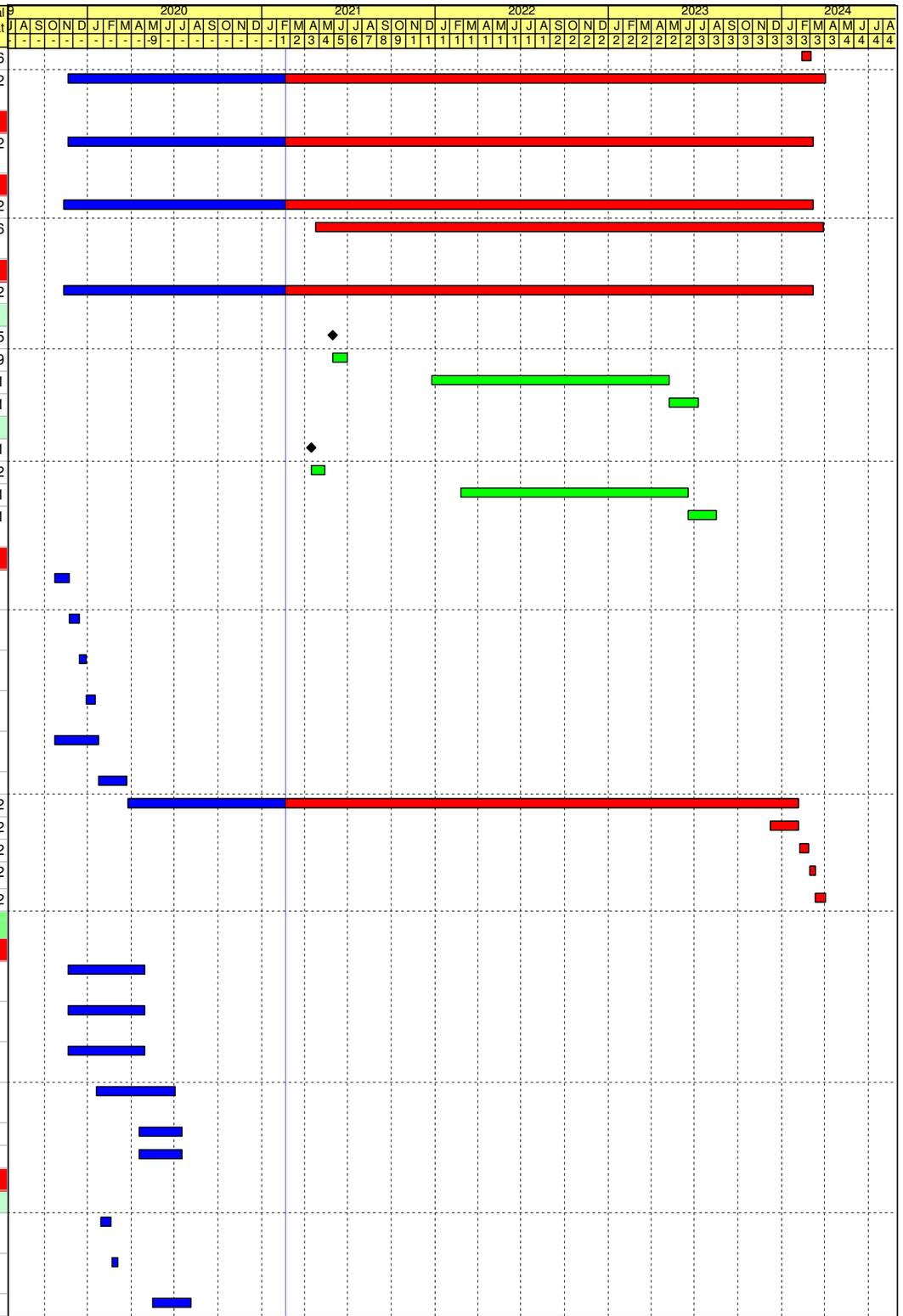
Contract No. DE/2018/03
Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1
Sidestream Treatment Facilities and E&M Works for Sluge Treatment Faciliteis
Revised Programme - as at 20 Feb 2021

Date	Revision	Checked	Approved
30-Oct-20	Rev.3	LT	KM
02-Dec-20	Rev.4	LT	KM
30-Dec-20	Rev.5	LT	KM
26-Jan-21	Rev.6	LT	KM
26-Feb-21	Rev.7	LT	KM

Activity ID	Activity Name	Original Duration	Early Start	Early Finish	Late Start	Late Finish	Total Float
Mobilisation							
AS010100	Provison of Equipment / Facilities for the PM's Office	1625	23-Oct-19 A	03-Apr-24	22-Feb-21	04-Apr-24	1
AS010200	Mobilisation	28	23-Oct-19 A	19-Nov-19 A	21-Feb-21	21-Feb-21	
AS010205a	Design, Procurement & PO & Construction of Contractor's Site Office (Works Area WA1-B)	270	20-Nov-19 A	27-Nov-20 A	23-Feb-21	23-Feb-21	
AS010210	Design, Procurement & PO & Construction of Contractor's Storage Area (Works Area WA3)	503	20-Nov-19 A	05-Apr-21	23-Feb-21	07-Apr-21	2
AS010220	Maintain Contractor's Site Office	1166	28-Nov-20 A	06-Feb-24	23-Feb-21	08-Feb-24	2
AS010230a	Maintain Contractor's Storage Area	1037	06-Apr-21	06-Feb-24	08-Apr-21	08-Feb-24	2
AS010240	Removal of Site Office, Storage & Relevant Facilities	30	07-Feb-24	07-Mar-24	09-Feb-24	09-Mar-24	2
Site Preliminaries							
AS010300	Provision of Insurance, Third Party Insurances & PII	1625	23-Oct-19 A	03-Apr-24	22-Feb-21	04-Apr-24	1
AS010400	Provision of 2 Contract Car for the Use of the PM & Supervisor	1625	23-Oct-19 A	03-Apr-24	22-Feb-21	04-Apr-24	1
AS010420a	Provision of 1 Electric Car for the Use of the PM & Supervisor	1534	22-Jan-20 A	03-Apr-24	22-Feb-21	04-Apr-24	1
AS010600	Provision of Photographs	1596	20-Nov-19 A	02-Apr-24	23-Feb-21	04-Apr-24	2
AS010700	Provision of Environmental Mitigation Measures	1596	20-Nov-19 A	02-Apr-24	23-Feb-21	04-Apr-24	2
AS010800	Provision of Air Pollution Abatment	1596	20-Nov-19 A	02-Apr-24	23-Feb-21	04-Apr-24	2
AS010900	Provision of Noise Pollution Abatment	1596	20-Nov-19 A	02-Apr-24	23-Feb-21	04-Apr-24	2
AS011000	Provision of Wastewater Pollution Abatement	1596	20-Nov-19 A	02-Apr-24	23-Feb-21	04-Apr-24	2
AS011100	Provision of Wastement Management	1596	20-Nov-19 A	02-Apr-24	23-Feb-21	04-Apr-24	2
AS011200	Provision of Monitoring the Use of Ultra Low Sulphur Diesel	1596	20-Nov-19 A	02-Apr-24	23-Feb-21	04-Apr-24	2
AS011300	Provision of Environmental Management	1596	20-Nov-19 A	02-Apr-24	23-Feb-21	04-Apr-24	2
AS011400	Provision of Site Management Plan for Trip Ticket System	1596	20-Nov-19 A	02-Apr-24	23-Feb-21	04-Apr-24	2
AS011500	Provision of As-constructed Drawings for Section 3	34	14-Jan-24	16-Feb-24	05-Feb-24	09-Mar-24	22
AS011520a	Provision of As-constructed Drawings for Section 4	31	03-Feb-22	06-Mar-22	10-Feb-22	12-Mar-22	7
AS011540a	Provision of As-constructed Drawings for Section 5	124	05-Nov-23	08-Mar-24	07-Nov-23	09-Mar-24	2
AS011600	Provision of Systematic Risk Management	1596	20-Nov-19 A	02-Apr-24	23-Feb-21	04-Apr-24	2
AS011700	Provision of Site Liaison Group & Community Liaison Group	1596	20-Nov-19 A	02-Apr-24	23-Feb-21	04-Apr-24	2
AS011800	Provision of 24-Hour Telephone Line	1596	20-Nov-19 A	02-Apr-24	23-Feb-21	04-Apr-24	2
AS012000	Provision of Upkeeping and Protection of Completed Works	750	13-Mar-22	31-Mar-22	17-Mar-22	04-Apr-24	4
AS012100	Provision of Training for Employer's Staff for Section 3	30	19-Dec-23	17-Jan-24	09-Feb-24	09-Mar-24	52
AS012120a	Provision of Training for Employer's Staff for Section 4	15	19-Feb-22	06-Mar-22	26-Feb-22	12-Mar-22	7
AS012140a	Provision of Training for Employer's Staff for Section 5	30	18-Jan-24	16-Feb-24	09-Feb-24	09-Mar-24	22
AS012300	Prepare & Submit O&M Manual for Section 3	60	05-Oct-23	03-Dec-23	15-Nov-23	13-Jan-24	41
AS012302a	PM Reivew & Comment O&M Manual for Section 3	21	04-Dec-23	24-Dec-23	14-Jan-24	03-Feb-24	41
AS012304a	Revise & Re-submit O&M Manual for Section 3	14	25-Dec-23	07-Jan-24	04-Feb-24	17-Feb-24	41
AS012306a	PM Reivew & Approval of O&M Manual for Section 3	21	08-Jan-24	28-Jan-24	18-Feb-24	09-Mar-24	41
AS012320a	Prepare & Submit O&M Manual for Section 4	30	14-Dec-21	13-Jan-22	17-Dec-21	15-Jan-22	3
AS012322a	PM Reivew & Comment O&M Manual for Section 4	21	13-Jan-22	02-Feb-22	16-Jan-22	05-Feb-22	3
AS012324a	Revise & Re-submit O&M Manual for Section 4	14	03-Feb-22	16-Feb-22	06-Feb-22	19-Feb-22	3
AS012326a	PM Reivew & Approval of O&M Manual for Section 4	21	17-Feb-22	09-Mar-22	20-Feb-22	12-Mar-22	3
AS012340a	Prepare & Submit O&M Manual for Section 5	90	10-Oct-23	07-Jan-24	16-Oct-23	13-Jan-24	6
AS012342a	PM Reivew & Comment O&M Manual for Section 5	21	08-Jan-24	28-Jan-24	14-Jan-24	03-Feb-24	6
AS012344a	Revise & Re-submit O&M Manual for Section 5	14	29-Jan-24	11-Feb-24	04-Feb-24	17-Feb-24	6



Activity ID	Activity Name	Original Duration	Early Start	Early Finish	Late Start	Late Finish	Total Float
AS012346a	PM Reivew & Approval of O&M Manual for Section 5	21	12-Feb-24	03-Mar-24	18-Feb-24	09-Mar-24	6
AS012400	Provision of ICE for Certification of the Design, Cal, Dwgs, Plans and all relevant Doc and Process Commissioning	1596	20-Nov-19 A	02-Apr-24	23-Feb-21	04-Apr-24	2
Site Upkeeping							
AS013100	General Site Upkeeping of the Site	1570	20-Nov-19 A	07-Mar-24	23-Feb-21	09-Mar-24	2
Safety and Environmental Management							
AS013200	Construction Health and Safety Plan	1580	10-Nov-19 A	07-Mar-24	23-Feb-21	09-Mar-24	2
AS013300	Site Traffic Safety Management Plan	1070	25-Apr-21	29-Mar-24	01-May-21	04-Apr-24	6
Compliance with BEAM Requirements							
AS013400	BEAM Plus	1580	10-Nov-19 A	07-Mar-24	23-Feb-21	09-Mar-24	2
Sludge Dewatering Building							
AS013410f	Material Submission & Design Calculation Approved	0		30-May-21		14-Jun-21	15
AS013420f	Issued approved submission & Calculation to Cinotech	30	31-May-21	29-Jun-21	07-Sep-21	06-Oct-21	99
AS013430f	Monthly Review & Submission	500	26-Dec-21	09-May-23	23-Sep-22	04-Feb-24	271
AS013440f	Submission & Approval of Test Record	60	10-May-23	08-Jul-23	05-Feb-24	04-Apr-24	271
CHP Building							
AS013450f	Material Submission & Design Calculation Approved	0		14-Apr-21		14-Jun-21	61
AS013460f	Issued approved submission & Calculation to Cinotech	30	15-Apr-21	14-May-21	03-Nov-21	02-Dec-21	202
AS013470f	Monthly Review & Submission	480	24-Feb-22	18-Jun-23	13-Oct-22	04-Feb-24	231
AS013480f	Submission & Approval of Test Record	60	19-Jun-23	17-Aug-23	05-Feb-24	04-Apr-24	231
BIM							
AS011820a	Prepare & Submit Construction Stage BIM Execution Plan	30	24-Oct-19 A	22-Nov-19 A	23-Feb-21	23-Feb-21	
AS011830a	PM Reivew & Comment Construction Stage BIM Execution Plan	21	23-Nov-19 A	13-Dec-19 A	23-Feb-21	23-Feb-21	
AS011840a	Revise & Re-submit Construction Stage BIM Execution Plan	14	14-Dec-19 A	27-Dec-19 A	23-Feb-21	23-Feb-21	
AS011850a	PM Reivew & Approval of Construction Stage BIM Execution Plan	21	28-Dec-19 A	17-Jan-20 A	23-Feb-21	23-Feb-21	
AS011880b	Contractor Review & Study Design Stage BIM	92	24-Oct-19 A	23-Jan-20 A	23-Feb-21	23-Feb-21	
AS011900	Contractor Develop 1st Construction Stage BIM	60	24-Jan-20 A	23-Mar-20 A	23-Feb-21	23-Feb-21	
AS011920a	Review & Update BIM Execution Plan & BIM Model	1415	24-Mar-20 A	06-Feb-24	23-Feb-21	08-Feb-24	2
AS011960	Prepare & Submit the Fully Coordinated BIM	60	09-Dec-23	06-Feb-24	11-Dec-23	08-Feb-24	2
AS011961	PM Reivew & Comment Fully Coordinated BIM	21	07-Feb-24	27-Feb-24	09-Feb-24	29-Feb-24	2
AS011962	Revise & Re-submit Fully Coordinated BIM	14	28-Feb-24	12-Mar-24	01-Mar-24	14-Mar-24	2
AS011963	PM Reivew & Approval of Fully Coordinated BIM	21	13-Mar-24	02-Apr-24	15-Mar-24	04-Apr-24	2
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	21-Nov-19 A	28-Apr-20 A	21-Feb-21	21-Feb-21	
AS103120	Procurement & PO for Lift-up Pumps (S11)	150	21-Nov-19 A	28-Apr-20 A	21-Feb-21	21-Feb-21	
AS103140	Procurement & PO for Transfer Pumps (S13)	150	21-Nov-19 A	28-Apr-20 A	21-Feb-21	21-Feb-21	
AS103180	Procurement & PO for EOT Cranes (2T & 5T) (S19)	150	19-Jan-20 A	03-Jul-20 A	21-Feb-21	21-Feb-21	
AS103200	Procurement & PO for Stoplogs (S21)	90	18-Apr-20 A	17-Jul-20 A	23-May-21	23-May-21	
AS103220	Procurement & PO for Penstocks (S21)	90	18-Apr-20 A	17-Jul-20 A	20-Apr-21	20-Apr-21	
Design & Submission							
General Arrangement Drawings							
AS101100	Prepare & Submit General Arrangement Drawings	90	27-Jan-20 A	19-Feb-20 A	21-Feb-21	21-Feb-21	
AS101110	Review & Comment on General Arrangement Drawings by PM	21	20-Feb-20 A	04-Mar-20 A	04-Apr-24	04-Apr-24	
AS101120	Revise & Re-submit General Arrangement Drawings	14	16-May-20 A	05-Aug-20 A	04-Apr-24	04-Apr-24	

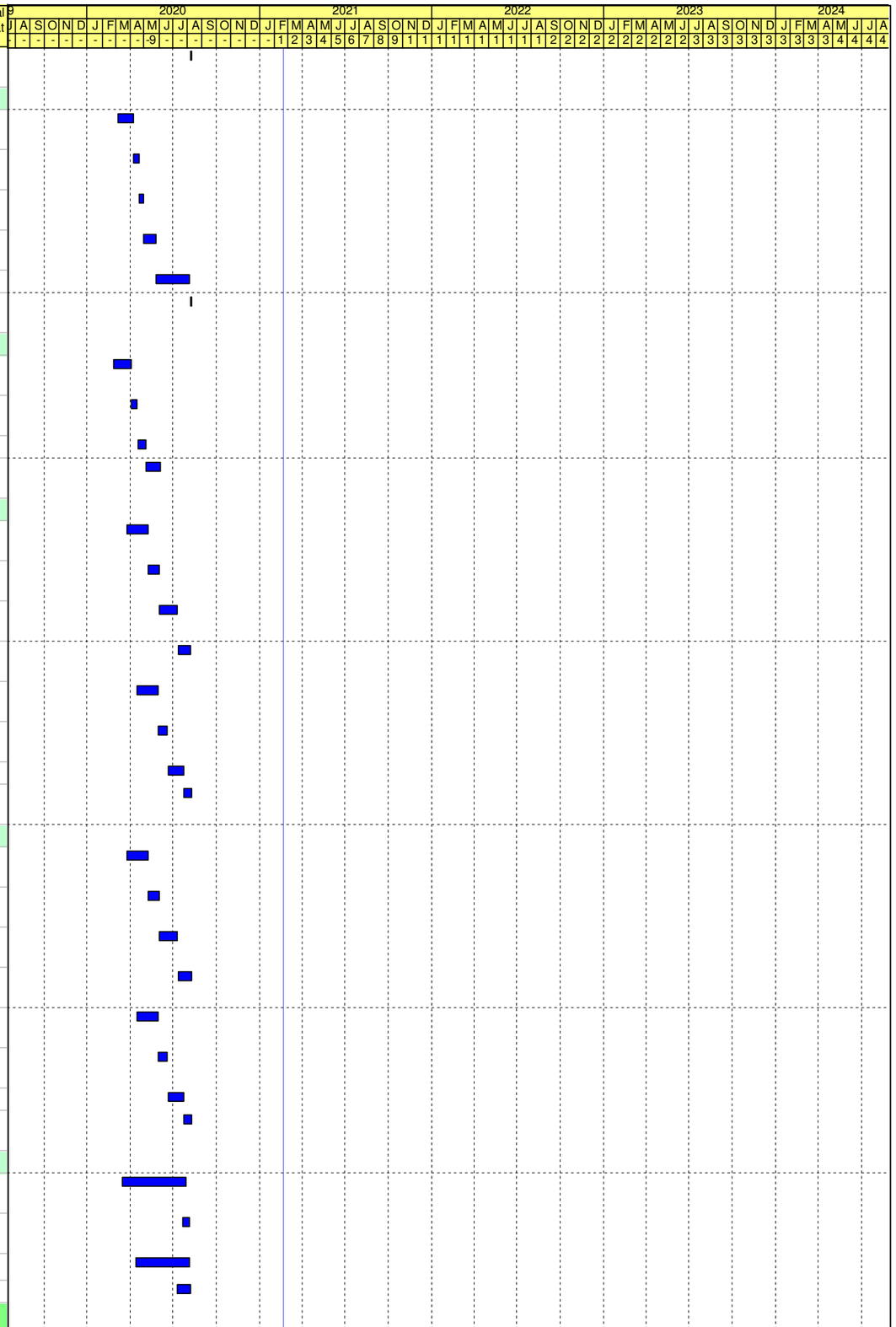


Remaining Work
Critical Activity
Milestone
Actual Progress

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
Revised Programme - as at 20 Feb 2021

Date	Revision	Checked	Approved
30-Oct-20	Rev.3	LT	KM
02-Dec-20	Rev.4	LT	KM
30-Dec-20	Rev.5	LT	KM
26-Jan-21	Rev.6	LT	KM
26-Feb-21	Rev.7	LT	KM

Activity ID	Activity Name	Original Duration	Early Start	Early Finish	Late Start	Late Finish	Total Float
AS101130	Review & Accept of General Arrangement Drawings by PM	5	06-Aug-20 A	08-Aug-20 A	04-Apr-24	04-Apr-24	
Civil & Dimensional / Tolerance Requirement Drawings							
AS102100	Prepare & Submit Civil Requirement Drawings	60	07-Mar-20 A	08-Apr-20 A	15-Apr-21	15-Apr-21	
AS102110	Review & Comment on Civil Requirement Drawings by PM	21	09-Apr-20 A	20-Apr-20 A	04-Apr-24	04-Apr-24	
AS102120	Revise & Re-submit Civil Requirement Drawings	14	21-Apr-20 A	29-Apr-20 A	04-Apr-24	04-Apr-24	
AS102130	Review & Comment of Civil Requirement Drawings by PM	21	30-Apr-20 A	25-May-20 A	04-Apr-24	04-Apr-24	
AS512140	Revise & Re-submit Civil Requirement Drawings	28	26-May-20 A	05-Aug-20 A	04-Apr-24	04-Apr-24	
AS512150	Review & Accept of Civil Requirement Drawings by PM	5	06-Aug-20 A	08-Aug-20 A	04-Apr-24	04-Apr-24	
Electrical Schematic Drawings							
AS102150	Prepare & Submit Elec. Schematic Drawings	60	25-Feb-20 A	03-Apr-20 A	21-Feb-21	21-Feb-21	
AS102160	Review & Comment on Elec. Schematic Drawings by PM	21	04-Apr-20 A	16-Apr-20 A	25-Apr-21	25-Apr-21	
AS102170	Revise & Re-submit Elec. Schematic Drawings	14	17-Apr-20 A	04-May-20 A	25-Apr-21	25-Apr-21	
AS102180	Review & Accept of Elec. Schematic Drawings by PM	21	05-May-20 A	03-Jun-20 A	25-Apr-21	25-Apr-21	
UV System No. 1							
AS102200	Prepare & Submit Wiring Dwgs, Cable Schedule & Design Cal.	60	24-Mar-20 A	08-May-20 A	15-Apr-21	15-Apr-21	
AS102210	Review & Comment on Wiring Dwgs, Cable Schedule & Design Cal.	21	09-May-20 A	01-Jun-20 A	04-Apr-24	04-Apr-24	
AS102220	Revise & Re-submit Wiring Dwgs, Cable Schedule & Design Cal.	14	02-Jun-20 A	10-Jul-20 A	04-Apr-24	04-Apr-24	
AS102230	Review & Accept of Wiring Dwgs, Cable Schedule & Design Cal.	21	11-Jul-20 A	06-Aug-20 A	04-Apr-24	04-Apr-24	
AS102300	Prepare & Submit the Schedule, Design Cal. & Fixing Details of Equipment	60	15-Apr-20 A	29-May-20 A	15-Apr-21	15-Apr-21	
AS102310	Review & Comment on the Schedule, Design Cal. & Fixing Details of Equipment	21	30-May-20 A	19-Jun-20 A	15-Apr-21	15-Apr-21	
AS102320	Revise & Re-submit the Schedule, Design Cal. & Fixing Details of Equipment	14	20-Jun-20 A	23-Jul-20 A	15-Apr-21	15-Apr-21	
AS102330	Review & Accept of the Schedule, Design Cal. & Fixing Details of Equipment	14	24-Jul-20 A	08-Aug-20 A	15-Apr-21	15-Apr-21	
Effluent Pumping Station No. 1							
AS112200	Prepare & Submit Wiring Dwgs, Cable Schedule & Design Cal.	60	24-Mar-20 A	08-May-20 A	21-Feb-21	21-Feb-21	
AS112210	Review & Comment on Wiring Dwgs, Cable Schedule & Design Cal.	21	09-May-20 A	01-Jun-20 A	04-Apr-24	04-Apr-24	
AS112220	Revise & Re-submit Wiring Dwgs, Cable Schedule & Design Cal.	14	02-Jun-20 A	10-Jul-20 A	04-Apr-24	04-Apr-24	
AS112230	Review & Accept of Wiring Dwgs, Cable Schedule & Design Cal.	21	11-Jul-20 A	08-Aug-20 A	04-Apr-24	04-Apr-24	
AS112300	Prepare & Submit the Schedule, Design Cal. & Fixing Details of Equipment	60	15-Apr-20 A	29-May-20 A	21-Feb-21	21-Feb-21	
AS112310	Review & Comment on the Schedule, Design Cal. & Fixing Details of Equipment	21	30-May-20 A	19-Jun-20 A	21-Feb-21	21-Feb-21	
AS112320	Revise & Re-submit the Schedule, Design Cal. & Fixing Details of Equipment	14	20-Jun-20 A	23-Jul-20 A	21-Feb-21	21-Feb-21	
AS112330	Review & Accept of the Schedule, Design Cal. & Fixing Details of Equipment	14	24-Jul-20 A	08-Aug-20 A	21-Feb-21	21-Feb-21	
Building Services							
AS113100	Prepare & Submit BS Works Design & Dwgs UV System No.1 & Effluent Pumping Station No.1	90	15-Mar-20 A	27-Jul-20 A	28-Apr-21	28-Apr-21	
AS113160c	Review & Accept of BS Works Design & Dwgs UV System No.1 & Effluent Pumping Station No.1	8	21-Jul-20 A	05-Aug-20 A	21-Sep-21	21-Sep-21	
AS113200	Prepare & Submit FS Works Design & Dwgs UV System No.1 & Effluent Pumping Station N	60	14-Apr-20 A	05-Aug-20 A	28-Apr-21	28-Apr-21	
AS113260c	Review & Accept of FS Works Design & Dwgs UV System No.1 & Effluent Pumping Station I	8	09-Jul-20 A	06-Aug-20 A	28-Apr-21	28-Apr-21	
Section 2 - Complete All Designs (exclude Sec. 1 & 3)							

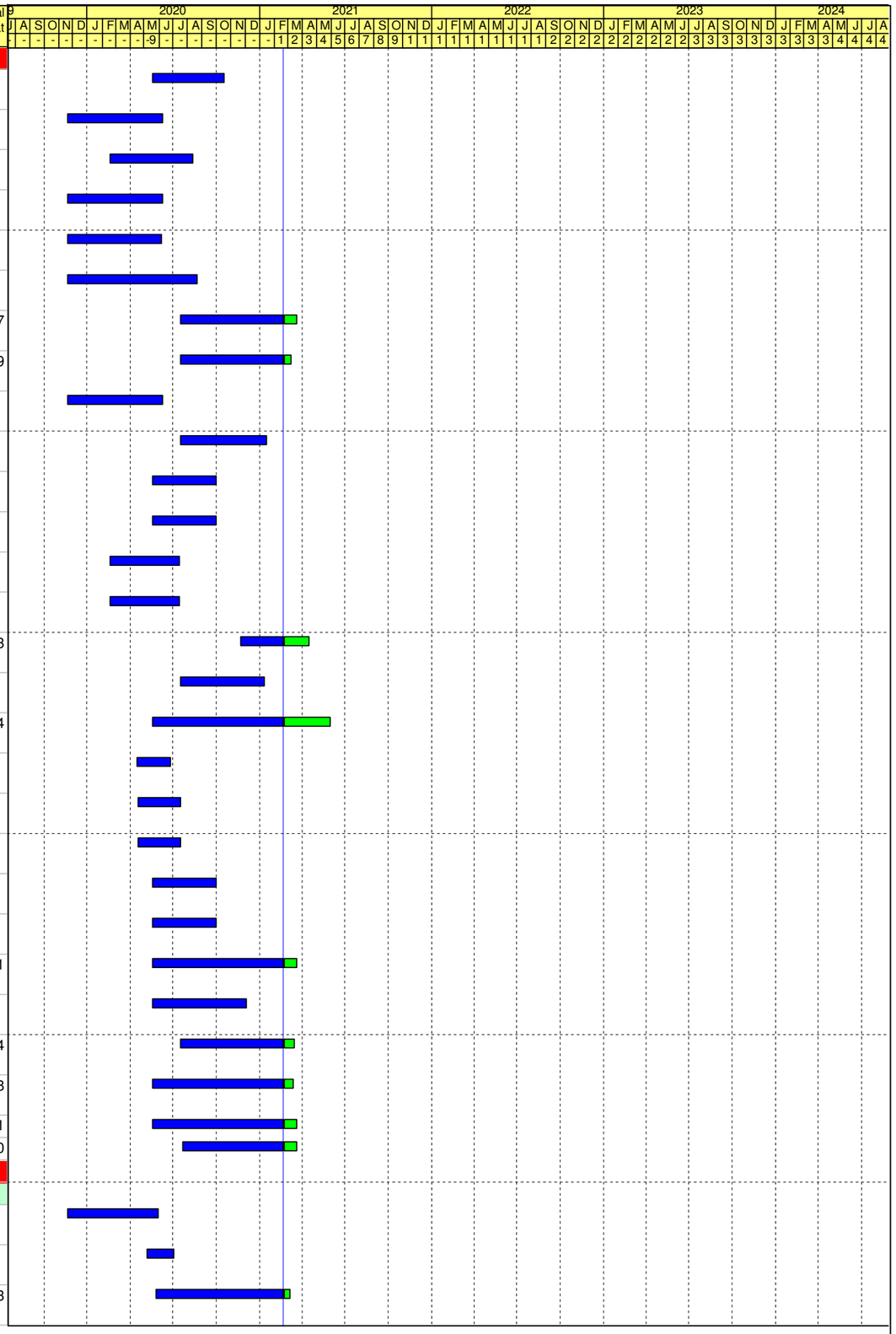


Remaining Work
Critical Activity
Milestone
Actual Progress

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
Revised Programme - as at 20 Feb 2021

Date	Revision	Checked	Approved
30-Oct-20	Rev.3	LT	KM
02-Dec-20	Rev.4	LT	KM
30-Dec-20	Rev.5	LT	KM
26-Jan-21	Rev.6	LT	KM
26-Feb-21	Rev.7	LT	KM

Activity ID	Activity Name	Original Duration	Early Start	Early Finish	Late Start	Late Finish	Total Float
Major Plant & Materials Procurement							
AS023100	Procurement & PO for Sludge Screening System (S2)	150	18-May-20 A	16-Oct-20 A	10-Mar-21	10-Mar-21	
AS023120	Procurement & PO for Sludge Thickening System (S3)	180	20-Nov-19 A	08-Jun-20 A	05-Apr-21	05-Apr-21	
AS023140	Procurement & PO for Sludge Digestion System (S5)	150	18-Feb-20 A	12-Aug-20 A	07-Mar-21	07-Mar-21	
AS023160	Procurement & PO for Sludge Dewatering System (S6)	180	20-Nov-19 A	08-Jun-20 A	05-Apr-21	05-Apr-21	
AS023180	Procurement & PO for THP System (S4)	180	20-Nov-19 A	05-Jun-20 A	07-Mar-21	07-Mar-21	
AS023190a	Procurement & PO for Biogas Holding Tanks(S7)	180	20-Nov-19 A	20-Aug-20 A	10-Mar-21	10-Mar-21	
AS023200	Procurement & PO for Biogas Booster and Transfer Pumps (S7)	183	17-Jul-20 A	19-Mar-21	10-Mar-21	05-Apr-21	17
AS023210	Procurement & PO for H2S Removal System (S7)	183	17-Jul-20 A	07-Mar-21	22-Mar-21	05-Apr-21	29
AS023220	Procurement & PO for CHP System (S8)	180	20-Nov-19 A	08-Jun-20 A	01-Apr-21	01-Apr-21	
AS023240	Procurement & PO for Waste Gas Burning System (S9)	150	17-Jul-20 A	15-Jan-21 A	09-Jun-21	09-Jun-21	
AS023260	Procurement & PO for Plant Service Water System (S12)	150	18-May-20 A	30-Sep-20 A	05-Apr-21	05-Apr-21	
AS023280	Procurement & PO for SAS Pumping System (S14)	150	18-May-20 A	30-Sep-20 A	05-Apr-21	05-Apr-21	
AS023300	Procurement & PO for Transfomers (S17)	150	18-Feb-20 A	13-Jul-20 A	15-Apr-21	15-Apr-21	
AS023320	Procurement & PO for 11 kV Switchboard (S17)	150	18-Feb-20 A	13-Jul-20 A	15-Apr-21	15-Apr-21	
AS023340	Procurement & PO for 380V Switchboard (S17)	120	21-Nov-20 A	16-Apr-21	15-Apr-21	08-Jun-21	53
AS023380	Procurement & PO for Control & Monitoring System (S18)	183	17-Jul-20 A	11-Jan-21 A	09-Jun-21	09-Jun-21	
AS023400	Procurement & PO for Lifting Appliances (S19)	231	18-May-20 A	31-May-21	07-Mar-21	14-Jun-21	14
AS023420	Procurement & PO for DO System (S21)	150	15-Apr-20 A	24-Jun-20 A	20-Mar-21	20-Mar-21	
AS023440	Procurement & PO for Stoplog (S21)	90	18-Apr-20 A	17-Jul-20 A	09-Jun-21	09-Jun-21	
AS023460	Procurement & PO for Penstock (S21)	90	18-Apr-20 A	17-Jul-20 A	09-Jun-21	09-Jun-21	
AS023480	Procurement & PO for Sewage Pump (S21)	120	18-May-20 A	30-Sep-20 A	01-Apr-21	01-Apr-21	
AS023500	Procurement & PO for Process Water Pump (S21)	120	18-May-20 A	30-Sep-20 A	01-May-21	01-May-21	
AS023520	Procurement & PO for External Sludge Transfer Pump (S21)	227	18-May-20 A	19-Mar-21	13-May-21	08-Jun-21	81
AS023540	Procurement & PO for THP Cooling Pump (S21)	150	18-May-20 A	04-Dec-20 A	08-Jun-21	08-Jun-21	
AS023560	Procurement & PO for Ferric Chloride Storage Tank (S21)	181	17-Jul-20 A	16-Mar-21	16-May-21	08-Jun-21	84
AS023580	Procurement & PO for Ferric Chloride Dosing Pump (S21)	237	18-May-20 A	12-Mar-21	20-May-21	08-Jun-21	88
AS023600	Procurement & PO for Temporary Primary Sludge Pump (S21)	231	18-May-20 A	19-Mar-21	13-May-21	08-Jun-21	81
AS023620b	Procurement & PO for Genset	180	22-Jul-20 A	20-Mar-21	12-May-21	08-Jun-21	80
Design & Submission							
General Arrangement Drawings							
AS020100	Prepare & Submit General Arrangement Drawings (from formation level up to +8mPD)	180	20-Nov-19 A	29-May-20 A	25-Mar-21	25-Mar-21	
AS020110	Review & Comment on General Arrangement Drawings by PM (from formation level up to +8mPD)	21	07-May-20 A	02-Jul-20 A	05-May-21	05-May-21	
AS020120	Revise & Re-submit General Arrangement Drawings (from formation level up to +8mPD)	223	26-May-20 A	06-Mar-21	05-May-21	18-May-21	73

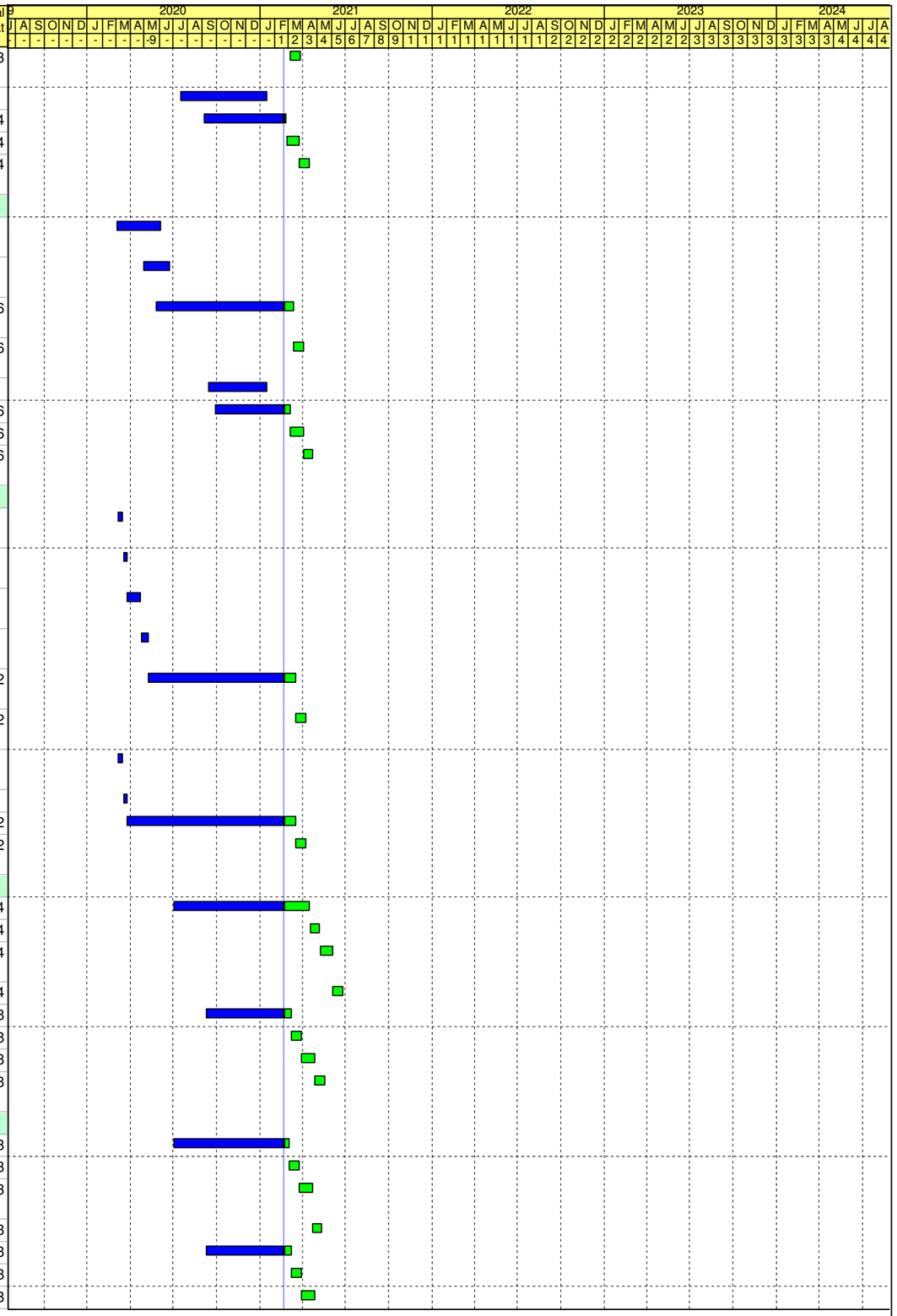


Remaining Work
Critical Activity
Milestone
Actual Progress

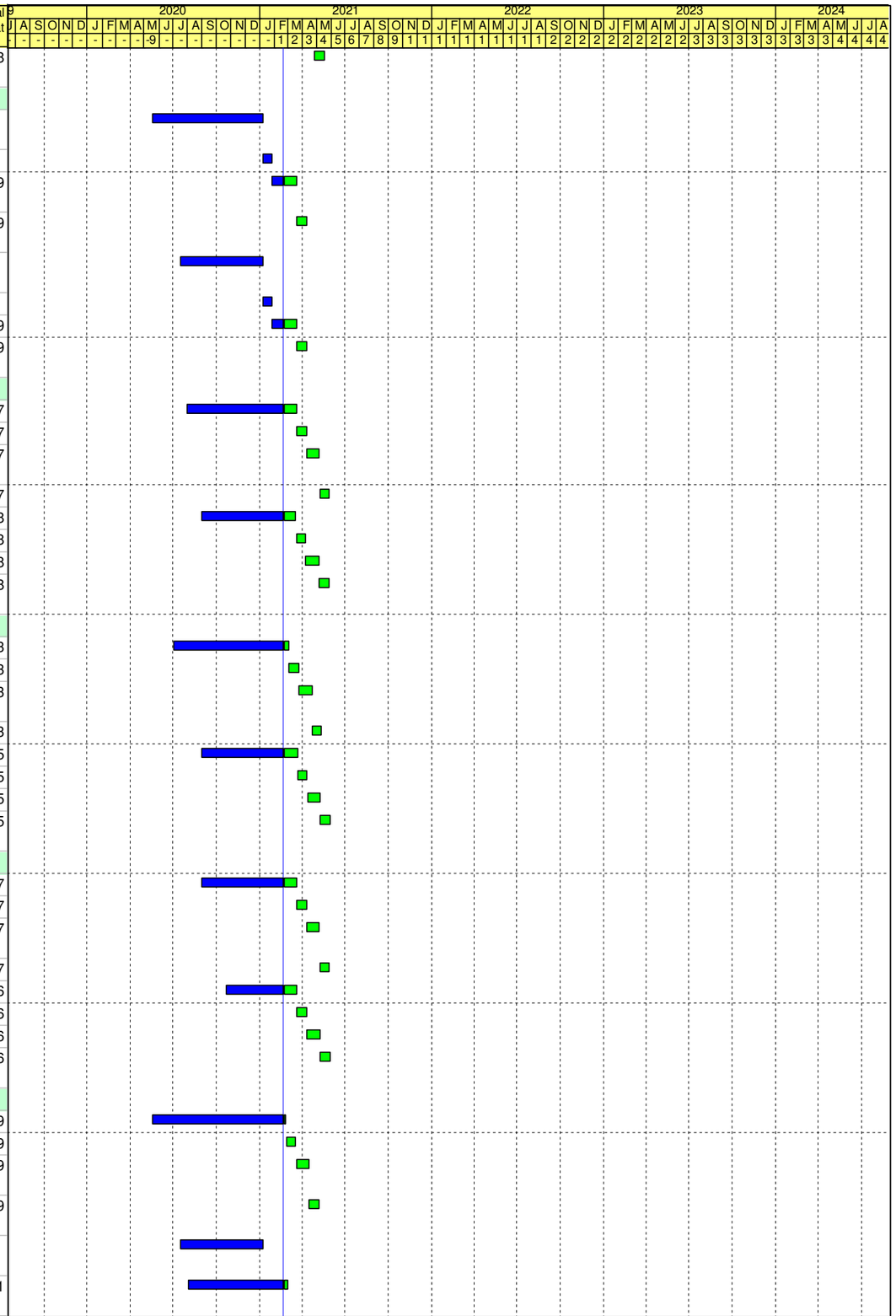
Contract No. DE/2018/03
Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1
Sidestream Treatment Facilities and E&M Works for Sluge Treatment Faciliteis
Revised Programme - as at 20 Feb 2021

Date	Revision	Checked	Approved
30-Oct-20	Rev.3	LT	KM
02-Dec-20	Rev.4	LT	KM
30-Dec-20	Rev.5	LT	KM
26-Jan-21	Rev.6	LT	KM
26-Feb-21	Rev.7	LT	KM

Activity ID	Activity Name	Original Duration	Early Start	Early Finish	Late Start	Late Finish	Total Float
AS020130	Review & Accept of General Arrangement Drawings by PM (from formation level up to +8mPD)	21	07-Mar-21	27-Mar-21	19-May-21	08-Jun-21	73
AS020140a	Prepare & Submit General Arrangement Drawings (remaining)	177	17-Jul-20 A	15-Jan-21 A	08-Apr-21	08-Apr-21	
AS020150a	Review & Comment on General Arrangement Drawings by PM (remaining)	21	05-Sep-20 A	25-Feb-21	16-Apr-21	20-Apr-21	54
AS020160a	Revise & Re-submit General Arrangement Drawings (remaining)	28	26-Feb-21	25-Mar-21	21-Apr-21	18-May-21	54
AS020170a	Review & Accept of General Arrangement Drawings by PM (remaining)	21	26-Mar-21	15-Apr-21	19-May-21	08-Jun-21	54
Civil & Dimensional / Tolerance Requirement Drawings							
AS020200	Prepare & Submit Civil Requirement Drawings (from formation level up to +8mPD) -KD2A	90	04-Mar-20 A	04-Jun-20 A	25-Mar-21	25-Mar-21	
AS020210	Review & Comment on Civil Requirement Drawings by PM (from formation level up to +8mPD)	21	30-Apr-20 A	23-Jun-20 A	28-Apr-21	28-Apr-21	
AS020220	Revise & Re-submit Civil Requirement Drawings (from formation level up to +8mPD)	230	26-May-20 A	13-Mar-21	28-Apr-21	18-May-21	66
AS020230	Review & Accept of Civil Requirement Drawings by PM (from formation level up to +8mPD)	21	14-Mar-21	03-Apr-21	19-May-21	08-Jun-21	66
AS020300	Prepare & Submit Civil Requirement Drawings (remaining) -KD2B	120	15-Sep-20 A	15-Jan-21 A	08-Apr-21	08-Apr-21	
AS020310	Review & Comment on Civil Requirement Drawings by PM (remaining)	21	28-Sep-20 A	05-Mar-21	08-Apr-21	20-Apr-21	46
AS020320	Revise & Re-submit Civil Requirement Drawings (remaining)	28	06-Mar-21	02-Apr-21	21-Apr-21	18-May-21	46
AS020330	Review & Accept of Civil Requirement Drawings by PM (remaining)	21	03-Apr-21	23-Apr-21	19-May-21	08-Jun-21	46
Electrical Schematic Drawings							
AS021200	Prepare & Elec. Schematic Drawings (from formation level up to +8mPD) -KD2A	90	05-Mar-20 A	16-Mar-20 A	25-Mar-21	25-Mar-21	
AS021210	Review & Comment on Elec. Schematic Drawings by PM (from formation level up to +8mPD)	21	17-Mar-20 A	24-Mar-20 A	15-Apr-21	15-Apr-21	
AS021220	Revise & Re-submit Elec. Schematic Drawings (from formation level up to +8mPD)	28	25-Mar-20 A	23-Apr-20 A	15-Apr-21	15-Apr-21	
AS021230	Review & Comment of Elec. Schematic Drawings by PM (from formation level up to +8mPD)	21	24-Apr-20 A	08-May-20 A	15-Apr-21	15-Apr-21	
AS021240	Revise & Re-submit Elec. Schematic Drawings (from formation level up to +8mPD)	251	09-May-20 A	17-Mar-21	24-Apr-21	18-May-21	62
AS021250	Review & Accept of Elec. Schematic Drawings by PM (from formation level up to +8mPD)	21	18-Mar-21	07-Apr-21	19-May-21	08-Jun-21	62
AS021300	Prepare & Submit Elec. Schematic Drawings (remaining) -KD2B	120	05-Mar-20 A	16-Mar-20 A	15-Apr-21	15-Apr-21	
AS021310	Review & Comment on Elec. Schematic Drawings by PM (remaining)	21	17-Mar-20 A	24-Mar-20 A	24-Apr-21	24-Apr-21	
AS021320	Revise & Re-submit Elec. Schematic Drawings (remaining)	296	25-Mar-20 A	17-Mar-21	24-Apr-21	18-May-21	62
AS021330	Review & Accept of Elec. Schematic Drawings by PM (remaining)	21	18-Mar-21	07-Apr-21	19-May-21	08-Jun-21	62
Sludge Screening (SSc)							
AS022200	Prepare & Submit Wiring Dwgs, Cable Schedule & Design Cal.	150	02-Jul-20 A	16-Apr-21	06-May-21	29-Jun-21	74
AS022210	Review & Comment on Wiring Dwgs, Cable Schedule & Design Cal.	21	17-Apr-21	07-May-21	30-Jun-21	20-Jul-21	74
AS022220	Revise & Re-submit Wiring Dwgs, Cable Schedule & Design Cal.	28	08-May-21	04-Jun-21	21-Jul-21	17-Aug-21	74
AS022230	Review & Accept of Wiring Dwgs, Cable Schedule & Design Cal.	21	05-Jun-21	25-Jun-21	18-Aug-21	07-Sep-21	74
AS022300	Prepare & Submit the Schedule, Design Cal. & Fixing Details of Equipment	180	10-Sep-20 A	08-Mar-21	21-Mar-21	05-Apr-21	28
AS022310	Review & Comment on the Schedule, Design Cal. & Fixing Details of Equipment	21	09-Mar-21	29-Mar-21	06-Apr-21	26-Apr-21	28
AS022320	Revise & Re-submit the Schedule, Design Cal. & Fixing Details of Equipment	28	30-Mar-21	26-Apr-21	27-Apr-21	24-May-21	28
AS022330	Review & Accept of the Schedule, Design Cal. & Fixing Details of Equipment	21	27-Apr-21	17-May-21	25-May-21	14-Jun-21	28
Sludge Thickening (STh)							
AS032200	Prepare & Submit Wiring Dwgs, Cable Schedule & Design Cal.	180	02-Jul-20 A	03-Mar-21	26-Mar-21	05-Apr-21	33
AS032210	Review & Comment on Wiring Dwgs, Cable Schedule & Design Cal.	21	04-Mar-21	24-Mar-21	06-Apr-21	26-Apr-21	33
AS032220	Revise & Re-submit Wiring Dwgs, Cable Schedule & Design Cal.	28	25-Mar-21	21-Apr-21	27-Apr-21	24-May-21	33
AS032230	Review & Accept of Wiring Dwgs, Cable Schedule & Design Cal.	21	22-Apr-21	12-May-21	25-May-21	14-Jun-21	33
AS032300	Prepare & Submit the Schedule, Design Cal. & Fixing Details of Equipment	180	10-Sep-20 A	08-Mar-21	21-Mar-21	05-Apr-21	28
AS032310	Review & Comment on the Schedule, Design Cal. & Fixing Details of Equipment	21	09-Mar-21	29-Mar-21	06-Apr-21	26-Apr-21	28
AS032320	Revise & Re-submit the Schedule, Design Cal. & Fixing Details of Equipment	28	30-Mar-21	26-Apr-21	27-Apr-21	24-May-21	28



Activity ID	Activity Name	Original Duration	Early Start	Early Finish	Late Start	Late Finish	Total Float
AS032330	Review & Accept of the Schedule, Design Cal. & Fixing Details of Equipment	21	27-Apr-21	17-May-21	25-May-21	14-Jun-21	28
Thermal Hydrolysis Process (THP)							
AS042200	Prepare & Submit Wiring Dwgs, Cable Schedule & Design Cal.	241	18-May-20 A	07-Jan-21 A	21-Apr-21	21-Apr-21	
AS042210	Review & Comment on Wiring Dwgs, Cable Schedule & Design Cal.	21	08-Jan-21 A	27-Jan-21 A	21-Apr-21	21-Apr-21	
AS042220	Revise & Re-submit Wiring Dwgs, Cable Schedule & Design Cal.	28	28-Jan-21 A	20-Mar-21	21-Apr-21	18-May-21	59
AS042230	Review & Accept of Wiring Dwgs, Cable Schedule & Design Cal.	21	21-Mar-21	10-Apr-21	19-May-21	08-Jun-21	59
AS042300	Prepare & Submit the Schedule, Design Cal. & Fixing Details of Equipment	180	17-Jul-20 A	07-Jan-21 A	21-Apr-21	21-Apr-21	
AS042310	Review & Comment on the Schedule, Design Cal. & Fixing Details of Equipment	21	08-Jan-21 A	27-Jan-21 A	21-Apr-21	21-Apr-21	
AS042320	Revise & Re-submit the Schedule, Design Cal. & Fixing Details of Equipment	28	28-Jan-21 A	20-Mar-21	21-Apr-21	18-May-21	59
AS042330	Review & Accept of the Schedule, Design Cal. & Fixing Details of Equipment	21	21-Mar-21	10-Apr-21	19-May-21	08-Jun-21	59
Sludge Digestion (SDi)							
AS052200	Prepare & Submit Wiring Dwgs, Cable Schedule & Design Cal.	180	01-Aug-20 A	19-Mar-21	10-Mar-21	05-Apr-21	17
AS052210	Review & Comment on Wiring Dwgs, Cable Schedule & Design Cal.	21	20-Mar-21	09-Apr-21	06-Apr-21	26-Apr-21	17
AS052220	Revise & Re-submit Wiring Dwgs, Cable Schedule & Design Cal.	28	10-Apr-21	07-May-21	27-Apr-21	24-May-21	17
AS052230	Review & Accept of Wiring Dwgs, Cable Schedule & Design Cal.	21	08-May-21	28-May-21	25-May-21	14-Jun-21	17
AS052300	Prepare & Submit the Schedule, Design Cal. & Fixing Details of Equipment	180	31-Aug-20 A	18-Mar-21	11-Mar-21	05-Apr-21	18
AS052310	Review & Comment on the Schedule, Design Cal. & Fixing Details of Equipment	21	19-Mar-21	08-Apr-21	06-Apr-21	26-Apr-21	18
AS052320	Revise & Re-submit the Schedule, Design Cal. & Fixing Details of Equipment	28	09-Apr-21	06-May-21	27-Apr-21	24-May-21	18
AS052330	Review & Accept of the Schedule, Design Cal. & Fixing Details of Equipment	21	07-May-21	27-May-21	25-May-21	14-Jun-21	18
Sludge Dewatering (SDe)							
AS062200	Prepare & Submit Wiring Dwgs, Cable Schedule & Design Cal.	180	02-Jul-20 A	03-Mar-21	26-Mar-21	05-Apr-21	33
AS062210	Review & Comment on Wiring Dwgs, Cable Schedule & Design Cal.	21	04-Mar-21	24-Mar-21	06-Apr-21	26-Apr-21	33
AS062220	Revise & Re-submit Wiring Dwgs, Cable Schedule & Design Cal.	28	25-Mar-21	21-Apr-21	27-Apr-21	24-May-21	33
AS062230	Review & Accept of Wiring Dwgs, Cable Schedule & Design Cal.	21	22-Apr-21	12-May-21	25-May-21	14-Jun-21	33
AS062300	Prepare & Submit the Schedule, Design Cal. & Fixing Details of Equipment	180	31-Aug-20 A	21-Mar-21	08-Mar-21	05-Apr-21	15
AS062310	Review & Comment on the Schedule, Design Cal. & Fixing Details of Equipment	21	22-Mar-21	11-Apr-21	06-Apr-21	26-Apr-21	15
AS062320	Revise & Re-submit the Schedule, Design Cal. & Fixing Details of Equipment	28	12-Apr-21	09-May-21	27-Apr-21	24-May-21	15
AS062330	Review & Accept of the Schedule, Design Cal. & Fixing Details of Equipment	21	10-May-21	30-May-21	25-May-21	14-Jun-21	15
Biogas Storage & Pre-Treatment (BSPT)							
AS072200	Prepare & Submit Wiring Dwgs, Cable Schedule & Design Cal.	150	31-Aug-20 A	19-Mar-21	10-Mar-21	05-Apr-21	17
AS072210	Review & Comment on Wiring Dwgs, Cable Schedule & Design Cal.	21	20-Mar-21	09-Apr-21	06-Apr-21	26-Apr-21	17
AS072220	Revise & Re-submit Wiring Dwgs, Cable Schedule & Design Cal.	28	10-Apr-21	07-May-21	27-Apr-21	24-May-21	17
AS072230	Review & Accept of Wiring Dwgs, Cable Schedule & Design Cal.	21	08-May-21	28-May-21	25-May-21	14-Jun-21	17
AS072300	Prepare & Submit the Schedule, Design Cal. & Fixing Details of Equipment	150	22-Oct-20 A	20-Mar-21	09-Mar-21	05-Apr-21	16
AS072310	Review & Comment on the Schedule, Design Cal. & Fixing Details of Equipment	21	21-Mar-21	10-Apr-21	06-Apr-21	26-Apr-21	16
AS072320	Revise & Re-submit the Schedule, Design Cal. & Fixing Details of Equipment	28	11-Apr-21	08-May-21	27-Apr-21	24-May-21	16
AS072330	Review & Accept of the Schedule, Design Cal. & Fixing Details of Equipment	21	09-May-21	29-May-21	25-May-21	14-Jun-21	16
Combined Heat & Power Generation (CHP)							
AS082200	Prepare & Submit Wiring Dwgs, Cable Schedule & Design Cal.	233	18-May-20 A	25-Feb-21	01-Apr-21	05-Apr-21	39
AS082210	Review & Comment on Wiring Dwgs, Cable Schedule & Design Cal.	21	26-Feb-21	18-Mar-21	06-Apr-21	26-Apr-21	39
AS082220	Revise & Re-submit Wiring Dwgs, Cable Schedule & Design Cal.	28	19-Mar-21	15-Apr-21	27-Apr-21	24-May-21	39
AS082230	Review & Accept of Wiring Dwgs, Cable Schedule & Design Cal.	21	16-Apr-21	06-May-21	25-May-21	14-Jun-21	39
AS082300	Prepare & Submit the Schedule, Design Cal. & Fixing Details of Equipment	180	17-Jul-20 A	07-Jan-21 A	13-Apr-21	13-Apr-21	
AS082310	Review & Comment on the Schedule, Design Cal. & Fixing Details of Equipment	21	03-Aug-20 A	01-Mar-21	13-Apr-21	21-Apr-21	51

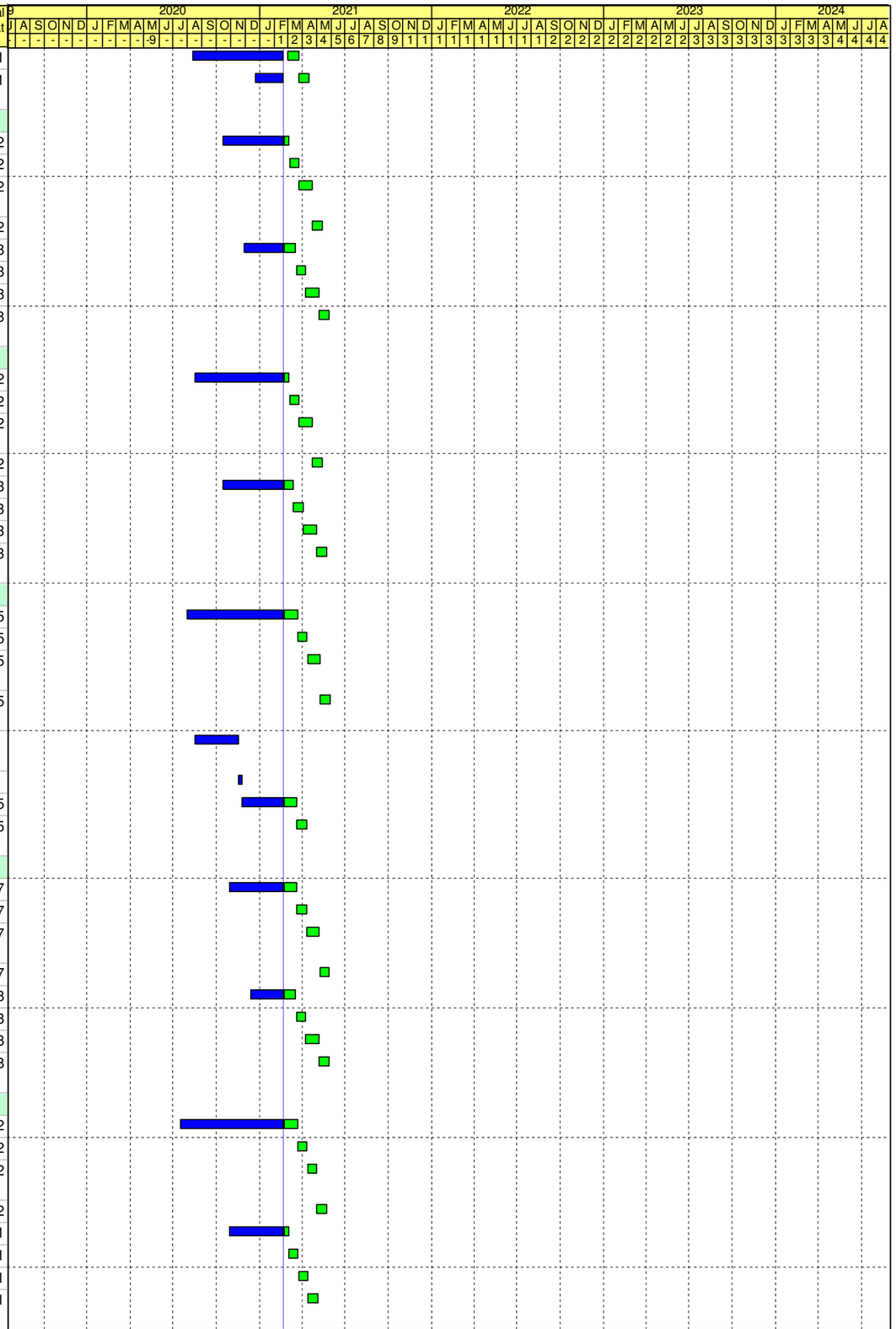


Remaining Work
Critical Activity
Milestone
Actual Progress

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
Revised Programme - as at 20 Feb 2021

Date	Revision	Checked	Approved
30-Oct-20	Rev.3	LT	KM
02-Dec-20	Rev.4	LT	KM
30-Dec-20	Rev.5	LT	KM
26-Jan-21	Rev.6	LT	KM
26-Feb-21	Rev.7	LT	KM

Activity ID	Activity Name	Original Duration	Early Start	Early Finish	Late Start	Late Finish	Total Float
AS082320	Revise & Re-submit the Schedule, Design Cal. & Fixing Details of Equipment	28	12-Aug-20 A	24-Mar-21	22-Apr-21	14-May-21	51
AS082330	Review & Accept of the Schedule, Design Cal. & Fixing Details of Equipment	21	22-Dec-20 A	14-Apr-21	15-May-21	04-Jun-21	51
Waste Gas Burning System (WGB)							
AS092200	Prepare & Submit Wiring Dwgs, Cable Schedule & Design Cal.	90	15-Oct-20 A	04-Mar-21	25-Mar-21	05-Apr-21	32
AS092210	Review & Comment on Wiring Dwgs, Cable Schedule & Design Cal.	21	05-Mar-21	25-Mar-21	06-Apr-21	26-Apr-21	32
AS092220	Revise & Re-submit Wiring Dwgs, Cable Schedule & Design Cal.	28	26-Mar-21	22-Apr-21	27-Apr-21	24-May-21	32
AS092230	Review & Accept of Wiring Dwgs, Cable Schedule & Design Cal.	21	23-Apr-21	13-May-21	25-May-21	14-Jun-21	32
AS092300	Prepare & Submit the Schedule, Design Cal. & Fixing Details of Equipment	90	29-Nov-20 A	18-Mar-21	11-Mar-21	05-Apr-21	18
AS092310	Review & Comment on the Schedule, Design Cal. & Fixing Details of Equipment	21	19-Mar-21	08-Apr-21	06-Apr-21	26-Apr-21	18
AS092320	Revise & Re-submit the Schedule, Design Cal. & Fixing Details of Equipment	28	09-Apr-21	06-May-21	27-Apr-21	24-May-21	18
AS092330	Review & Accept of the Schedule, Design Cal. & Fixing Details of Equipment	21	07-May-21	27-May-21	25-May-21	14-Jun-21	18
Plant Service Water System (PSW)							
AS122200	Prepare & Submit Wiring Dwgs, Cable Schedule & Design Cal.	150	16-Aug-20 A	04-Mar-21	25-Mar-21	05-Apr-21	32
AS122210	Review & Comment on Wiring Dwgs, Cable Schedule & Design Cal.	21	05-Mar-21	25-Mar-21	06-Apr-21	26-Apr-21	32
AS122220	Revise & Re-submit Wiring Dwgs, Cable Schedule & Design Cal.	28	26-Mar-21	22-Apr-21	27-Apr-21	24-May-21	32
AS122230	Review & Accept of Wiring Dwgs, Cable Schedule & Design Cal.	21	23-Apr-21	13-May-21	25-May-21	14-Jun-21	32
AS122300	Prepare & Submit the Schedule, Design Cal. & Fixing Details of Equipment	150	15-Oct-20 A	13-Mar-21	16-Mar-21	05-Apr-21	23
AS122310	Review & Comment on the Schedule, Design Cal. & Fixing Details of Equipment	21	14-Mar-21	03-Apr-21	06-Apr-21	26-Apr-21	23
AS122320	Revise & Re-submit the Schedule, Design Cal. & Fixing Details of Equipment	28	04-Apr-21	01-May-21	27-Apr-21	24-May-21	23
AS122330	Review & Accept of the Schedule, Design Cal. & Fixing Details of Equipment	21	02-May-21	22-May-21	25-May-21	14-Jun-21	23
Surplus Activated Sludge Pumping Station (SAS)							
AS142200	Prepare & Submit Wiring Dwgs, Cable Schedule & Design Cal.	202	01-Aug-20 A	21-Mar-21	08-Mar-21	05-Apr-21	15
AS142210	Review & Comment on Wiring Dwgs, Cable Schedule & Design Cal.	21	22-Mar-21	11-Apr-21	06-Apr-21	26-Apr-21	15
AS142220	Revise & Re-submit Wiring Dwgs, Cable Schedule & Design Cal.	28	12-Apr-21	09-May-21	27-Apr-21	24-May-21	15
AS142230	Review & Accept of Wiring Dwgs, Cable Schedule & Design Cal.	21	10-May-21	30-May-21	25-May-21	14-Jun-21	15
AS142300	Prepare & Submit the Schedule, Design Cal. & Fixing Details of Equipment	183	16-Aug-20 A	17-Nov-20 A	27-Apr-21	27-Apr-21	
AS142310	Review & Comment on the Schedule, Design Cal. & Fixing Details of Equipment	21	18-Nov-20 A	24-Nov-20 A	27-Apr-21	27-Apr-21	
AS142320	Revise & Re-submit the Schedule, Design Cal. & Fixing Details of Equipment	28	25-Nov-20 A	20-Mar-21	27-Apr-21	24-May-21	65
AS142330	Review & Accept of the Schedule, Design Cal. & Fixing Details of Equipment	21	21-Mar-21	10-Apr-21	25-May-21	14-Jun-21	65
Control and Monitoring System							
AS182200	Prepare & Submit Wiring Dwgs, Cable Schedule & Design Cal.	90	30-Oct-20 A	19-Mar-21	10-Mar-21	05-Apr-21	17
AS182210	Review & Comment on Wiring Dwgs, Cable Schedule & Design Cal.	21	20-Mar-21	09-Apr-21	06-Apr-21	26-Apr-21	17
AS182220	Revise & Re-submit Wiring Dwgs, Cable Schedule & Design Cal.	28	10-Apr-21	07-May-21	27-Apr-21	24-May-21	17
AS182230	Review & Accept of Wiring Dwgs, Cable Schedule & Design Cal.	21	08-May-21	28-May-21	25-May-21	14-Jun-21	17
AS182300	Prepare & Submit the Schedule, Design Cal. & Fixing Details of Equipment	75	14-Dec-20 A	18-Mar-21	11-Mar-21	05-Apr-21	18
AS182310	Review & Comment on the Schedule, Design Cal. & Fixing Details of Equipment	21	19-Mar-21	08-Apr-21	06-Apr-21	26-Apr-21	18
AS182320	Revise & Re-submit the Schedule, Design Cal. & Fixing Details of Equipment	28	09-Apr-21	06-May-21	27-Apr-21	24-May-21	18
AS182330	Review & Accept of the Schedule, Design Cal. & Fixing Details of Equipment	21	07-May-21	27-May-21	25-May-21	14-Jun-21	18
Lifting Appliances							
AS192200	Prepare & Submit Wiring Dwgs, Cable Schedule & Design Cal.	198	17-Jul-20 A	21-Mar-21	15-Mar-21	12-Apr-21	22
AS192210	Review & Comment on Wiring Dwgs, Cable Schedule & Design Cal.	21	22-Mar-21	11-Apr-21	13-Apr-21	03-May-21	22
AS192220	Revise & Re-submit Wiring Dwgs, Cable Schedule & Design Cal.	21	12-Apr-21	02-May-21	04-May-21	24-May-21	22
AS192230	Review & Accept of Wiring Dwgs, Cable Schedule & Design Cal.	21	03-May-21	23-May-21	25-May-21	14-Jun-21	22
AS192300	Prepare & Submit the Schedule, Design Cal. & Fixing Details of Equipment	93	30-Oct-20 A	02-Mar-21	03-Apr-21	12-Apr-21	41
AS192310	Review & Comment on the Schedule, Design Cal. & Fixing Details of Equipment	21	03-Mar-21	23-Mar-21	13-Apr-21	03-May-21	41
AS192320	Revise & Re-submit the Schedule, Design Cal. & Fixing Details of Equipment	21	24-Mar-21	13-Apr-21	04-May-21	24-May-21	41
AS192330	Review & Accept of the Schedule, Design Cal. & Fixing Details of Equipment	21	14-Apr-21	04-May-21	25-May-21	14-Jun-21	41

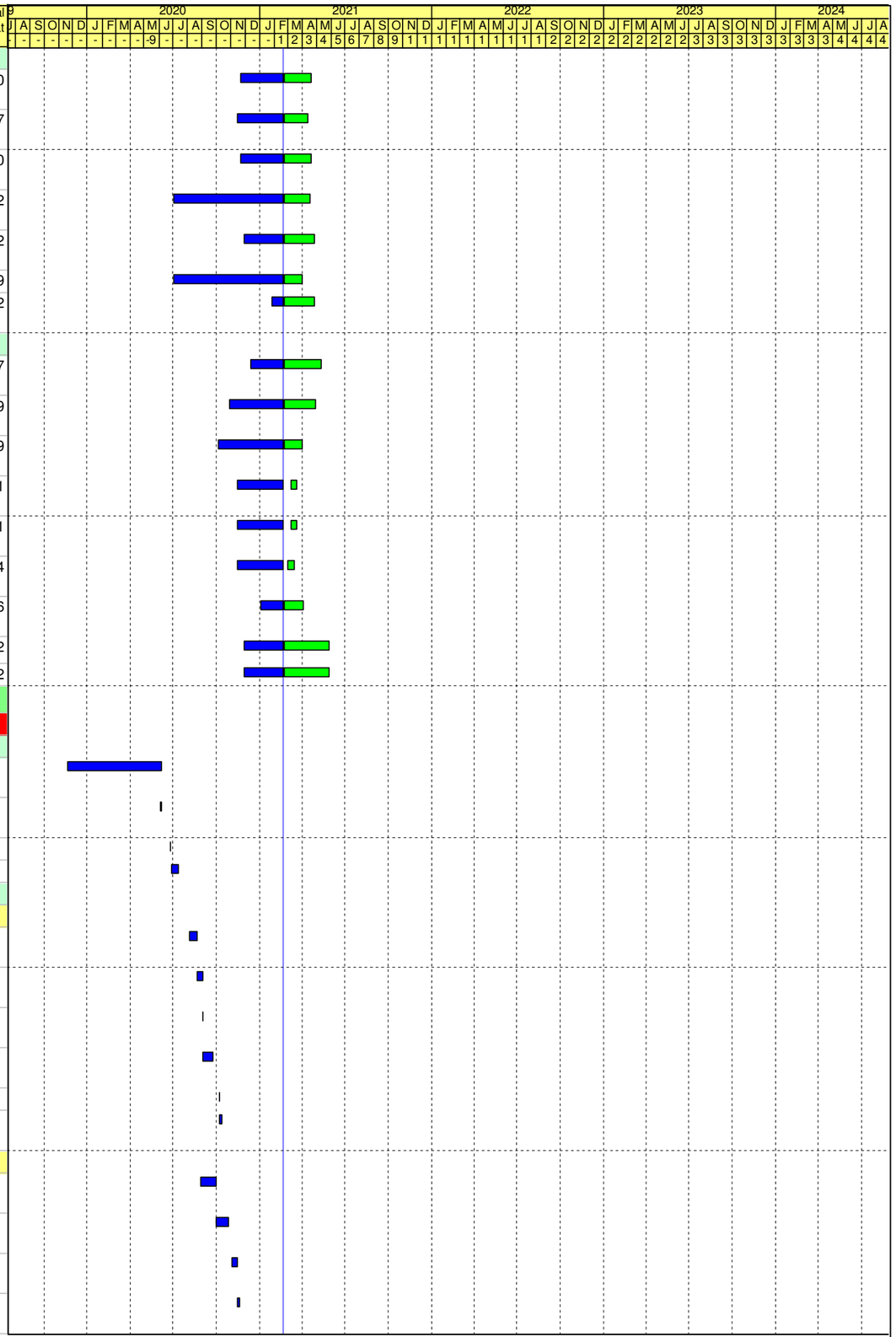


Remaining Work
Critical Activity
Milestone
Actual Progress

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
Revised Programme - as at 20 Feb 2021

Date	Revision	Checked	Approved
30-Oct-20	Rev.3	LT	KM
02-Dec-20	Rev.4	LT	KM
30-Dec-20	Rev.5	LT	KM
26-Jan-21	Rev.6	LT	KM
26-Feb-21	Rev.7	LT	KM

Activity ID	Activity Name	Original Duration	Early Start	Early Finish	Late Start	Late Finish	Total Float
Building Services							
AS201100	Submit & Accept BS Works Design & Dwgs for Sludge Dewatering Building	150	21-Nov-20 A	19-Apr-21	12-Apr-21	08-Jun-21	50
AS201200	Submit & Accept BS Works Design & Dwgs for CHP Building	150	14-Nov-20 A	12-Apr-21	19-Apr-21	08-Jun-21	57
AS201300	Submit & Accept BS Works Design & Dwgs for Sludge Digester & Distribution Chamber	150	21-Nov-20 A	19-Apr-21	12-Apr-21	08-Jun-21	50
AS201500	Submit & Accept BS Works Design & Dwgs for Workshop No. 2	150	02-Jul-20 A	17-Apr-21	14-Apr-21	08-Jun-21	52
AS201700	Submit & Accept BS Works Design & Dwgs for Other Facilities	150	29-Nov-20 A	27-Apr-21	04-Apr-21	08-Jun-21	42
AS201800	Submit & Accept BS Works Design & Dwgs for FS Installation	180	02-Jul-20 A	31-Mar-21	01-May-21	08-Jun-21	69
AS201900	Submit & Accept BS Works Design & Dwgs for Outdoor Lighting Installation	90	28-Jan-21 A	27-Apr-21	04-Apr-21	08-Jun-21	42
Miscellaneous							
AS211100	Submit & Accept Design & Dwgs for DO System	150	14-Dec-20 A	12-May-21	20-Mar-21	08-Jun-21	27
AS211200	Submit & Accept Design & Dwgs for Sewage Pumping Station	183	30-Oct-20 A	30-Apr-21	01-Apr-21	08-Jun-21	39
AS211300	Submit & Accept Design & Dwgs for Process Water Pumping System	178	05-Oct-20 A	31-Mar-21	01-May-21	08-Jun-21	69
AS211400	Submit & Accept Design & Dwgs for External Sludge Transfer Pumping System	90	14-Nov-20 A	19-Mar-21	29-May-21	08-Jun-21	81
AS211500	Submit & Accept Design & Dwgs for THP Cooling Water Pumping Station	90	14-Nov-20 A	19-Mar-21	29-May-21	08-Jun-21	81
AS211600	Submit & Accept Design & Dwgs for Ferric Chloride Dosing System	120	14-Nov-20 A	16-Mar-21	25-May-21	08-Jun-21	84
AS211700	Submit & Accept Design & Dwgs for Temporary Primary Sludge Pumping Facility	90	04-Jan-21 A	03-Apr-21	28-Apr-21	08-Jun-21	66
AS211800	Submit & Accept Design & Dwgs for Gas Detection System	180	29-Nov-20 A	27-May-21	05-Mar-21	08-Jun-21	12
AS211900	Submit & Accept Design & Dwgs for CCTV System	180	29-Nov-20 A	27-May-21	05-Mar-21	08-Jun-21	12
Section 3 - Complete Design, Construction & T&C for Sidestream Facilities							
Major Subcontractor / Supplier Procurement							
Design							
AS160020	Procurement & PO for Deammonification Sidestream Treatment Facilities	200	20-Nov-19 A	05-Jun-20 A	08-Apr-21	08-Apr-21	
AS512260e	E&M (Process) Designer Award	1	05-Jun-20 A	05-Jun-20 A	04-Apr-24	04-Apr-24	
AS512270e	Civil & BS Designer Award	1	26-Jun-20 A	26-Jun-20 A	04-Apr-24	04-Apr-24	
AS512280e	Mobilisation	14	27-Jun-20 A	12-Jul-20 A	04-Apr-24	04-Apr-24	
Civil & Building Contractor							
For Site Clearance & Survey							
AS512290e	Submit Tender proprosal of Civil Contractor (Site Clearance & Survey)	14	05-Aug-20 A	20-Aug-20 A	21-Feb-21	21-Feb-21	
AS512300e	Review & Comment the Tender proprosal of Civil Contractor (Site Clearance & Survey)	14	21-Aug-20 A	01-Sep-20 A	21-Feb-21	21-Feb-21	
AS512310e	Re-submit Tender proprosal of Civil Contractor (Site Clearance & Survey)	14	02-Sep-20 A	02-Sep-20 A	21-Feb-21	21-Feb-21	
AS512320e	Review & Accept Tender proprosal of Civil Contractor (Site Clearance & Survey)	14	03-Sep-20 A	23-Sep-20 A	21-Feb-21	21-Feb-21	
AS512330e	Civil Contractor (Site Clearance & Survey) Award	1	07-Oct-20 A	07-Oct-20 A	21-Feb-21	21-Feb-21	
AS512340e	Mobilisation	5	08-Oct-20 A	12-Oct-20 A	21-Feb-21	21-Feb-21	
For Ground Investigation							
AS512350e	Submit Tender proprosal of Civil Contractor (Ground Investigation)	14	29-Aug-20 A	29-Sep-20 A	23-Apr-21	23-Apr-21	
AS512360	Review & Accept the Tender proprosal of Civil Contractor (Ground Investigation)	21	30-Sep-20 A	27-Oct-20 A	23-Apr-21	23-Apr-21	
AS512370e	Tender Invitation of Civil Contractor (Ground Investigation)	7	02-Nov-20 A	13-Nov-20 A	23-Apr-21	23-Apr-21	
AS512380e	Submission of Tender Report	7	14-Nov-20 A	18-Nov-20 A	23-Apr-21	23-Apr-21	

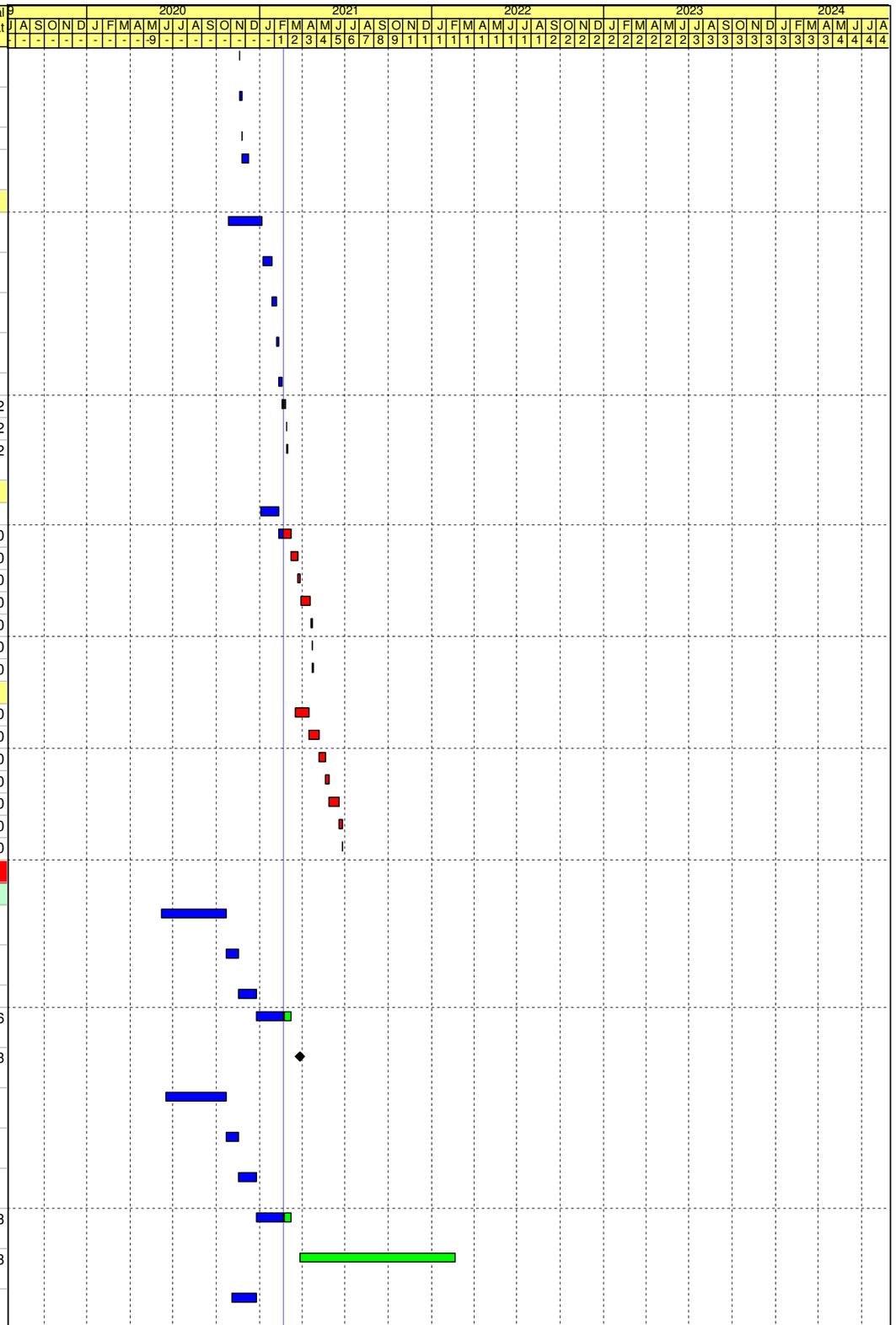


Remaining Work
Critical Activity
Milestone
Actual Progress

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
Revised Programme - as at 20 Feb 2021

Date	Revision	Checked	Approved
30-Oct-20	Rev.3	LT	KM
02-Dec-20	Rev.4	LT	KM
30-Dec-20	Rev.5	LT	KM
26-Jan-21	Rev.6	LT	KM
26-Feb-21	Rev.7	LT	KM

Activity ID	Activity Name	Original Duration	Early Start	Early Finish	Late Start	Late Finish	Total Float
AS512390e	Review & Accept the Tender Report by PM	21	19-Nov-20 A	19-Nov-20 A	23-Apr-21	23-Apr-21	
AS512400e	Contract Preparation	3	20-Nov-20 A	23-Nov-20 A	23-Apr-21	23-Apr-21	
AS512410e	Civil Contractor (Ground Investigation) Award	1	24-Nov-20 A	24-Nov-20 A	23-Apr-21	23-Apr-21	
AS512420e	Mobilisation	7	25-Nov-20 A	08-Dec-20 A	23-Apr-21	23-Apr-21	
For Pre-drilling & Post-drilling							
AS512430e	Submit Tender proprosal of Civil Contractor (Pre-drilling & Post-drilling)	74	26-Oct-20 A	06-Jan-21 A	14-Apr-21	14-Apr-21	
AS512440e	Review & Accept the Tender proprosal of Civil Contractor (Predrill & Proof drill)	21	07-Jan-21 A	27-Jan-21 A	14-Apr-21	14-Apr-21	
AS512450e	Tender Invitation of Civil Contractor (Pre-drilling & Post-drilling)	14	28-Jan-21 A	04-Feb-21 A	14-Apr-21	14-Apr-21	
AS512460e	Submission of Tender Report	4	05-Feb-21 A	10-Feb-21 A	14-Apr-21	14-Apr-21	
AS512470e	Review & Accept the Tender Report by PM	21	11-Feb-21 A	16-Feb-21 A	14-Apr-21	14-Apr-21	
AS512480e	Contract Preparation	3	17-Feb-21 A	25-Feb-21	14-Apr-21	18-Apr-21	52
AS512490e	Civil Contractor (Pre-drilling & Post-drilling) Award	1	26-Feb-21	26-Feb-21	19-Apr-21	19-Apr-21	52
AS512500e	Mobilisation	3	27-Feb-21	01-Mar-21	20-Apr-21	22-Apr-21	52
For Piling							
AS512510f	Submit Tender proprosal of Civil Contractor (Piling)	39	04-Jan-21 A	10-Feb-21 A	21-Feb-21	21-Feb-21	
AS512520f	Review & Accept the Tender proprosal of Civil Contractor (Piling)	25	11-Feb-21 A	07-Mar-21	21-Feb-21	07-Mar-21	0
AS512530f	Tender Invitation of Civil Contractor (Piling)	14	08-Mar-21	21-Mar-21	08-Mar-21	21-Mar-21	0
AS512540f	Submission of Tender Report	7	22-Mar-21	28-Mar-21	22-Mar-21	28-Mar-21	0
AS512550f	Review & Accept the Tender Report by PM	21	29-Mar-21	18-Apr-21	29-Mar-21	18-Apr-21	0
AS512560f	Contract Preparation	3	19-Apr-21	21-Apr-21	19-Apr-21	21-Apr-21	0
AS512570f	Civil Contractor (Piling) Award	1	22-Apr-21	22-Apr-21	22-Apr-21	22-Apr-21	0
AS512580f	Mobilisation	3	23-Apr-21	25-Apr-21	23-Apr-21	25-Apr-21	0
For Main Civil Works							
AS512590f	Submit Tender proprosal of Civil Contractor (Main Civil Works)	30	17-Mar-21*	15-Apr-21	17-Mar-21	15-Apr-21	0
AS512600f	Review & Accept the Tender proprosal of Civil Contractor (Main Civil Works)	21	16-Apr-21	06-May-21	16-Apr-21	06-May-21	0
AS512610f	Tender Invitation of Civil Contractor (Main Civil Works)	14	07-May-21	20-May-21	07-May-21	20-May-21	0
AS512620f	Submission of Tender Report	7	21-May-21	27-May-21	21-May-21	27-May-21	0
AS512630f	Review & Accept the Tender Report by PM	21	28-May-21	17-Jun-21	28-May-21	17-Jun-21	0
AS512640f	Contract Preparation	7	18-Jun-21	24-Jun-21	18-Jun-21	24-Jun-21	0
AS512650f	Civil Contractor (Main Civil Works) Award	1	25-Jun-21	25-Jun-21	25-Jun-21	25-Jun-21	0
Design & Submission							
Architectural							
AS160100	Prepare & Submit Building Layout Plan	60	07-Jun-20 A	21-Oct-20 A	08-Apr-21	08-Apr-21	
AS160110	Review & Comment on BuildingI Layout Plan by PM	67	22-Oct-20 A	17-Nov-20 A	08-Apr-21	08-Apr-21	
AS160120	Revise & Re-submit Building Layout Plan	28	18-Nov-20 A	24-Dec-20 A	08-Apr-21	08-Apr-21	
AS160130	Review & Accept of Building Layout Plan by PM	21	25-Dec-20 A	07-Mar-21	08-Apr-21	22-Apr-21	46
AS160190e	Cooordination Meeting with DSD (Employer) for the Architectural Drawing	0		27-Mar-21		15-Nov-21	233
AS160200	Prepare & Submit Architectural Design / Drawings	60	17-Jun-20 A	21-Oct-20 A	01-Nov-21	01-Nov-21	
AS160210	Review & Comment on Architectural Design / Drawings by PM	67	22-Oct-20 A	17-Nov-20 A	01-Nov-21	01-Nov-21	
AS160220	Revise & Re-submit Architectural Design / Drawings	28	18-Nov-20 A	24-Dec-20 A	01-Nov-21	01-Nov-21	
AS160230	Review & Accept of Architectural Design / Drawings by PM	21	25-Dec-20 A	07-Mar-21	01-Nov-21	15-Nov-21	253
AS160240	Review & Accept of Architectural Design / Drawings by DSD (incl. VCAB) & DAP of ArchSD	330	28-Mar-21	20-Feb-22	16-Nov-21	11-Oct-22	233
AS160500	Prepare & Submit ABWF Works Drawings	68	03-Nov-20 A	24-Dec-20 A	12-Oct-21	12-Oct-21	

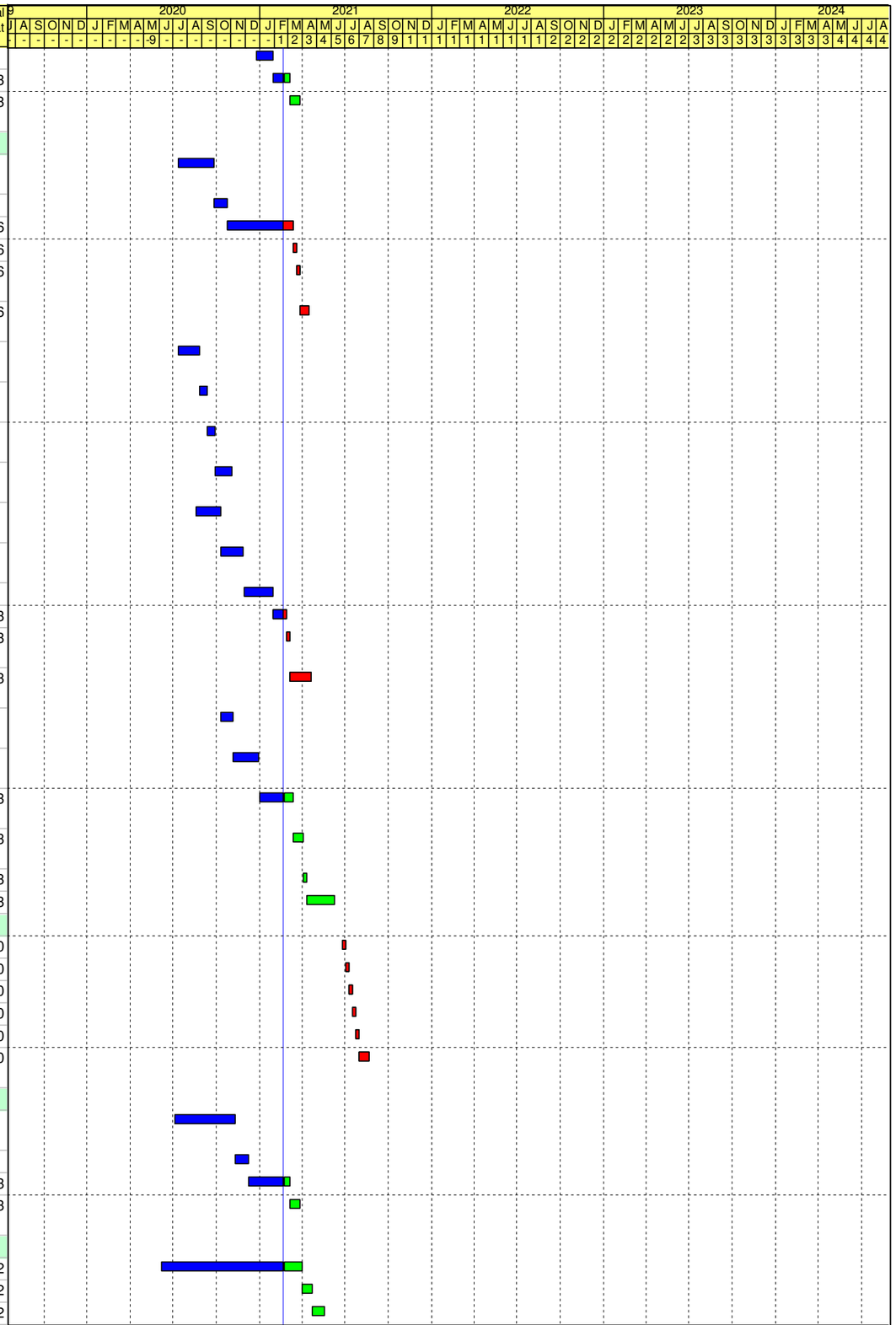


Remaining Work
Critical Activity
Milestone
Actual Progress

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
Revised Programme - as at 20 Feb 2021

Date	Revision	Checked	Approved
30-Oct-20	Rev.3	LT	KM
02-Dec-20	Rev.4	LT	KM
30-Dec-20	Rev.5	LT	KM
26-Jan-21	Rev.6	LT	KM
26-Feb-21	Rev.7	LT	KM

Activity ID	Activity Name	Original Duration	Early Start	Early Finish	Late Start	Late Finish	Total Float
AS160510	Review & Comment on ABWF Works Drawings by PM	21	25-Dec-20 A	29-Jan-21 A	12-Oct-21	12-Oct-21	
AS160520	Revise & Re-submit ABWF Works Drawings	28	30-Jan-21 A	06-Mar-21	12-Oct-21	25-Oct-21	233
AS160530	Review & Accept of ABWF Works Drawings by PM	21	07-Mar-21	27-Mar-21	26-Oct-21	15-Nov-21	233
Civil / Structural							
AS160240e	Prepare & Submit Loading Plan to ICE	60	13-Jul-20 A	25-Sep-20 A	27-Feb-21	27-Feb-21	
AS160250e	Review & Comment on Loading Plan by ICE	14	26-Sep-20 A	23-Oct-20 A	27-Feb-21	27-Feb-21	
AS160260e	Revise & Re-submit Loading Plan to ICE	65	24-Oct-20 A	12-Mar-21	27-Feb-21	18-Mar-21	6
AS160270e	Review & Accept of Loading Plan by ICE	7	13-Mar-21	19-Mar-21	19-Mar-21	25-Mar-21	6
AS160280e	Prepare & Submit Loading Plan to PM	7	20-Mar-21	26-Mar-21	26-Mar-21	01-Apr-21	6
AS160290e	Review & Accept of Loading Plan by PM & DSD (incl. BCM)	21	27-Mar-21	16-Apr-21	02-Apr-21	22-Apr-21	6
AS160292e	Prepare & Submit GI Plan	60	13-Jul-20 A	26-Aug-20 A	23-Apr-21	23-Apr-21	
AS160294e	Review & Comment on GI Plan by PM	14	27-Aug-20 A	10-Sep-20 A	23-Apr-21	23-Apr-21	
AS160296e	Revise & Re-submit GI Plan	7	11-Sep-20 A	28-Sep-20 A	23-Apr-21	23-Apr-21	
AS160298e	Review & Accept of GI Plan by PM	21	29-Sep-20 A	02-Nov-20 A	23-Apr-21	23-Apr-21	
AS160300	Prepare & Submit Foundation Design / Drawings to ICE & PM	60	20-Aug-20 A	09-Oct-20 A	21-Feb-21	21-Feb-21	
AS160310	Review & Comment on Foundation Design / Drawings by ICE & PM	79	10-Oct-20 A	27-Nov-20 A	24-Feb-21	24-Feb-21	
AS160320	Revise & Re-submit Foundation Design / Drawings to ICE & PM	14	28-Nov-20 A	29-Jan-21 A	24-Feb-21	24-Feb-21	
AS160330	Review & Accept of Foundation Design / Drawings by ICE & PM	10	30-Jan-21 A	26-Feb-21	24-Feb-21	01-Mar-21	3
AS160340e	Prepare & Submit Foundation Design / Drawings to DSD (incl. BCM)	7	27-Feb-21	05-Mar-21	02-Mar-21	08-Mar-21	3
AS160350e	Review & Accept of Foundation Design / Drawings by DSD (incl. BCM)	45	06-Mar-21	19-Apr-21	09-Mar-21	22-Apr-21	3
AS160400	Prepare & Submit Substructure / Superstructure Design / Drawings to ICE & PM	25	10-Oct-20 A	05-Nov-20 A	14-Apr-21	14-Apr-21	
AS160410	Review & Comment on Substructure / Superstructure Design / Drawings by ICE & PM	55	06-Nov-20 A	30-Dec-20 A	23-Apr-21	23-Apr-21	
AS160420	Revise & Re-submit Substructure / Superstructure Design / Drawings to ICE & PM	14	31-Dec-20 A	12-Mar-21	03-Aug-21	22-Aug-21	163
AS160430	Review & Accept of Substructure / Superstructure Design / Drawings by ICE & PM	21	13-Mar-21	02-Apr-21	23-Aug-21	12-Sep-21	163
AS160440e	Prepare & Submit Substructure / Superstructure Design / Drawings to DSD (incl. BCM)	7	03-Apr-21	09-Apr-21	13-Sep-21	19-Sep-21	163
AS160450e	Review & Accept of Substructure / Superstructure Design / Drawings by DSD (incl. BCM)	60	10-Apr-21	08-Jun-21	20-Sep-21	18-Nov-21	163
ELS							
AS512160e	Prepare & Submit ELS Plan to ICE	7	26-Jun-21	02-Jul-21	26-Jun-21	02-Jul-21	0
AS512170e	Review & Comment on ELS Plan by ICE	7	03-Jul-21	09-Jul-21	03-Jul-21	09-Jul-21	0
AS512180e	Revise & Re-submit ELS Plan to ICE	7	10-Jul-21	16-Jul-21	10-Jul-21	16-Jul-21	0
AS512190e	Review & Accept of ELS Plan by ICE	7	17-Jul-21	23-Jul-21	17-Jul-21	23-Jul-21	0
AS512200e	Prepare & Submit ELS Plan to PM	7	24-Jul-21	30-Jul-21	24-Jul-21	30-Jul-21	0
AS512210e	Review & Accept of ELS Plan by PM	21	31-Jul-21	20-Aug-21	31-Jul-21	20-Aug-21	0
Process Design							
AS512220e	Prepare & Submit E&M Works (Process) Design Drawings	198	06-Jul-20 A	10-Nov-20 A	11-Mar-22	11-Mar-22	
AS512230e	Review & Comment on E&M Works (Process) Design Drawings by PM	21	11-Nov-20 A	08-Dec-20 A	11-Mar-22	11-Mar-22	
AS512240e	Revise & Re-submit E&M Works (Process) Design Drawings	14	09-Dec-20 A	05-Mar-21	11-Mar-22	23-Mar-22	383
AS512250e	Review & Accept of E&M Works (Process) Design Drawings by PM	21	06-Mar-21	26-Mar-21	24-Mar-22	13-Apr-22	383
E&M Design							
AS151100	Prepare & Submit General Arrangement Drawings	227	07-Jun-20 A	31-Mar-21	02-Aug-21	09-Sep-21	162
AS151110	Review & Comment on General Arrangement Drawings by PM	21	01-Apr-21	21-Apr-21	10-Sep-21	30-Sep-21	162
AS151120	Revise & Re-submit General Arrangement Drawings	28	22-Apr-21	19-May-21	01-Oct-21	28-Oct-21	162

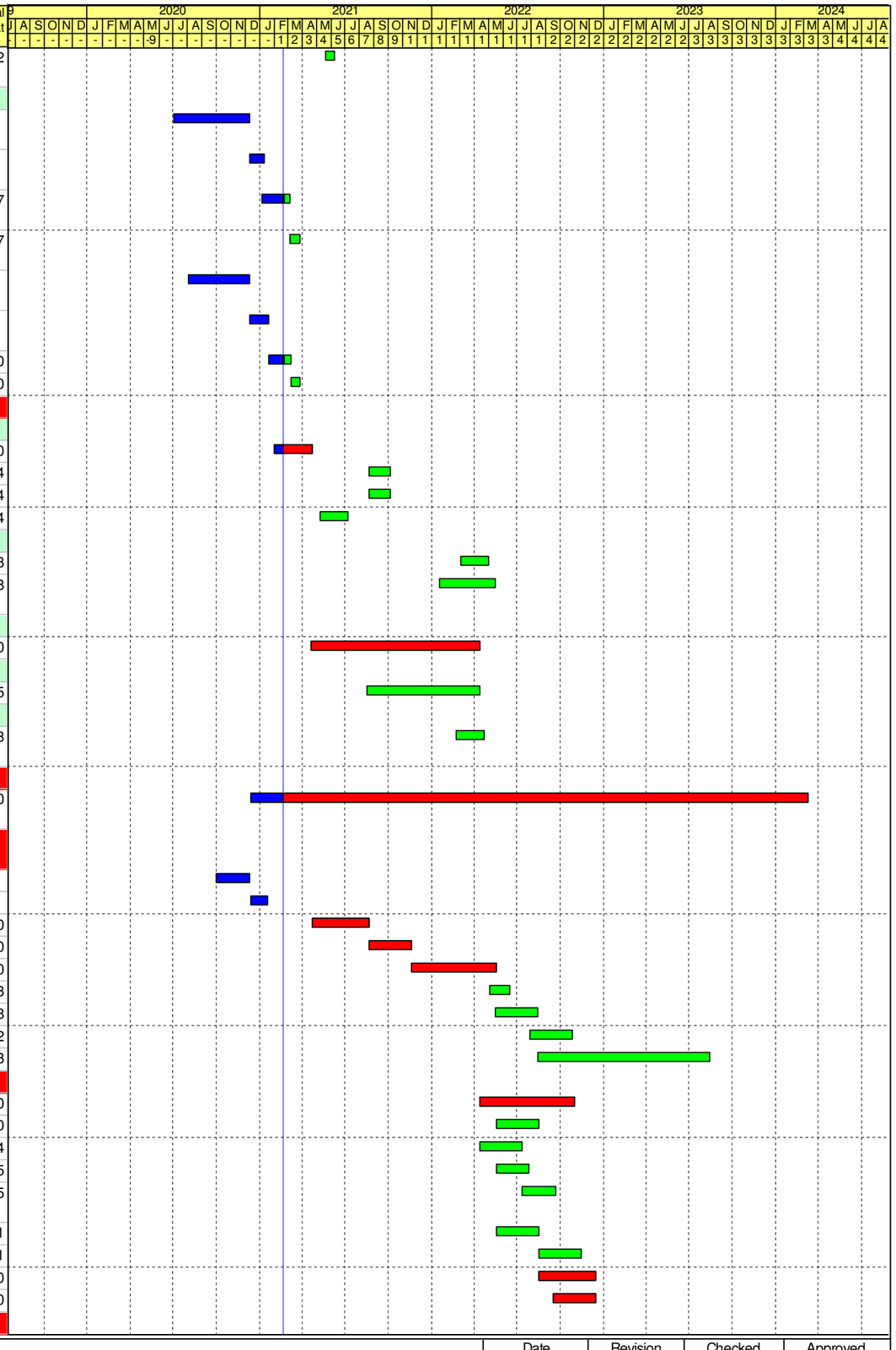


Remaining Work
Critical Activity
Milestone
Actual Progress

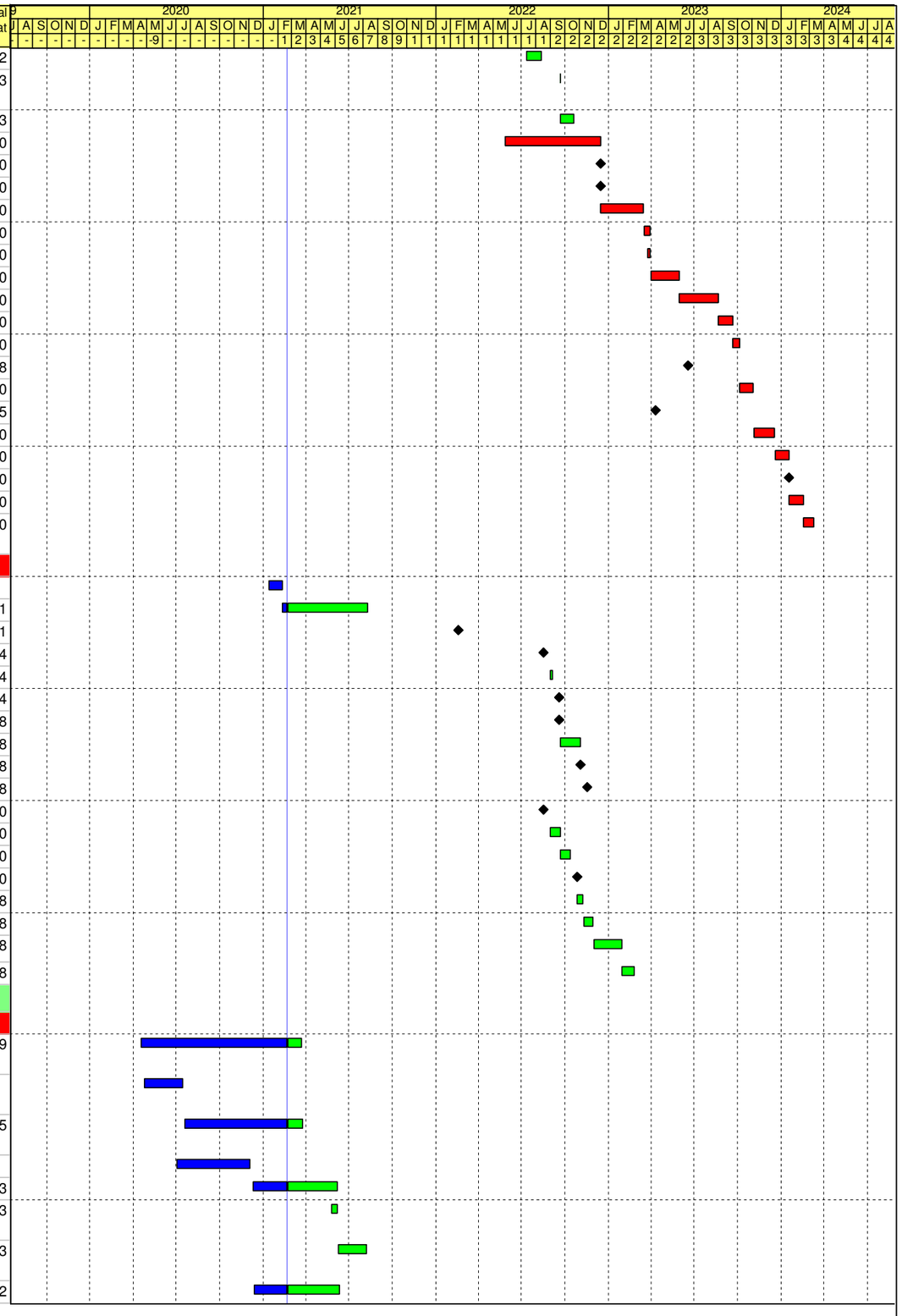
Contract No. DE/2018/03
Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1
Sidestream Treatment Facilities and E&M Works for Sluge Treatment Faciliteis
Revised Programme - as at 20 Feb 2021

Date	Revision	Checked	Approved
30-Oct-20	Rev.3	LT	KM
02-Dec-20	Rev.4	LT	KM
30-Dec-20	Rev.5	LT	KM
26-Jan-21	Rev.6	LT	KM
26-Feb-21	Rev.7	LT	KM

Activity ID	Activity Name	Original Duration	Early Start	Early Finish	Late Start	Late Finish	Total Float
AS151130	Review & Accept of General Arrangement Drawings by PM	21	20-May-21	09-Jun-21	29-Oct-21	18-Nov-21	162
BS							
AS201400	Prepare & Submit BS Works Design & Dwgs for Sidestream Treatment Facilities	264	03-Jul-20 A	10-Dec-20 A	14-May-22	14-May-22	
AS201405e	Review & Comment on BS Works Design & Dwgs for Sidestream Treatment Facilities by PM	21	11-Dec-20 A	11-Jan-21 A	14-May-22	14-May-22	
AS201410e	Revise & Re-submit BS Works Design & Dwgs for Sidestream Treatment Facilities	14	05-Jan-21 A	06-Mar-21	14-May-22	27-May-22	447
AS201415e	Review & Accept of BS Works Design & Dwgs for Sidestream Treatment Facilities by PM	21	07-Mar-21	27-Mar-21	28-May-22	17-Jun-22	447
AS201420	Submission & Submit FS Works Design & Dwgs for Sidestream Treatment Facilities	182	03-Aug-20 A	10-Dec-20 A	06-Jul-22	06-Jul-22	
AS201430e	Review & Comment on FS Works Design & Dwgs for Sidestream Treatment Facilities by PM	21	11-Dec-20 A	19-Jan-21 A	06-Jul-22	06-Jul-22	
AS201440e	Revise & Re-submit FS Works Design & Dwgs for Sidestream Treatment Facilities	14	20-Jan-21 A	07-Mar-21	06-Jul-22	20-Jul-22	500
AS201450e	Review & Accept of FS Works Design & Dwgs for Sidestream Treatment Facilities by PM	21	08-Mar-21	28-Mar-21	21-Jul-22	10-Aug-22	500
Major Plant & Materials Procurement							
Civil & Structure							
AS153130e	Procurement, Manufacture & Delivery of Piling	45	01-Feb-21 A	22-Apr-21	29-Mar-21	22-Apr-21	0
AS153140e	Procurement, Manufacture & Delivery of Concrete Mix	45	22-Aug-21*	05-Oct-21	05-Oct-21	18-Nov-21	44
AS153150e	Procurement, Manufacture & Delivery of Steel Reinforcement	45	22-Aug-21*	05-Oct-21	05-Oct-21	18-Nov-21	44
AS153160e	Procurement, Manufacture & Delivery of Metal Works Material	60	09-May-21*	07-Jul-21	22-Jun-21	20-Aug-21	44
ABWF							
AS153170	Procurement, Manufacture & Delivery of Water Proofing Material	60	04-Mar-22	02-May-22	28-Sep-22	26-Nov-22	208
AS153180	Procurement, Manufacture & Delivery of ABWF Works Material	120	17-Jan-22	16-May-22	13-Aug-22	10-Dec-22	208
E&M Process							
AS153100	Procurement, Manufacture & Delivery of Deammonification Sidestream Treatment Facilities	360	19-Apr-21	13-Apr-22	19-Apr-21	13-Apr-22	0
BS							
AS153190	Procurement, Manufacture & Delivery of BS Works Material	240	17-Aug-21	13-Apr-22	21-Oct-21	17-Jun-22	65
Fitting-out							
AS512370f	Procurement, Manufacture & Delivery of Fit-out Works Material	60	21-Feb-22	21-Apr-22	12-Oct-22	10-Dec-22	233
Ground Settlement, Tilting & Utility Monitoring							
AS153200f	Ground Settlement, Tilting & Utility Monitoring	1184	12-Dec-20 A	09-Mar-24	21-Feb-21	09-Mar-24	0
Civil Works Construction							
AS161100	Site Clearance & Survey	50	30-Sep-20 A	11-Dec-20 A	21-Feb-21	21-Feb-21	
AS161120	Ground Investigation	65	12-Dec-20 A	18-Jan-21 A	23-Apr-21	23-Apr-21	
AS161140	Foundation / Pilings (inc. pre-drilling, post-drilling, proof test, etc)	120	23-Apr-21	20-Aug-21	23-Apr-21	20-Aug-21	0
AS161160	Excavation / ELS	90	21-Aug-21	18-Nov-21	21-Aug-21	18-Nov-21	0
AS161180	Substructure / Superstructure	180	19-Nov-21	17-May-22	19-Nov-21	17-May-22	0
AS161200	Waterproofing	45	03-May-22	16-Jun-22	27-Nov-22	10-Jan-23	208
AS161220	External & Internal Finishes - 1st Fix (Blockwork, Plastering, Wet Trade)	90	17-May-22	14-Aug-22	11-Dec-22	10-Mar-23	208
AS161240	External & Internal Finishes - 2nd Fix (Ceiling / Wall / Floor Finishing, Door)	90	29-Jul-22	26-Oct-22	14-Sep-23	12-Dec-23	412
AS161260	Landscaping & Establishment Works	365	15-Aug-22	14-Aug-23	11-Mar-23	09-Mar-24	208
E&M Installation							
AS154100	E&M Installation of Deammonification Sidestream Treatment Facilities	200	14-Apr-22	30-Oct-22	14-Apr-22	30-Oct-22	0
AS154110e	E&M installation of DG Plant Room	90	18-May-22	15-Aug-22	07-Jul-22	04-Oct-22	50
AS154120	Installation of Electrical Supply Systems (TX, LV Switchboard & Temp. Power)	90	14-Apr-22	12-Jul-22	26-Aug-22	23-Nov-22	134
AS154160	FS Installation - Conduits, Trunking, & Pipeworks	70	18-May-22	26-Jul-22	11-Aug-22	19-Oct-22	85
AS154180	FS Installation - Cable Laying, Termination, Associated Fitting & Field Devices	70	13-Jul-22	20-Sep-22	06-Oct-22	14-Dec-22	85
AS154200	BS Fitting Installation - Conduits, Trunking, & Ductworks	90	18-May-22	15-Aug-22	18-Jun-22	15-Sep-22	31
AS154220	BS Fitting Installation - Cable Laying, Termination, Associated Fitting & Field Devices	90	16-Aug-22	13-Nov-22	16-Sep-22	14-Dec-22	31
AS154240	Installation of Control & Monitoring System	120	17-Aug-22	14-Dec-22	17-Aug-22	14-Dec-22	0
AS154260	Installation of CCTV System	90	16-Sep-22	14-Dec-22	16-Sep-22	14-Dec-22	0
Testing & Commissioning							



Activity ID	Activity Name	Original Duration	Early Start	Early Finish	Late Start	Late Finish	Total Float
AS155000d	SAT for TX & LV Switchboard	30	13-Jul-22	11-Aug-22	08-Sep-23	07-Oct-23	422
AS155020d	Power Energization (Power Provision from DE/2018/04 Contract)	1	20-Sep-22	20-Sep-22	08-Oct-23	08-Oct-23	383
AS155040d	Essential T&C for FSD Inspection	30	21-Sep-22	20-Oct-22	09-Oct-23	07-Nov-23	383
AS155100	SAT for Deammonification Sidestream Treatment Facilities (Ref. to PS6B.1.18.3)	200	29-May-22	14-Dec-22	29-May-22	14-Dec-22	0
AS155105e	Existing sludge dewatering facilities Ready (by DE/2018/04 Contract)	0		14-Dec-22		14-Dec-22	0
AS155110e	Plant service water from zone B/C Ready (Zone B by DE/2018/04 Contract)	0		14-Dec-22		14-Dec-22	0
AS155120a	Process Start Up	92	15-Dec-22	16-Mar-23	15-Dec-22	16-Mar-23	0
AS155140a	Submission & Acceptance of Process Start Up Report	14	17-Mar-23	30-Mar-23	17-Mar-23	30-Mar-23	0
AS155160a	Notice for Commencement of Phase 1 Commissioning Tests	7	24-Mar-23	30-Mar-23	24-Mar-23	30-Mar-23	0
AS155200	Phase 1 Commissioning Tests	60	31-Mar-23	29-May-23	31-Mar-23	29-May-23	0
AS155210e	Phase 1 Re-commissioning Tests (If Failure)	84	30-May-23	21-Aug-23	30-May-23	21-Aug-23	0
AS155220a	Submission & Acceptance of Phase 1 Commissioning Tests Report	30	22-Aug-23	20-Sep-23	22-Aug-23	20-Sep-23	0
AS155240a	Phase 1 Post Commissioning	14	21-Sep-23	04-Oct-23	21-Sep-23	04-Oct-23	0
AS155250e	Ready to Process start up of the first Anaerobic Digester in Zone C	0	19-Jun-23		05-Oct-23		108
AS155260a	Submission & Acceptance of Phase 1 Post Commissioning Report	30	05-Oct-23	03-Nov-23	05-Oct-23	03-Nov-23	0
AS155270e	THP digested sludge centrate from Zone C Ready	0		09-Apr-23		04-May-23	25
AS155300	Phase 2 Commissioning Tests	45	04-Nov-23	18-Dec-23	04-Nov-23	18-Dec-23	0
AS155320a	Submission & Acceptance of Phase 2 Commissioning Tests Report	30	19-Dec-23	17-Jan-24	19-Dec-23	17-Jan-24	0
AS155330e	Commissioning of new Anaerobic Digesters (2 nos.) in Zone C Finished	0		17-Jan-24		17-Jan-24	0
AS155340a	Phase 3 Commissioning Tests	30	18-Jan-24	16-Feb-24	18-Jan-24	16-Feb-24	0
AS155360a	Submission & Acceptance of Phase 3 Commissioning Tests Report	22	17-Feb-24	09-Mar-24	17-Feb-24	09-Mar-24	0
Statutory Submission / Inspection (FSD)							
AS201440	Prepare & Submit GBP for FSD approval	90	12-Jan-21 A	10-Feb-21 A	02-Jun-21	02-Jun-21	
AS201460	FSD Review & Approval of GBP	180	11-Feb-21 A	09-Aug-21	02-Jun-21	18-Nov-21	101
AS201470e	Submit WWO46 Part I/II to WSD (FS / PD)	0	17-Feb-22		20-Mar-22		31
AS201472e	Submit WWO46 Part IV to WSD (FS / PD)	0	16-Aug-22		04-Oct-23		414
AS201475e	WSD Inspection	7	30-Aug-22	05-Sep-22	18-Oct-23	24-Oct-23	414
AS201477e	Issuance of FS Water Certificate	0		19-Sep-22		07-Nov-23	414
AS201480e	Issuance of Form WWO46 Part Va	0		19-Sep-22		10-Jan-24	478
AS201482f	System Flushing / Sampling	45	20-Sep-22	03-Nov-22	11-Jan-24	24-Feb-24	478
AS201485e	Issuance of Form WWO46 Part Vb	0		03-Nov-22		24-Feb-24	478
AS201487f	Issuance of Water Certificate	0		17-Nov-22		09-Mar-24	478
AS201490e	Submit Application to FSD for DG Licence	0	16-Aug-22		05-Oct-22		50
AS201495e	D.G. Inspection, Defects Rectification & Re-inspection (Ventilation Division)	21	31-Aug-22	20-Sep-22	20-Oct-22	09-Nov-22	50
AS201500e	D.G. Inspection, Defects Rectification & Re-inspection (DG Division)	21	21-Sep-22	11-Oct-22	10-Nov-22	30-Nov-22	50
AS201505e	DG Licence issued	0		25-Oct-22		14-Dec-22	50
AS201510a	Prepare & Submit FS/314, FS/501 & FS/501a	14	26-Oct-22	08-Nov-22	08-Nov-23	21-Nov-23	378
AS201520a	FSD Review & Approval of FS/314, FS/501 & FS/501a	21	09-Nov-22	29-Nov-22	22-Nov-23	12-Dec-23	378
AS201540a	F.S. Inspection, Defects Rectification & Re-inspection	60	30-Nov-22	28-Jan-23	13-Dec-23	10-Feb-24	378
AS201560a	Issuance of Acceptance Letter	28	29-Jan-23	25-Feb-23	11-Feb-24	09-Mar-24	378
Section 4 - Complete Construction & T&C for UV System No.1 & EP Station No. 1							
Major Plant & Materials Fabrication & Delivery							
AS103160	Procurement & PO for FRP Cover (S11)	288	18-Apr-20 A	23-Mar-21	01-May-21	31-May-21	69
AS103300	Procurement & PO for Pipeworks & Associated Valves	90	25-Apr-20 A	15-Jul-20 A	21-Feb-21	21-Feb-21	
AS103320	Procurement & PO for Elec. Materials	198	18-Jul-20 A	25-Mar-21	06-Jul-21	07-Aug-21	135
AS103400	Procurement & PO for FS System (S20)	60	02-Jul-20 A	04-Dec-20 A	28-Apr-21	28-Apr-21	
AS104100	Fabrication of UV Disinfection System (S10)	180	10-Dec-20 A	07-Jun-21	15-Apr-21	30-Jul-21	53
AS104105c	FAT for UV Disinfection System (S10)	14	25-May-21	07-Jun-21	17-Jul-21	30-Jul-21	53
AS104110c	Delivery of UV Disinfection System (S10)	60	08-Jun-21	06-Aug-21	31-Jul-21	28-Sep-21	53
AS104120	Fabrication & Delivery of Lift-up Pumps (S11)	180	14-Dec-20 A	11-Jun-21	04-Apr-21	23-Jul-21	42

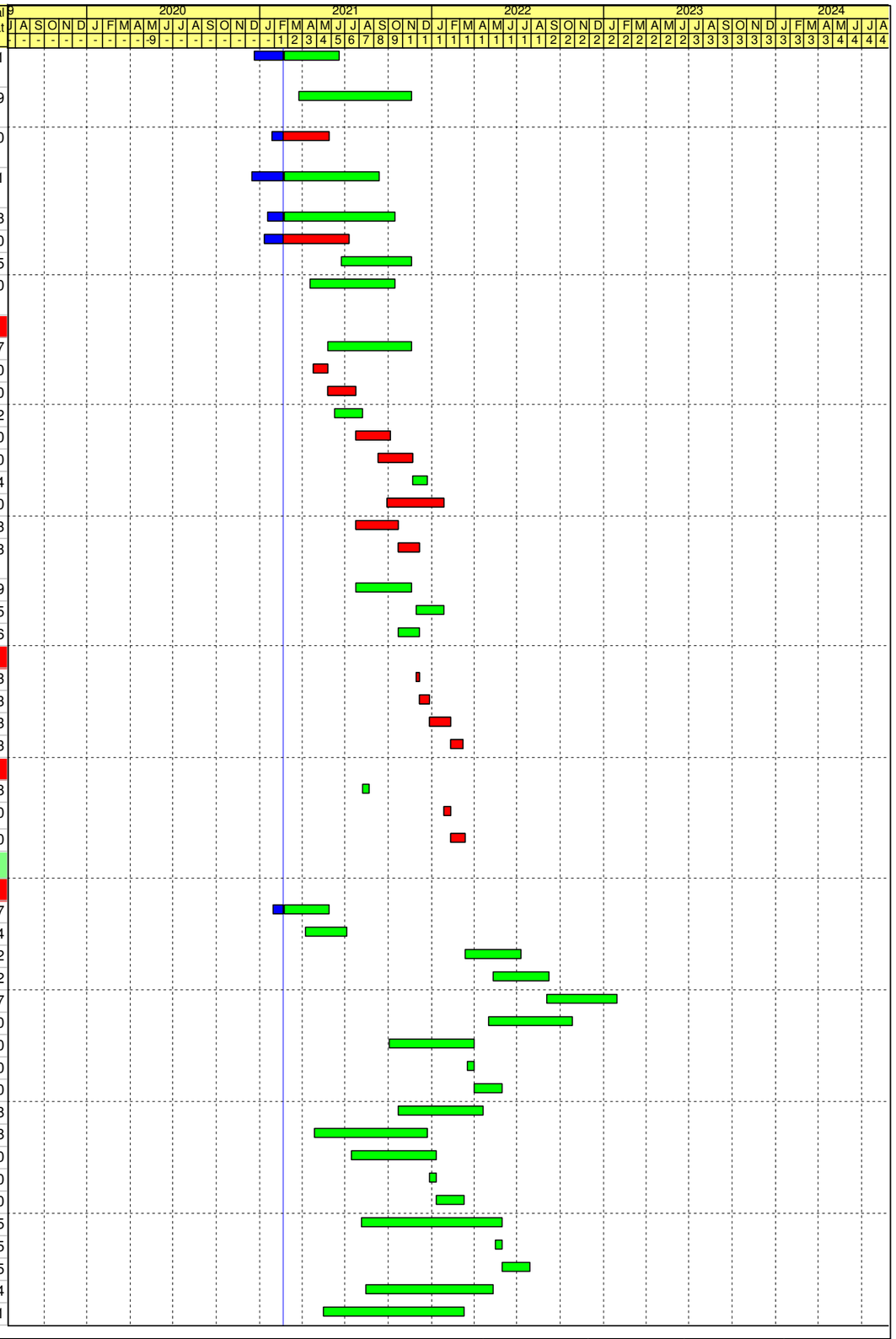


Remaining Work
Critical Activity
Milestone
Actual Progress

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
Revised Programme - as at 20 Feb 2021

Date	Revision	Checked	Approved
30-Oct-20	Rev.3	LT	KM
02-Dec-20	Rev.4	LT	KM
30-Dec-20	Rev.5	LT	KM
26-Jan-21	Rev.6	LT	KM
26-Feb-21	Rev.7	LT	KM

Activity ID	Activity Name	Original Duration	Early Start	Early Finish	Late Start	Late Finish	Total Float
AS104140	Fabrication & Delivery of Transfer Pumps (S13)	180	21-Dec-20 A	18-Jun-21	13-May-21	07-Sep-21	81
AS104160	Fabrication & Delivery of FRP Cover (S11)	240	24-Mar-21*	18-Nov-21	01-Jun-21	26-Jan-22	69
AS104180	Fabrication & Delivery of EOT Cranes (2T & 5T) (S19)	120	28-Jan-21 A	27-May-21	21-Feb-21	27-May-21	0
AS104200	Fabrication & Delivery of Stoplogs (S21)	270	16-Dec-20 A	11-Sep-21	23-May-21	11-Dec-21	91
AS104220	Fabrication & Delivery of Penstocks (S21)	270	18-Jan-21 A	14-Oct-21	20-Apr-21	11-Dec-21	58
AS104300	Fabrication & Delivery of Pipeworks & Associated Valves	180	11-Jan-21 A	09-Jul-21	21-Feb-21	09-Jul-21	0
AS104320	Fabrication & Delivery of Elec. Materials	150	24-Jun-21	20-Nov-21	08-Aug-21	04-Jan-22	45
AS104400	Fabrication & Delivery of FS System (S20)	180	18-Apr-21*	14-Oct-21	28-Apr-21	24-Oct-21	10
E&M Installation							
AS105100	Provision of Temporary Power for UV System No.1 & Effluent Transfer Pumping Station	180	25-May-21	20-Nov-21	31-Jul-21	26-Jan-22	67
AS106100	Mobilisation	30	25-Apr-21	24-May-21	25-Apr-21	24-May-21	0
AS106120	E&M Installation of EOT Cranes (5T)	60	25-May-21	23-Jul-21	25-May-21	23-Jul-21	0
AS106140	E&M Installation of EOT Cranes (2T)	60	08-Jun-21	06-Aug-21	10-Jul-21	07-Sep-21	32
AS106160	E&M Installation of Lift-up Pumps & Associated Pipeworks / Valves	75	24-Jul-21	06-Oct-21	24-Jul-21	06-Oct-21	0
AS106180	E&M Installation of Transfer Pumps & Associated Pipeworks / Valves	75	08-Sep-21	21-Nov-21	08-Sep-21	21-Nov-21	0
AS106200	E&M Installation of Penstocks & Stoplogs	30	22-Nov-21	21-Dec-21	26-Dec-21	24-Jan-22	34
AS106210	E&M Installation of UV System	120	29-Sep-21	26-Jan-22	29-Sep-21	26-Jan-22	0
AS106220	FS Installation - Conduits, Trunking, & Pipeworks	90	24-Jul-21	21-Oct-21	27-Jul-21	24-Oct-21	3
AS106240	FS Installation - Cable Laying, Termination, Associated Fitting & Field Devices	45	22-Oct-21	05-Dec-21	25-Oct-21	08-Dec-21	3
AS106260	BS Fitting Installation - Conduits, Trunking, & Ductworks	120	24-Jul-21	20-Nov-21	21-Sep-21	18-Jan-22	59
AS106280	BS Fitting Installation - Cable Laying, Termination, Associated Fitting & Field Devices	60	28-Nov-21	26-Jan-22	12-Jan-22	12-Mar-22	45
AS106320	Installation of CCTV System	45	23-Oct-21	06-Dec-21	28-Dec-21	10-Feb-22	66
Statutory Submission / Inspection (FSD)							
AS107100	Prepare & Submit FS/314, FS/501 & FS/501a	7	29-Nov-21	05-Dec-21	02-Dec-21	08-Dec-21	3
AS107110a	FSD Review & Approval of FS/314, FS/501 & FS/501a	21	06-Dec-21	26-Dec-21	09-Dec-21	29-Dec-21	3
AS107200	F.S. Inspection, Defects Rectification & Re-inspection	45	27-Dec-21	09-Feb-22	30-Dec-21	12-Feb-22	3
AS107300	Issuance of Acceptance Letter	28	10-Feb-22	09-Mar-22	13-Feb-22	12-Mar-22	3
Testing & Commissioning							
AS107350f	T&C and R.P.E inspection for EOT Cranes	15	07-Aug-21	21-Aug-21	12-Jan-22	26-Jan-22	158
AS107400	SAT for UV System No. 1 & Effluent Transfer Pumping Station No. 1	15	27-Jan-22	10-Feb-22	27-Jan-22	10-Feb-22	0
AS107500	System Commissioning Tests	30	11-Feb-22	12-Mar-22	11-Feb-22	12-Mar-22	0
Section 5 - Complete all remaining Works (incl. T&C)							
Fabrication, FAT & Delivery of Major Plant & Materials							
AS023290	Procurement & PO for Pipeworks & Associated Valves	120	29-Jan-21 A	28-May-21	17-Aug-21	21-Nov-21	177
AS023620	Procurement & PO for Elec. Materials	90	07-Apr-21	05-Jul-21	10-Jun-21	07-Sep-21	64
AS104240	Fabrication & Delivery of Transfomers -UV (Tx 07 & 08) (S17)	120	12-Mar-22	09-Jul-22	22-Jun-22	19-Oct-22	102
AS104260	Fabrication & Delivery of LVSB -UV (S17)	120	11-May-22	07-Sep-22	21-Aug-22	18-Dec-22	102
AS104280	Fabrication & Delivery of Control & Monitoring System -UV (S18)	150	01-Sep-22	28-Jan-23	18-Oct-22	16-Mar-23	47
AS501100	Fabrication & Delivery of Sludge Screening System (S2)	180	01-May-22	27-Oct-22	11-May-22	06-Nov-22	10
AS501120	Fabrication of Sludge Thickening System (S3)	180	03-Oct-21	31-Mar-22	13-Oct-21	10-Apr-22	10
AS501125c	FAT for Sludge Thickening System (S3)	14	18-Mar-22	31-Mar-22	28-Mar-22	10-Apr-22	10
AS501130c	Delivery of Sludge Thickening System (S3)	60	01-Apr-22	30-May-22	11-Apr-22	09-Jun-22	10
AS501140	Fabrication & Delivery of Sludge Digestion System (S5)	180	23-Oct-21	20-Apr-22	31-Oct-21	28-Apr-22	8
AS501150a	Fabrication & Delivery of FRP Walkway / Cover (S5)	240	26-Apr-21	21-Dec-21	04-May-21	29-Dec-21	8
AS501160	Fabrication of Sludge Dewatering System (S6)	180	15-Jul-21	10-Jan-22	25-Jul-21	20-Jan-22	10
AS501165c	FAT for Sludge Dewatering System (S6)	14	28-Dec-21	10-Jan-22	07-Jan-22	20-Jan-22	10
AS501170c	Delivery of Sludge Dewatering System (S6)	60	11-Jan-22	11-Mar-22	21-Jan-22	21-Mar-22	10
AS501180	Fabrication of THP System (S4)	300	04-Aug-21	30-May-22	28-Sep-21	24-Jul-22	55
AS501200	FAT for THP System (S4)	14	17-May-22	30-May-22	11-Jul-22	24-Jul-22	55
AS501220	Delivery of THP System (S4)	60	31-May-22	29-Jul-22	25-Jul-22	22-Sep-22	55
AS501240	Fabrication & Delivery of Biogas Storage & Pre-Treatment (S7)	270	14-Aug-21*	10-May-22	28-Aug-21	24-May-22	14
AS501260	Fabrication of CHP System (S8)	300	15-May-21*	10-Mar-22	05-Jun-21	31-Mar-22	21



JEC

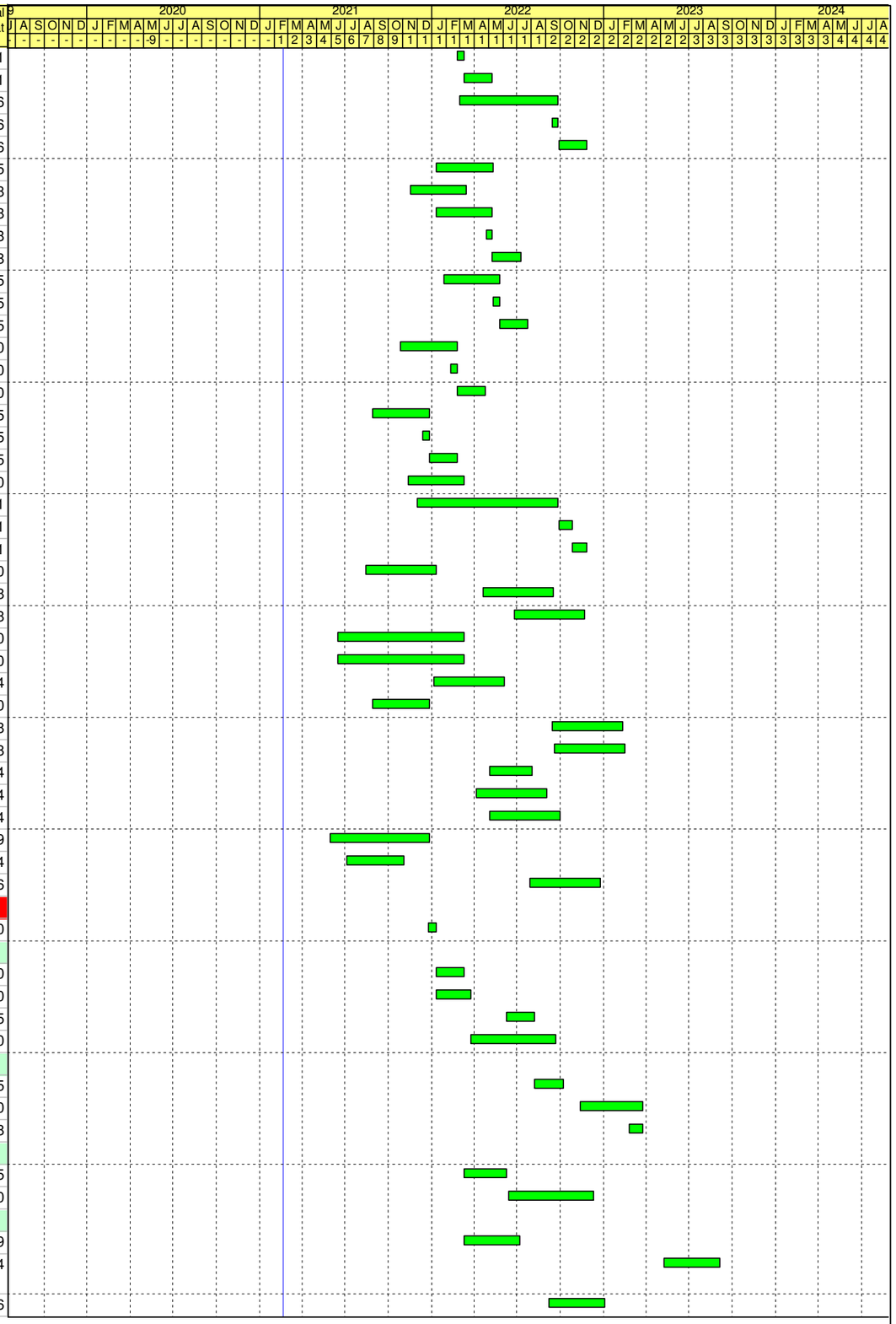
File Name: DE/2018/03 RP R7
Layout: DE1803 RP (Feb 2021) - WBS
Page 16 of 20

Remaining Work
Critical Activity
Milestone
Actual Progress

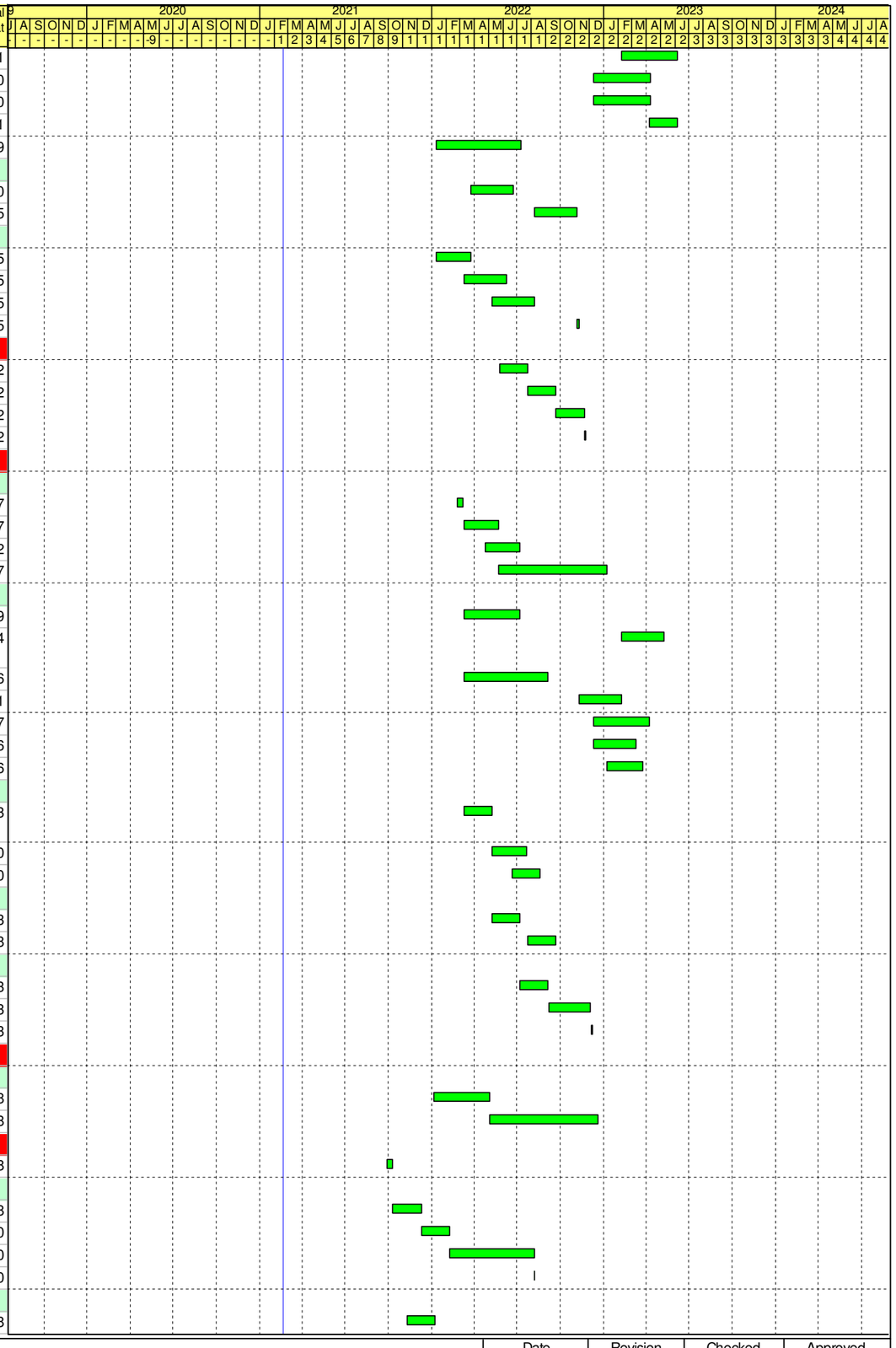
Contract No. DE/2018/03
Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1
Sidestream Treatment Facilities and E&M Works for Sluge Treatment Faciliteis
Revised Programme - as at 20 Feb 2021

Date	Revision	Checked	Approved
30-Oct-20	Rev.3	LT	KM
02-Dec-20	Rev.4	LT	KM
30-Dec-20	Rev.5	LT	KM
26-Jan-21	Rev.6	LT	KM
26-Feb-21	Rev.7	LT	KM

Activity ID	Activity Name	Original Duration	Early Start	Early Finish	Late Start	Late Finish	Total Float
AS501280	FAT for CHP Generators (S8)	14	25-Feb-22	10-Mar-22	18-Mar-22	31-Mar-22	21
AS501300	Delivery of CHP Generators (S8)	60	11-Mar-22	09-May-22	01-Apr-22	30-May-22	21
AS501320	Fabrication of Waste Gas Burning System (S9)	210	01-Mar-22	26-Sep-22	27-Mar-22	22-Oct-22	26
AS501340	FAT for Waste Gas Steam Generation Boiler (S9)	14	13-Sep-22	26-Sep-22	09-Oct-22	22-Oct-22	26
AS501360	Delivery of Waste Gas Burning System (S9)	60	27-Sep-22	25-Nov-22	23-Oct-22	21-Dec-22	26
AS501380	Fabrication & Delivery of Plant Service Water System (S12)	120	11-Jan-22	10-May-22	23-Sep-22	20-Jan-23	255
AS501400	Fabrication & Delivery of SAS Pumping System (S14)	120	17-Nov-21	16-Mar-22	04-Jan-22	03-May-22	48
AS501420	Fabrication of 11kV Transfomers (S17)	120	10-Jan-22	09-May-22	07-Jun-22	04-Oct-22	148
AS501440	FAT for 11kV Transfomers (S17)	14	26-Apr-22	09-May-22	21-Sep-22	04-Oct-22	148
AS501460	Delivery of 11kV Transfomers (S17)	60	10-May-22	08-Jul-22	05-Oct-22	03-Dec-22	148
AS501480	Fabrication of 380V Transfomers (S17)	120	26-Jan-22	25-May-22	21-May-22	17-Sep-22	115
AS501500	FAT for 380V Transfomers (S17)	14	12-May-22	25-May-22	04-Sep-22	17-Sep-22	115
AS501520	Delivery of 380V Transfomers (S17)	60	26-May-22	24-Jul-22	18-Sep-22	16-Nov-22	115
AS501540	Fabrication of 11 kV Switchboard (S17)	120	27-Oct-21	23-Feb-22	26-Mar-22	23-Jul-22	150
AS501560	FAT for 11 kV Switchboard (S17)	14	10-Feb-22	23-Feb-22	10-Jul-22	23-Jul-22	150
AS501580	Delivery of 11 kV Switchboard (S17)	60	24-Feb-22	24-Apr-22	24-Jul-22	21-Sep-22	150
AS501600	Fabrication of 380V Switchboard (S17)	120	29-Aug-21	26-Dec-21	22-Dec-21	20-Apr-22	115
AS501620	FAT for 380V Switchboard (S17)	14	13-Dec-21	26-Dec-21	07-Apr-22	20-Apr-22	115
AS501640	Delivery of 380V Switchboard (S17)	60	27-Dec-21	24-Feb-22	21-Apr-22	19-Jun-22	115
AS501660b	Fabrication & Delivery of Pipeworks & Associated Valves	120	12-Nov-21	11-Mar-22	22-Nov-21	21-Mar-22	10
AS501680	Fabrication of Control & Monitoring System (S18)	300	01-Dec-21*	26-Sep-22	22-Dec-21	17-Oct-22	21
AS501700	FAT for SCADA System (S18)	30	27-Sep-22	26-Oct-22	18-Oct-22	16-Nov-22	21
AS501720	Delivery of SCADA System (S18)	30	27-Oct-22	25-Nov-22	17-Nov-22	16-Dec-22	21
AS501740	Fabrication & Delivery of Lifting Appliances (S19)	150	13-Aug-21	09-Jan-22	23-Aug-21	19-Jan-22	10
AS501780	Fabrication & Delivery of H2S Removal System (S7)	150	21-Apr-22	17-Sep-22	29-Apr-22	25-Sep-22	8
AS501800	Fabrication & Delivery of DO System (S21)	150	25-Jun-22	21-Nov-22	03-Jul-22	29-Nov-22	8
AS501820	Fabrication & Delivery of Stoplog (S21)	270	15-Jun-21	11-Mar-22	25-Jun-21	21-Mar-22	10
AS501840	Fabrication & Delivery of Penstock (S21)	270	15-Jun-21	11-Mar-22	25-Jun-21	21-Mar-22	10
AS501860	Fabrication & Delivery of Sewage Pump (S21)	150	05-Jan-22	03-Jun-22	19-Jan-22	17-Jun-22	14
AS501880	Fabrication & Delivery of Process Water Pump (S21)	120	29-Aug-21	26-Dec-21	25-Jul-22	21-Nov-22	330
AS501900	Fabrication & Delivery of External Sludge Transfer Pump (S21)	150	13-Sep-22	09-Feb-23	01-Oct-22	27-Feb-23	18
AS501920	Fabrication & Delivery of THP Cooling Pump (S21)	150	19-Sep-22	15-Feb-23	27-Sep-22	23-Feb-23	8
AS501940	Fabrication & Delivery of Ferric Chloride Storage Tank (S21)	90	05-May-22	02-Aug-22	19-May-22	16-Aug-22	14
AS501960	Fabrication & Delivery of Ferric Chloride Dosing Pump (S21)	150	05-Apr-22	01-Sep-22	19-Apr-22	15-Sep-22	14
AS501980	Fabrication & Delivery of Temporary Primary Sludge Pump (S21)	150	05-May-22	01-Oct-22	19-May-22	15-Oct-22	14
AS501990b	Fabrication & Delivery of Genset	210	31-May-21	26-Dec-21	17-Oct-21	14-May-22	139
AS510060	Fabrication & Delivery of Elec. Materials	120	06-Jul-21	02-Nov-21	08-Sep-21	05-Jan-22	64
AS510080	Fabrication & Delivery of Gas Detection System	150	29-Jul-22	25-Dec-22	24-Aug-22	20-Jan-23	26
Sludge Dewatering Building							
AS502100	Mobilisation	15	26-Dec-21	09-Jan-22	05-Jan-22	19-Jan-22	10
Sludge Dewatering (SDe)							
AS502120	E&M Installation of Process Water Pump (S21)	60	10-Jan-22	10-Mar-22	06-Dec-22	03-Feb-23	330
AS502140	E&M Installation of EOT Crane LA-01-02	75	10-Jan-22	25-Mar-22	20-Jan-22	04-Apr-22	10
AS502150	E&M Installation of Monorail LA-01-04	60	09-Jun-22	07-Aug-22	24-Jul-22	21-Sep-22	45
AS502160	E&M Installation of Sludge Dewatering System (S6)	180	26-Mar-22	21-Sep-22	05-Apr-22	01-Oct-22	10
Sludge Screening (SSc)							
AS502180	E&M Installation of Monorail LA-01-01	60	08-Aug-22	06-Oct-22	22-Sep-22	20-Nov-22	45
AS502200	E&M Installation of Sludge Screening System (S2)	135	11-Nov-22	25-Mar-23	21-Nov-22	04-Apr-23	10
AS502220	E&M Installation of External Sludge Transfer Pump (S21)	30	24-Feb-23	25-Mar-23	14-Mar-23	12-Apr-23	18
Sludge Thickening (STh)							
AS502260	E&M Installation of EOT Crane LA-01-03	90	11-Mar-22	08-Jun-22	26-Mar-22	23-Jun-22	15
AS502280	E&M Installation of Sludge Thickening System (S3)	180	14-Jun-22	10-Dec-22	24-Jun-22	20-Dec-22	10
Building Services							
AS502300	FS Installation - Conduits, Trunking, & Pipeworks	120	10-Mar-22	07-Jul-22	23-Jan-23	22-May-23	319
AS502320	FS Installation - Cable Laying, Termination, Associated Fitting & Field Devices	120	09-May-23	05-Sep-23	23-May-23	19-Sep-23	14
AS502340	BS Fitting Installation - Conduits, Trunking, & Ductworks	120	06-Sep-22	03-Jan-23	22-Oct-22	18-Feb-23	46



Activity ID	Activity Name	Original Duration	Early Start	Early Finish	Late Start	Late Finish	Total Float
AS502360	BS Fitting Installation - Cable Laying, Termination, Associated Fitting & Field Devices	120	08-Feb-23	07-Jun-23	19-Feb-23	18-Jun-23	11
AS502380	Installation of Control & Monitoring System	120	11-Dec-22	09-Apr-23	21-Dec-22	19-Apr-23	10
AS502400	Installation of CCTV System	120	11-Dec-22	09-Apr-23	21-Dec-22	19-Apr-23	10
AS502410	Installation of Gas Detection System	60	09-Apr-23	07-Jun-23	20-Apr-23	18-Jun-23	11
AS506500b	E&M Installation of Genset	180	10-Jan-22	08-Jul-22	29-May-22	24-Nov-22	139
Tx Rm							
AS502420	BS Fitting Intallation	90	26-Mar-22	23-Jun-22	02-Sep-22	30-Nov-22	160
AS502440	E&M Installation of 380V Transformers (S17)	90	08-Aug-22	05-Nov-22	01-Dec-22	28-Feb-23	115
LV Switchroom							
AS502460	BS Fitting Intallation	75	10-Jan-22	25-Mar-22	05-May-22	18-Jul-22	115
AS502480	E&M Installation of LVSB at G/F (S17)	90	11-Mar-22	08-Jun-22	04-Jul-22	01-Oct-22	115
AS502500	E&M Installation of LVSB at 1/F (S17)	90	10-May-22	07-Aug-22	02-Sep-22	30-Nov-22	115
AS502520	Ready for Energisation	5	06-Nov-22	10-Nov-22	01-Mar-23	05-Mar-23	115
Tx Rm & LV Switchroom (for UV)							
AS105120	BS Fitting Intallation (at Tx Rm & LV Switchroom)	60	25-May-22	23-Jul-22	04-Sep-22	02-Nov-22	102
AS105140	E&M Installation of Transfomers in Tx Rm	60	24-Jul-22	21-Sep-22	03-Nov-22	01-Jan-23	102
AS105160	E&M Installation of LVSB	60	22-Sep-22	20-Nov-22	02-Jan-23	02-Mar-23	102
AS105180	Ready for Permanet Power Energisation	3	21-Nov-22	23-Nov-22	03-Mar-23	05-Mar-23	102
Combined Heat & Power Building							
Combined Heat & Power Generation (CHP)							
AS503100	Mobilisation	14	24-Feb-22	09-Mar-22	03-Mar-22	16-Mar-22	7
AS503120	E&M Installation of EOT Crane No. 1	75	10-Mar-22	23-May-22	17-Mar-22	30-May-22	7
AS503140	E&M Installation of EOT Crane No. 2	75	24-Apr-22	07-Jul-22	05-Jun-22	18-Aug-22	42
AS503160	E&M Installation of CHP System (S8)	230	24-May-22	08-Jan-23	31-May-22	15-Jan-23	7
Building Services							
AS503180	FS Installation - Conduits, Trunking, & Pipeworks	120	10-Mar-22	07-Jul-22	27-Jun-22	24-Oct-22	109
AS503200	FS Installation - Cable Laying, Termination, Associated Fitting & Field Devices	90	08-Feb-23	08-May-23	22-Feb-23	22-May-23	14
AS503220	BS Fitting Installation - Conduits, Trunking, & Ductworks	180	10-Mar-22	05-Sep-22	25-Apr-22	21-Oct-22	46
AS503240	BS Fitting Installation - Cable Laying, Termination, Associated Fitting & Field Devices	90	10-Nov-22	07-Feb-23	21-Nov-22	18-Feb-23	11
AS503260	Installation of Control & Monitoring System	120	10-Dec-22	08-Apr-23	17-Dec-22	15-Apr-23	7
AS503280	Installation of CCTV System	90	10-Dec-22	09-Mar-23	05-Jan-23	04-Apr-23	26
AS503290	Installation of Gas Detection System	75	09-Jan-23	24-Mar-23	04-Feb-23	19-Apr-23	26
11kV Switchroom							
AS503300	BS Fitting Installation	60	10-Mar-22	08-May-22	21-Jun-22	19-Aug-22	103
AS503320	E&M Installation of 11kV Switchboard (S17)	75	09-May-22	22-Jul-22	06-Oct-22	19-Dec-22	150
AS503340	Main Cables Laying between 11kV SwitchRoom of CHP Bldg to Tx Rm of Workshop No.2	60	21-Jun-22	19-Aug-22	18-Nov-22	16-Jan-23	150
Tx Rm							
AS503360	BS Fitting Installation	60	09-May-22	07-Jul-22	20-Aug-22	18-Oct-22	103
AS503380	E&M Installation of 11kV Transfomers (S17)	60	23-Jul-22	20-Sep-22	18-Dec-22	15-Feb-23	148
LV Switchroom							
AS503400	BS Fitting Intallation	60	08-Jul-22	05-Sep-22	19-Oct-22	17-Dec-22	103
AS503420	E&M Installation of LVSB at 1/F (S17)	90	06-Sep-22	04-Dec-22	18-Dec-22	17-Mar-23	103
AS503440	Ready for Energisation	3	05-Dec-22	07-Dec-22	18-Mar-23	20-Mar-23	103
Sludge Digesters & Distribution Chamber							
Sludge Digestion (SDi)							
AS503500	FRP Walkway / Cover Installation	120	05-Jan-22	04-May-22	13-Jan-22	12-May-22	8
AS503600	E&M Installation of Sludge Digestion System (S5)	230	05-May-22	20-Dec-22	13-May-22	28-Dec-22	8
Workshop No. 2							
AS504000	Mobilisation	14	27-Sep-21	10-Oct-21	22-Feb-22	07-Mar-22	148
CLP Substation							
AS504100	BS Fitting Intallation (at CLP Sub-station in Workshop No.2)	60	11-Oct-21	09-Dec-21	08-Mar-22	06-May-22	148
AS509940a	Inspections, Rectification & H/O to CLP	60	10-Dec-21	07-Feb-22	08-Jul-22	05-Sep-22	210
AS509960	E&M Installation of HV Transformer (By CLP)	180	08-Feb-22	06-Aug-22	06-Sep-22	04-Mar-23	210
AS509980	Energisation (By CLP)	1	07-Aug-22	07-Aug-22	05-Mar-23	05-Mar-23	210
11kV HV Switchroom							
AS504200	BS Fitting Intallation	60	10-Nov-21	08-Jan-22	07-Apr-22	05-Jun-22	148

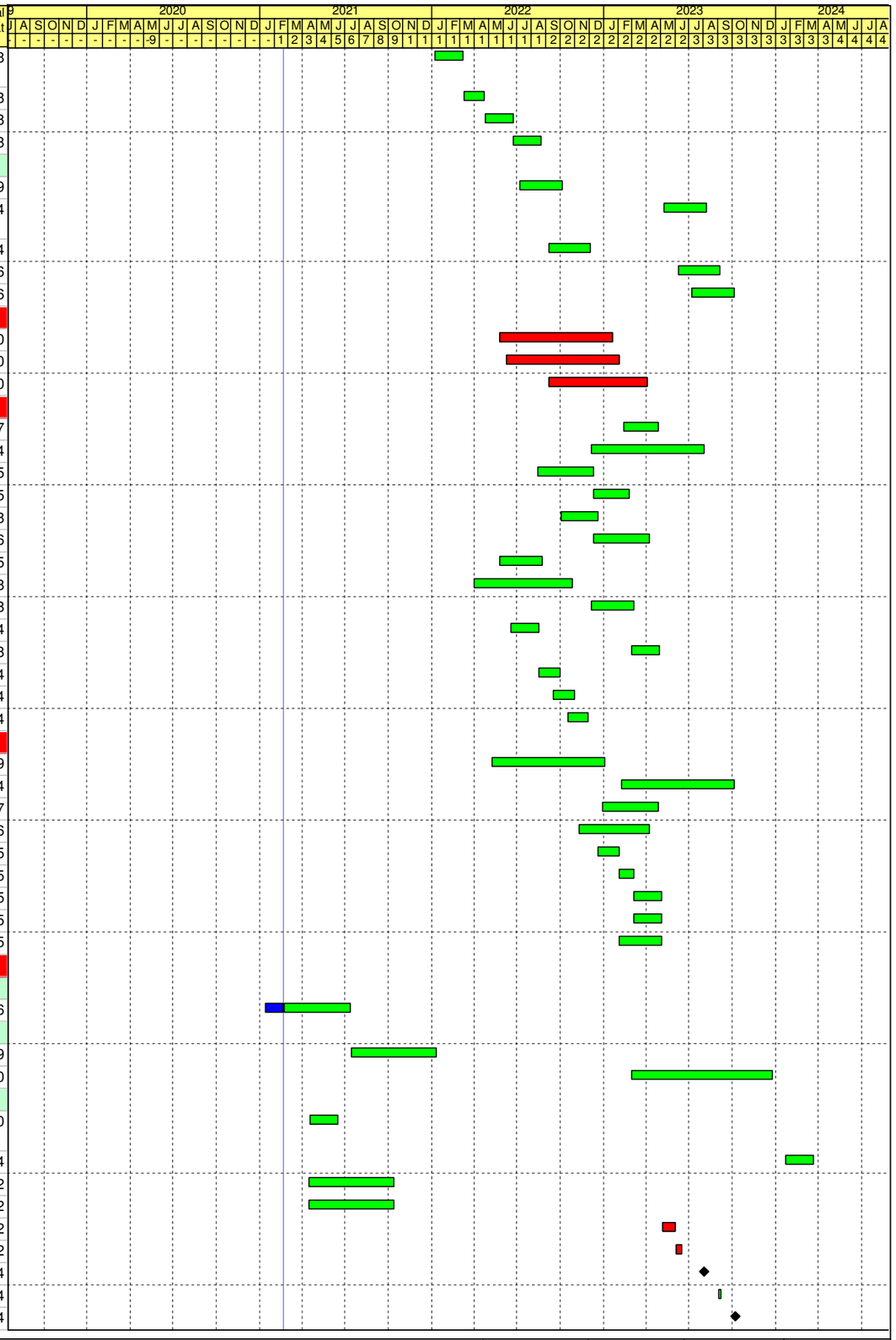


Remaining Work
Critical Activity
Milestone
Actual Progress

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
Revised Programme - as at 20 Feb 2021

Date	Revision	Checked	Approved
30-Oct-20	Rev.3	LT	KM
02-Dec-20	Rev.4	LT	KM
30-Dec-20	Rev.5	LT	KM
26-Jan-21	Rev.6	LT	KM
26-Feb-21	Rev.7	LT	KM

Activity ID	Activity Name	Original Duration	Early Start	Early Finish	Late Start	Late Finish	Total Float
AS504240	E&M Installation of 11kV HVSB (at Workshop No.2)	60	09-Jan-22	09-Mar-22	06-Jun-22	04-Aug-22	148
AS504260	Main Cables Laying between Workshop No.2 & Tx Rm for UV System No.1	45	10-Mar-22	23-Apr-22	05-Aug-22	18-Sep-22	148
AS504280	Main Cables Laying between Workshop No.2 & Tx Rm for Sludge Dewatering Bldg	60	24-Apr-22	22-Jun-22	19-Sep-22	17-Nov-22	148
AS504300	Main Cables Laying between Workshop No.2 & Tx Rm for CHP Bldg	60	23-Jun-22	21-Aug-22	18-Nov-22	16-Jan-23	148
Building Services							
AS504400a	FS Installation - Conduits, Trunking, & Pipeworks	90	08-Jul-22	05-Oct-22	23-Apr-23	21-Jul-23	289
AS504410a	FS Installation - Cable Laying, Termination, Associated Fitting & Field Devices	90	09-May-23	06-Aug-23	22-Jul-23	19-Oct-23	74
AS504420a	BS Fitting Installation - Conduits, Trunking, & Ductworks	90	06-Sep-22	04-Dec-22	07-Feb-23	07-May-23	154
AS504430a	BS Fitting Installation - Cable Laying, Termination, Associated Fitting & Field Devices	90	08-Jun-23	05-Sep-23	14-Jul-23	11-Oct-23	36
AS504450	Installation of CCTV System	90	08-Jul-23	05-Oct-23	13-Aug-23	10-Nov-23	36
Biogas Storage & Pre-Treatment (BSPT)							
AS504500	E&M Installation of Biogas Storage Tank 1	240	25-May-22	19-Jan-23	25-May-22	19-Jan-23	0
AS504520	E&M Installation of Biogas Storage Tank 2	240	09-Jun-22	03-Feb-23	09-Jun-22	03-Feb-23	0
AS504540	E&M Installation of Biogas Storage Tank 3	210	07-Sep-22	04-Apr-23	07-Sep-22	04-Apr-23	0
Miscellaneous							
AS106300	Installation of Control & Monitoring System - UV	75	12-Feb-23	27-Apr-23	31-Mar-23	13-Jun-23	47
AS504460	Installation of Lift	240	05-Dec-22	01-Aug-23	08-May-23	02-Jan-24	154
AS505000	E&M Installation of THP System (S4)	120	13-Aug-22	10-Dec-22	07-Oct-22	03-Feb-23	55
AS505100	E&M Installation of Thickened Sludge Feed Pipe to THP System	75	11-Dec-22	23-Feb-23	05-Jan-23	20-Mar-23	25
AS505200	E&M Installation of H2S Removal System (S7)	80	02-Oct-22	20-Dec-22	10-Oct-22	28-Dec-22	8
AS505300	E&M Installation of Waste Gas Burning System (S9)	120	10-Dec-22	08-Apr-23	05-Jan-23	04-May-23	26
AS505400	E&M Installation of Plant Service Water System (S12)	90	25-May-22	22-Aug-22	04-Feb-23	04-May-23	255
AS505600	E&M Installation of SAS Pumping System (S14)	210	31-Mar-22	26-Oct-22	18-May-22	13-Dec-22	48
AS505700	E&M Installation of DO System (S21)	90	06-Dec-22	05-Mar-23	14-Dec-22	13-Mar-23	8
AS506000	E&M Installation of Sewage Pump (S21)	60	18-Jun-22	16-Aug-22	02-Jul-22	30-Aug-22	14
AS506100	E&M Installation of THP Cooling Pump (S21)	60	02-Mar-23	30-Apr-23	10-Mar-23	08-May-23	8
AS506200	E&M Installation of Ferric Chloride Storage Tank (S21)	45	17-Aug-22	30-Sep-22	31-Aug-22	14-Oct-22	14
AS506300	E&M Installation of Ferric Chloride Dosing Pump (S21)	45	16-Sep-22	30-Oct-22	30-Sep-22	13-Nov-22	14
AS506400	E&M Installation of Temporary Primary Sludge Pump (S21)	45	16-Oct-22	29-Nov-22	30-Oct-22	13-Dec-22	14
Building Services							
AS507000	FS Installation - Conduits, Trunking, & Pipeworks	240	09-May-22	03-Jan-23	26-Aug-22	22-Apr-23	109
AS507100	FS Installation - Cable Laying, Termination, Associated Fitting & Field Devices	240	08-Feb-23	05-Oct-23	22-Feb-23	19-Oct-23	14
AS507200	Installation of Control & Monitoring System	120	29-Dec-22	27-Apr-23	05-Jan-23	04-May-23	7
AS507300	Installation of CCTV System	150	10-Nov-22	08-Apr-23	06-Dec-22	04-May-23	26
AS507700	BS Installation for Sludge Digester	45	21-Dec-22	03-Feb-23	04-Feb-23	20-Mar-23	45
AS507800	BS Installation for THP Facilities	30	04-Feb-23	05-Mar-23	20-Apr-23	19-May-23	75
AS507900	BS Installation for Biogas Holding Tanks	60	06-Mar-23	04-May-23	21-Mar-23	19-May-23	15
AS508000	BS Installation for Sewage Pumping Station	60	06-Mar-23	04-May-23	21-Mar-23	19-May-23	15
AS508100	BS Installation for Other Facilities	90	04-Feb-23	04-May-23	19-Feb-23	19-May-23	15
Statutory Submission / Inspection							
CLP Submission							
AS512375f	Submission & Approval of Electrical Schematic Wiring Diagram to CLP	180	14-Jan-21 A	12-Jul-21	04-Dec-21	24-Apr-22	286
EPD Submission / Inspection							
AS509500a	EPD Submission & Approval for Air Pollution Control - Genset	180	14-Jul-21	09-Jan-22	30-Nov-21	28-May-22	139
AS509520a	EPD Submission & Approval for Air Pollution Control - CHP, CAPC, Flare	300	01-Mar-23*	25-Dec-23	31-Mar-23	24-Jan-24	30
EMSD Submission / Inspection							
AS509370b	BEEO Stage one: Submit EE1 & EE-SU to EMSD	60	18-Apr-21	16-Jun-21	24-Dec-21	21-Feb-22	250
AS509375f	BEEO Stage two: Submit EE2 & EE-SU to EMSD	60	22-Jan-24	21-Mar-24	05-Feb-24	04-Apr-24	14
AS509380b	Application & Approval of the Zone Classification of Hazardous Area - including Fire Risk Asse	180	16-Apr-21	12-Oct-21	09-Nov-22	07-May-23	572
AS509400a	Application for Construction Approval of Notifiable Gas Installation (Form 104)	180	16-Apr-21	12-Oct-21	09-Nov-22	07-May-23	572
AS509420a	Application for Approval of Use of Notifiable Gas Installation (Form 105)	28	06-May-23	02-Jun-23	08-May-23	04-Jun-23	2
AS509440a	EMSD Inspection - Gas Holding Tanks	14	03-Jun-23	16-Jun-23	05-Jun-23	18-Jun-23	2
AS509450f	Form 5 Submission to EMSD - Lift Installation	0	02-Aug-23		03-Jan-24		154
AS509460f	EMSD Inspection - Lift Installation	7	01-Sep-23	07-Sep-23	02-Feb-24	08-Feb-24	154
AS509470f	Issuance of Form 6 - Lift Installation	0		07-Oct-23		09-Mar-24	154

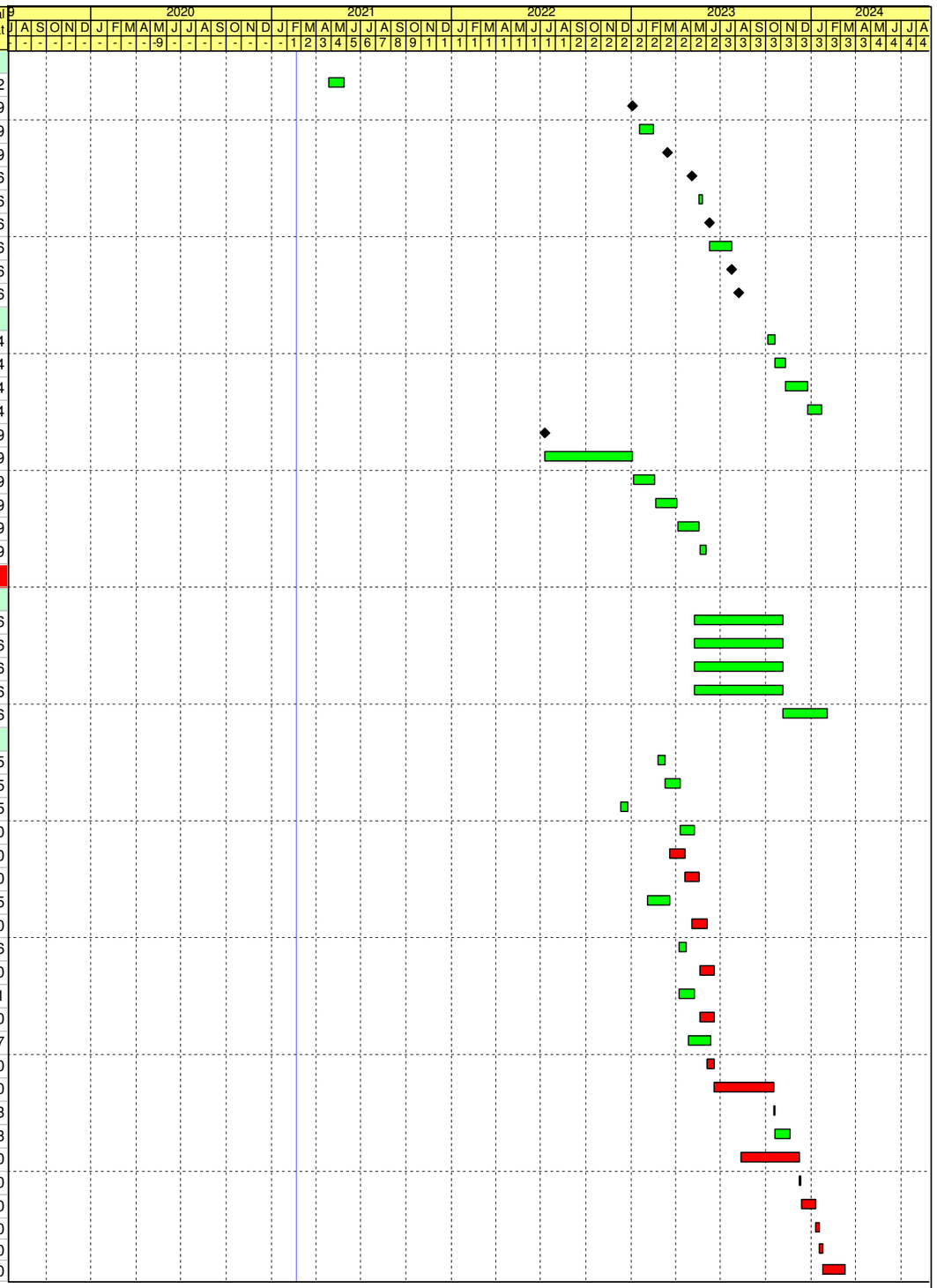


Remaining Work
Critical Activity
Milestone
Actual Progress

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
Revised Programme - as at 20 Feb 2021

Date	Revision	Checked	Approved
30-Oct-20	Rev.3	LT	KM
02-Dec-20	Rev.4	LT	KM
30-Dec-20	Rev.5	LT	KM
26-Jan-21	Rev.6	LT	KM
26-Feb-21	Rev.7	LT	KM

Activity ID	Activity Name	Original Duration	Early Start	Early Finish	Late Start	Late Finish	Total Float
WSD Submission / Inspection							
AS509300	Submit WWO46 Part I / II to WSD (FS/PD)	30	28-Apr-21	27-May-21	27-Sep-21	26-Oct-21	152
AS509340	Submit WWO46 Part IV to WSD (FS)	0	04-Jan-23		11-Aug-23		219
AS509360	WSD Inspection (FS)	28	18-Jan-23	14-Feb-23	25-Aug-23	21-Sep-23	219
AS509362b	Issuance of FS Water Certificate	0		14-Mar-23		19-Oct-23	219
AS509370f	Submit WWO46 Part IV to WSD (PD)	0	05-May-23		07-Dec-23		216
AS509380f	WSD Inspection	7	19-May-23	25-May-23	21-Dec-23	27-Dec-23	216
AS509390f	Issuance of Form WWO46 Part Va	0		08-Jun-23		10-Jan-24	216
AS509400f	System Flushing / Sampling	45	09-Jun-23	23-Jul-23	11-Jan-24	24-Feb-24	216
AS509410f	Issuance of Form WWO46 Part Vb	0		23-Jul-23		24-Feb-24	216
AS509420f	Issuance of Water Certificate	0		06-Aug-23		09-Mar-24	216
FSD Submission / Inspection							
AS509120	Prepare & Submit FSI/314 & FSI/501	14	06-Oct-23	19-Oct-23	20-Oct-23	02-Nov-23	14
AS509120a	FSD Review & Approval of FSI/314 & FSI/501	21	20-Oct-23	09-Nov-23	03-Nov-23	23-Nov-23	14
AS509140a	F.S. Inspection, Defects Rectification & Re-inspection	45	10-Nov-23	24-Dec-23	24-Nov-23	07-Jan-24	14
AS509200	Issuance of Acceptance Letter	28	25-Dec-23	21-Jan-24	08-Jan-24	04-Feb-24	14
AS509220	Application of D.G. Licence	0	09-Jul-22		25-Nov-22		139
AS509240	Processing of D.G. Licence Application	180	09-Jul-22	04-Jan-23	25-Nov-22	23-May-23	139
AS509250b	Apply for D.G. Inspection	45	05-Jan-23	18-Feb-23	24-May-23	07-Jul-23	139
AS509260	D.G. Inspection, Defects Rectification & Re-inspection (Ventilation Division)	45	19-Feb-23	04-Apr-23	08-Jul-23	21-Aug-23	139
AS509280b	D.G. Inspection, Defects Rectification & Re-inspection (DG Division)	45	05-Apr-23	19-May-23	22-Aug-23	05-Oct-23	139
AS509300b	Issue D.G. Licence	14	20-May-23	02-Jun-23	06-Oct-23	19-Oct-23	139
Testing & Commissioning							
T&C of Control Monitoring System							
AS512380f	SAT of SCADA System	180	09-May-23	04-Nov-23	14-Jun-23	10-Dec-23	36
AS512390f	SAT of PMS	180	09-May-23	04-Nov-23	14-Jun-23	10-Dec-23	36
AS512400f	SAT of CMMS	180	09-May-23	04-Nov-23	14-Jun-23	10-Dec-23	36
AS512410f	SAT of IDMS	180	09-May-23	04-Nov-23	14-Jun-23	10-Dec-23	36
AS512420f	Overall Testing for Whole System	90	05-Nov-23	02-Feb-24	11-Dec-23	09-Mar-24	36
T&C of E&M Process							
AS510100	SAT of THP System	15	24-Feb-23	10-Mar-23	21-Mar-23	04-Apr-23	25
AS510200a	System Commissioning Tests for THP System	30	11-Mar-23	09-Apr-23	05-Apr-23	04-May-23	25
AS510300	SAT for Sludge Dewatering System	15	11-Dec-22	25-Dec-22	06-Mar-23	20-Mar-23	85
AS510400	System Commissioning Tests for Sludge Dewatering System	30	10-Apr-23	09-May-23	20-Apr-23	19-May-23	10
AS510500	SAT for Biogas Storage System	30	21-Mar-23	19-Apr-23	21-Mar-23	19-Apr-23	0
AS510600	System Commissioning Tests for Biogas Storage System	30	20-Apr-23	19-May-23	20-Apr-23	19-May-23	0
AS510700	SAT for Sludge Digestion System	45	04-Feb-23	20-Mar-23	21-Mar-23	04-May-23	45
AS510800	System Commissioning Tests for Sludge Digestion System	30	05-May-23	03-Jun-23	05-May-23	03-Jun-23	0
AS510900	SAT for Gas Burning System	15	09-Apr-23	23-Apr-23	05-May-23	19-May-23	26
AS511000	System Commissioning Tests for Gas Burning System	30	20-May-23	18-Jun-23	20-May-23	18-Jun-23	0
AS511100	SAT for CHP System	30	09-Apr-23	08-May-23	20-Apr-23	19-May-23	11
AS511200	System Commissioning Tests for CHP System	30	20-May-23	18-Jun-23	20-May-23	18-Jun-23	0
AS511300b	SAT & System Commissioning Tests for Other Facilities	45	28-Apr-23	11-Jun-23	05-May-23	18-Jun-23	7
AS512100	Seeding	14	05-Jun-23	18-Jun-23	05-Jun-23	18-Jun-23	0
AS512200a	Process Start Up - Digester 1	120	19-Jun-23	16-Oct-23	19-Jun-23	16-Oct-23	0
AS512300a	Notice to Commence Phase 1 System Commissioning - Digester 1	3	17-Oct-23	19-Oct-23	09-Dec-23	11-Dec-23	53
AS512400a	Phase 1 System Commissioning - Digester 1	30	20-Oct-23	18-Nov-23	12-Dec-23	10-Jan-24	53
AS512500a	Process Start Up - Digester 2	120	11-Aug-23	08-Dec-23	11-Aug-23	08-Dec-23	0
AS512600a	Notice to Commence Phase 1 System Commissioning - Digester 2	3	09-Dec-23	11-Dec-23	09-Dec-23	11-Dec-23	0
AS512700a	Phase 1 System Commissioning - Digester 2	30	12-Dec-23	10-Jan-24	12-Dec-23	10-Jan-24	0
AS512800a	Phase 2 System Commissioning - Digester 1 & 2	7	11-Jan-24	17-Jan-24	11-Jan-24	17-Jan-24	0
AS512900a	Notice to Commence Plant Commissioning	7	18-Jan-24	24-Jan-24	18-Jan-24	24-Jan-24	0
AS513000a	Plant Commissioning Tests	45	25-Jan-24	09-Mar-24	25-Jan-24	09-Mar-24	0

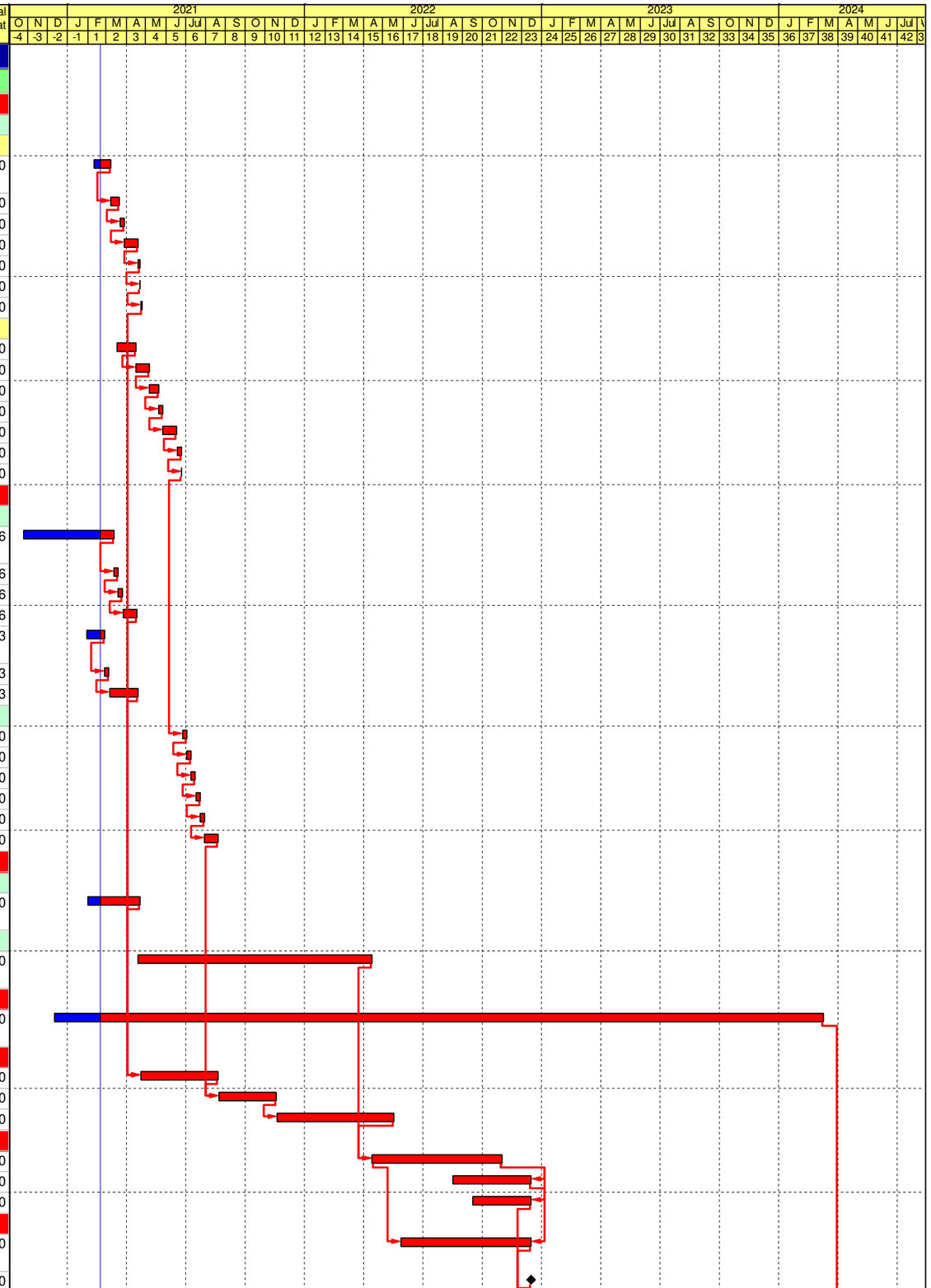


Remaining Work
Critical Activity
Milestone
Actual Progress

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
Revised Programme - as at 20 Feb 2021

Date	Revision	Checked	Approved
30-Oct-20	Rev.3	LT	KM
02-Dec-20	Rev.4	LT	KM
30-Dec-20	Rev.5	LT	KM
26-Jan-21	Rev.6	LT	KM
26-Feb-21	Rev.7	LT	KM

Activity ID	Activity Name	Original Duration	Early Start	Early Finish	Late Start	Late Finish	Total Float
SWH - Main Works Stage 1 Sidestream Treatment Facilities & E&M Works for Sludge Treatment Facilities							
Section 3 - Complete Design, Construction & T&C for Sidestream Facilities							
Major Subcontractor / Supplier Procurement							
Civil & Building Contractor							
For Piling							
AS512520f	Review & Accept the Tender proprosal of Civil Contractor (Piling)	25	11-Feb-21 A	07-Mar-21	21-Feb-21	07-Mar-21	0
AS512530f	Tender Invitation of Civil Contractor (Piling)	14	08-Mar-21	21-Mar-21	08-Mar-21	21-Mar-21	0
AS512540f	Submission of Tender Report	7	22-Mar-21	28-Mar-21	22-Mar-21	28-Mar-21	0
AS512550f	Review & Accept the Tender Report by PM	21	29-Mar-21	18-Apr-21	29-Mar-21	18-Apr-21	0
AS512560f	Contract Preparation	3	19-Apr-21	21-Apr-21	19-Apr-21	21-Apr-21	0
AS512570f	Civil Contractor (Piling) Award	1	22-Apr-21	22-Apr-21	22-Apr-21	22-Apr-21	0
AS512580f	Mobilisation	3	23-Apr-21	25-Apr-21	23-Apr-21	25-Apr-21	0
For Main Civil Works							
AS512590f	Submit Tender proprosal of Civil Contractor (Main Civil Works)	30	17-Mar-21*	15-Apr-21	17-Mar-21	15-Apr-21	0
AS512600f	Review & Accept the Tender proprosal of Civil Contractor (Main Civil Works)	21	16-Apr-21	06-May-21	16-Apr-21	06-May-21	0
AS512610f	Tender Invitation of Civil Contractor (Main Civil Works)	14	07-May-21	20-May-21	07-May-21	20-May-21	0
AS512620f	Submission of Tender Report	7	21-May-21	27-May-21	21-May-21	27-May-21	0
AS512630f	Review & Accept the Tender Report by PM	21	28-May-21	17-Jun-21	28-May-21	17-Jun-21	0
AS512640f	Contract Preparation	7	18-Jun-21	24-Jun-21	18-Jun-21	24-Jun-21	0
AS512650f	Civil Contractor (Main Civil Works) Award	1	25-Jun-21	25-Jun-21	25-Jun-21	25-Jun-21	0
Design & Submission							
Civil / Structural							
AS160260e	Revise & Re-submit Loading Plan to ICE	65	24-Oct-20 A	12-Mar-21	27-Feb-21	18-Mar-21	6
AS160270e	Review & Accept of Loading Plan by ICE	7	13-Mar-21	19-Mar-21	19-Mar-21	25-Mar-21	6
AS160280e	Prepare & Submit Loading Plan to PM	7	20-Mar-21	26-Mar-21	26-Mar-21	01-Apr-21	6
AS160290e	Review & Accept of Loading Plan by PM & DSD (incl. BCM)	21	27-Mar-21	16-Apr-21	02-Apr-21	22-Apr-21	6
AS160330	Review & Accept of Foundation Design / Drawings by ICE & PM	10	30-Jan-21 A	26-Feb-21	24-Feb-21	01-Mar-21	3
AS160340e	Prepare & Submit Foundation Design / Drawings to DSD (incl. BCM)	7	27-Feb-21	05-Mar-21	02-Mar-21	08-Mar-21	3
AS160350e	Review & Accept of Foundation Design / Drawings by DSD (incl. BCM)	45	06-Mar-21	19-Apr-21	09-Mar-21	22-Apr-21	3
ELS							
AS512160e	Prepare & Submit ELS Plan to ICE	7	26-Jun-21	02-Jul-21	26-Jun-21	02-Jul-21	0
AS512170e	Review & Comment on ELS Plan by ICE	7	03-Jul-21	09-Jul-21	03-Jul-21	09-Jul-21	0
AS512180e	Revise & Re-submit ELS Plan to ICE	7	10-Jul-21	16-Jul-21	10-Jul-21	16-Jul-21	0
AS512190e	Review & Accept of ELS Plan by ICE	7	17-Jul-21	23-Jul-21	17-Jul-21	23-Jul-21	0
AS512200e	Prepare & Submit ELS Plan to PM	7	24-Jul-21	30-Jul-21	24-Jul-21	30-Jul-21	0
AS512210e	Review & Accept of ELS Plan by PM	21	31-Jul-21	20-Aug-21	31-Jul-21	20-Aug-21	0
Major Plant & Materials Procurement							
Civil & Structure							
AS153130e	Procurement, Manufacture & Delivery of Piling	45	01-Feb-21 A	22-Apr-21	29-Mar-21	22-Apr-21	0
E&M Process							
AS153100	Procurement, Manufacture & Delivery of Deammonification Sidestream Treatment Facilities	360	19-Apr-21	13-Apr-22	19-Apr-21	13-Apr-22	0
Ground Settlement, Tilting & Utility Monitoring							
AS153200f	Ground Settlement, Tilting & Utility Monitoring	1184	12-Dec-20 A	09-Mar-24	21-Feb-21	09-Mar-24	0
Civil Works Construction							
AS161140	Foundation / Pilings (inc. pre-drilling, post-drilling, proof test, etc)	120	23-Apr-21	20-Aug-21	23-Apr-21	20-Aug-21	0
AS161160	Excavation / ELS	90	21-Aug-21	18-Nov-21	21-Aug-21	18-Nov-21	0
AS161180	Substructure / Superstructure	180	19-Nov-21	17-May-22	19-Nov-21	17-May-22	0
E&M Installation							
AS154100	E&M Installation of Deammonification Sidestream Treatment Facilities	200	14-Apr-22	30-Oct-22	14-Apr-22	30-Oct-22	0
AS154240	Installation of Control & Monitoring System	120	17-Aug-22	14-Dec-22	17-Aug-22	14-Dec-22	0
AS154260	Installation of CCTV System	90	16-Sep-22	14-Dec-22	16-Sep-22	14-Dec-22	0
Testing & Commissioning							
AS155100	SAT for Deammonification Sidestream Treatment Facilities (Ref. to PS6B.1.18.3)	200	29-May-22	14-Dec-22	29-May-22	14-Dec-22	0
AS155105e	Existing sludge dewatering facilities Ready (by DE/2018/04 Contract)	0		14-Dec-22		14-Dec-22	0



JEC

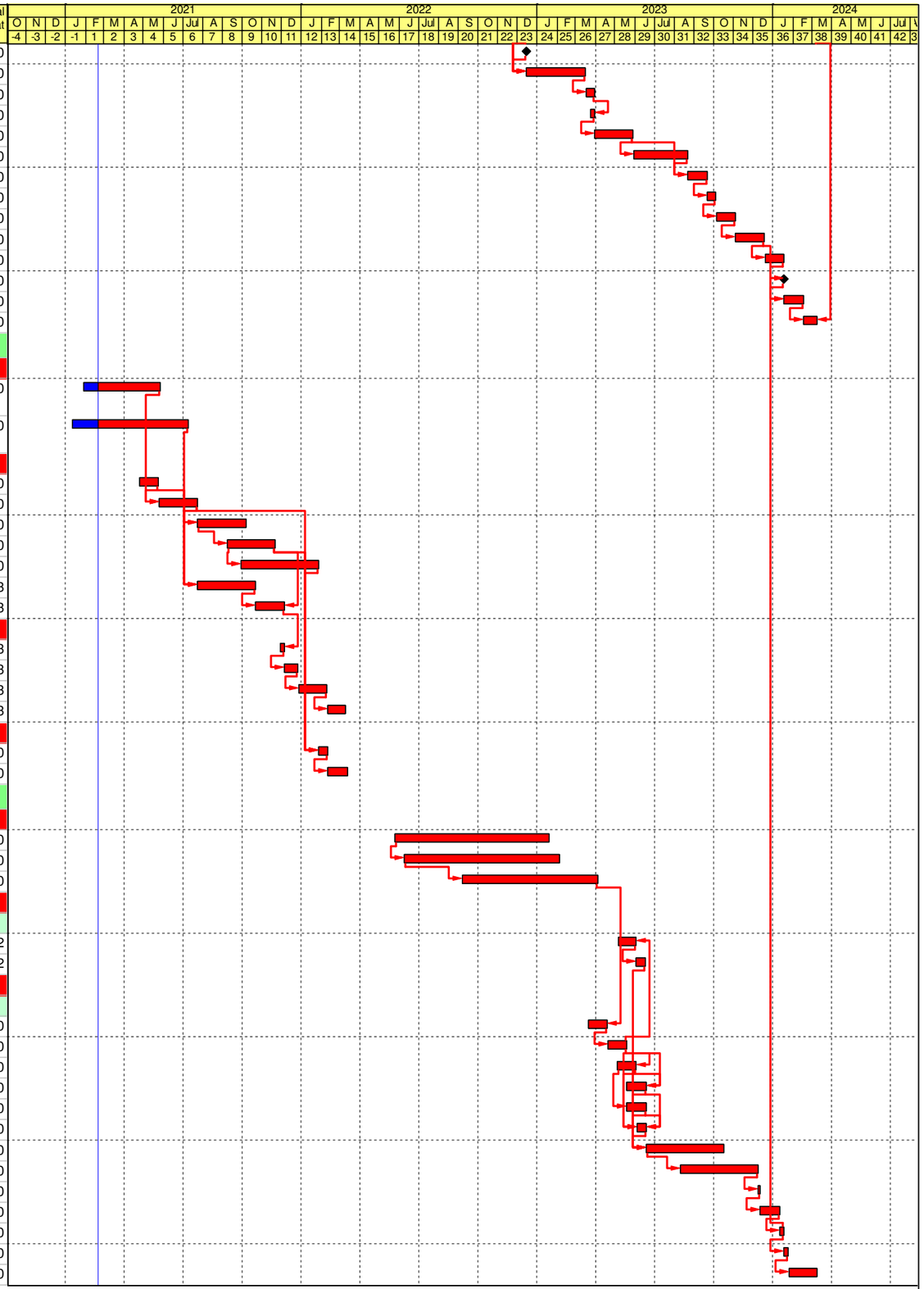
File Name: DE/2018/03 RP R7
Layout: DE1803 RP (Feb 2021) - CP
Page 1 of 2

Remaining Work
Critical Activity
Milestone
Actual Progress

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
Revised Programme - as at 20 Feb 2021 (Critical Path)

Date	Revision	Checked	Approved
30-Oct-20	Rev.3	LT	KM
02-Dec-20	Rev.4	LT	KM
30-Dec-20	Rev.5	LT	KM
26-Jan-21	Rev.6	LT	KM
26-Feb-21	Rev.7	LT	KM

Activity ID	Activity Name	Original Duration	Early Start	Early Finish	Late Start	Late Finish	Total Float
AS155110e	Plant service water from zone B/C Ready (Zone B by DE/2018/04 Contract)	0		14-Dec-22		14-Dec-22	0
AS155120a	Process Start Up	92	15-Dec-22	16-Mar-23	15-Dec-22	16-Mar-23	0
AS155140a	Submission & Acceptance of Process Start Up Report	14	17-Mar-23	30-Mar-23	17-Mar-23	30-Mar-23	0
AS155160a	Notice for Commencement of Phase 1 Commissioning Tests	7	24-Mar-23	30-Mar-23	24-Mar-23	30-Mar-23	0
AS155200	Phase 1 Commissioning Tests	60	31-Mar-23	29-May-23	31-Mar-23	29-May-23	0
AS155210e	Phase 1 Re-commissioning Tests (If Failure)	84	30-May-23	21-Aug-23	30-May-23	21-Aug-23	0
AS155220a	Submission & Acceptance of Phase 1 Commissioning Tests Report	30	22-Aug-23	20-Sep-23	22-Aug-23	20-Sep-23	0
AS155240a	Phase 1 Post Commissioning	14	21-Sep-23	04-Oct-23	21-Sep-23	04-Oct-23	0
AS155260a	Submission & Acceptance of Phase 1 Post Commissioning Report	30	05-Oct-23	03-Nov-23	05-Oct-23	03-Nov-23	0
AS155300	Phase 2 Commissioning Tests	45	04-Nov-23	18-Dec-23	04-Nov-23	18-Dec-23	0
AS155320a	Submission & Acceptance of Phase 2 Commissioning Tests Report	30	19-Dec-23	17-Jan-24	19-Dec-23	17-Jan-24	0
AS155330e	Commissioning of new Anaerobic Digesters (2 nos.) in Zone C Finished	0		17-Jan-24		17-Jan-24	0
AS155340a	Phase 3 Commissioning Tests	30	18-Jan-24	16-Feb-24	18-Jan-24	16-Feb-24	0
AS155360a	Submission & Acceptance of Phase 3 Commissioning Tests Report	22	17-Feb-24	09-Mar-24	17-Feb-24	09-Mar-24	0
Section 4 - Complete Construction & T&C for UV System No.1 & EP Station No. 1							
Major Plant & Materials Fabrication & Delivery							
AS104180	Fabrication & Delivery of EOT Cranes (2T & 5T) (S19)	120	28-Jan-21 A	27-May-21	21-Feb-21	27-May-21	0
AS104300	Fabrication & Delivery of Pipeworks & Associated Valves	180	11-Jan-21 A	09-Jul-21	21-Feb-21	09-Jul-21	0
E&M Installation							
AS106100	Mobilisation	30	25-Apr-21	24-May-21	25-Apr-21	24-May-21	0
AS106120	E&M Installation of EOT Cranes (5T)	60	25-May-21	23-Jul-21	25-May-21	23-Jul-21	0
AS106160	E&M Installation of Lift-up Pumps & Associated Pipeworks / Valves	75	24-Jul-21	06-Oct-21	24-Jul-21	06-Oct-21	0
AS106180	E&M Installation of Transfer Pumps & Associated Pipeworks / Valves	75	08-Sep-21	21-Nov-21	08-Sep-21	21-Nov-21	0
AS106210	E&M Installation of UV System	120	29-Sep-21	26-Jan-22	29-Sep-21	26-Jan-22	0
AS106220	FS Installation - Conduits, Trunking, & Pipeworks	90	24-Jul-21	21-Oct-21	27-Jul-21	24-Oct-21	3
AS106240	FS Installation - Cable Laying, Termination, Associated Fitting & Field Devices	45	22-Oct-21	05-Dec-21	25-Oct-21	08-Dec-21	3
Statutory Submission / Inspection (FSD)							
AS107100	Prepare & Submit FS/314, FS/501 & FS/501a	7	29-Nov-21	05-Dec-21	02-Dec-21	08-Dec-21	3
AS107110a	FSD Review & Approval of FS/314, FS/501 & FS/501a	21	06-Dec-21	26-Dec-21	09-Dec-21	29-Dec-21	3
AS107200	F.S. Inspection, Defects Rectification & Re-inspection	45	27-Dec-21	09-Feb-22	30-Dec-21	12-Feb-22	3
AS107300	Issuance of Acceptance Letter	28	10-Feb-22	09-Mar-22	13-Feb-22	12-Mar-22	3
Testing & Commissioning							
AS107400	SAT for UV System No. 1 & Effluent Transfer Pumping Station No. 1	15	27-Jan-22	10-Feb-22	27-Jan-22	10-Feb-22	0
AS107500	System Commissioning Tests	30	11-Feb-22	12-Mar-22	11-Feb-22	12-Mar-22	0
Section 5 - Complete all remaining Works (incl. T&C)							
Biogas Storage & Pre-Treatment (BSPT)							
AS504500	E&M Installation of Biogas Storage Tank 1	240	25-May-22	19-Jan-23	25-May-22	19-Jan-23	0
AS504520	E&M Installation of Biogas Storage Tank 2	240	09-Jun-22	03-Feb-23	09-Jun-22	03-Feb-23	0
AS504540	E&M Installation of Biogas Storage Tank 3	210	07-Sep-22	04-Apr-23	07-Sep-22	04-Apr-23	0
Statutory Submission / Inspection							
EMSD Submission / Inspection							
AS509420a	Application for Approval of Use of Notifiable Gas Installation (Form 105)	28	06-May-23	02-Jun-23	08-May-23	04-Jun-23	2
AS509440a	EMSD Inspection - Gas Holding Tanks	14	03-Jun-23	16-Jun-23	05-Jun-23	18-Jun-23	2
Testing & Commissioning							
T&C of E&M Process							
AS510500	SAT for Biogas Storage System	30	21-Mar-23	19-Apr-23	21-Mar-23	19-Apr-23	0
AS510600	System Commissioning Tests for Biogas Storage System	30	20-Apr-23	19-May-23	20-Apr-23	19-May-23	0
AS510800	System Commissioning Tests for Sludge Digestion System	30	05-May-23	03-Jun-23	05-May-23	03-Jun-23	0
AS511000	System Commissioning Tests for Gas Burning System	30	20-May-23	18-Jun-23	20-May-23	18-Jun-23	0
AS511200	System Commissioning Tests for CHP System	30	20-May-23	18-Jun-23	20-May-23	18-Jun-23	0
AS512100	Seeding	14	05-Jun-23	18-Jun-23	05-Jun-23	18-Jun-23	0
AS512200a	Process Start Up - Digester 1	120	19-Jun-23	16-Oct-23	19-Jun-23	16-Oct-23	0
AS512500a	Process Start Up - Digester 2	120	11-Aug-23	08-Dec-23	11-Aug-23	08-Dec-23	0
AS512600a	Notice to Commence Phase 1 System Commissioning - Digester 2	3	09-Dec-23	11-Dec-23	09-Dec-23	11-Dec-23	0
AS512700a	Phase 1 System Commissioning - Digester 2	30	12-Dec-23	10-Jan-24	12-Dec-23	10-Jan-24	0
AS512800a	Phase 2 System Commissioning - Digester 1 & 2	7	11-Jan-24	17-Jan-24	11-Jan-24	17-Jan-24	0
AS512900a	Notice to Commence Plant Commissioning	7	18-Jan-24	24-Jan-24	18-Jan-24	24-Jan-24	0
AS513000a	Plant Commissioning Tests	45	25-Jan-24	09-Mar-24	25-Jan-24	09-Mar-24	0

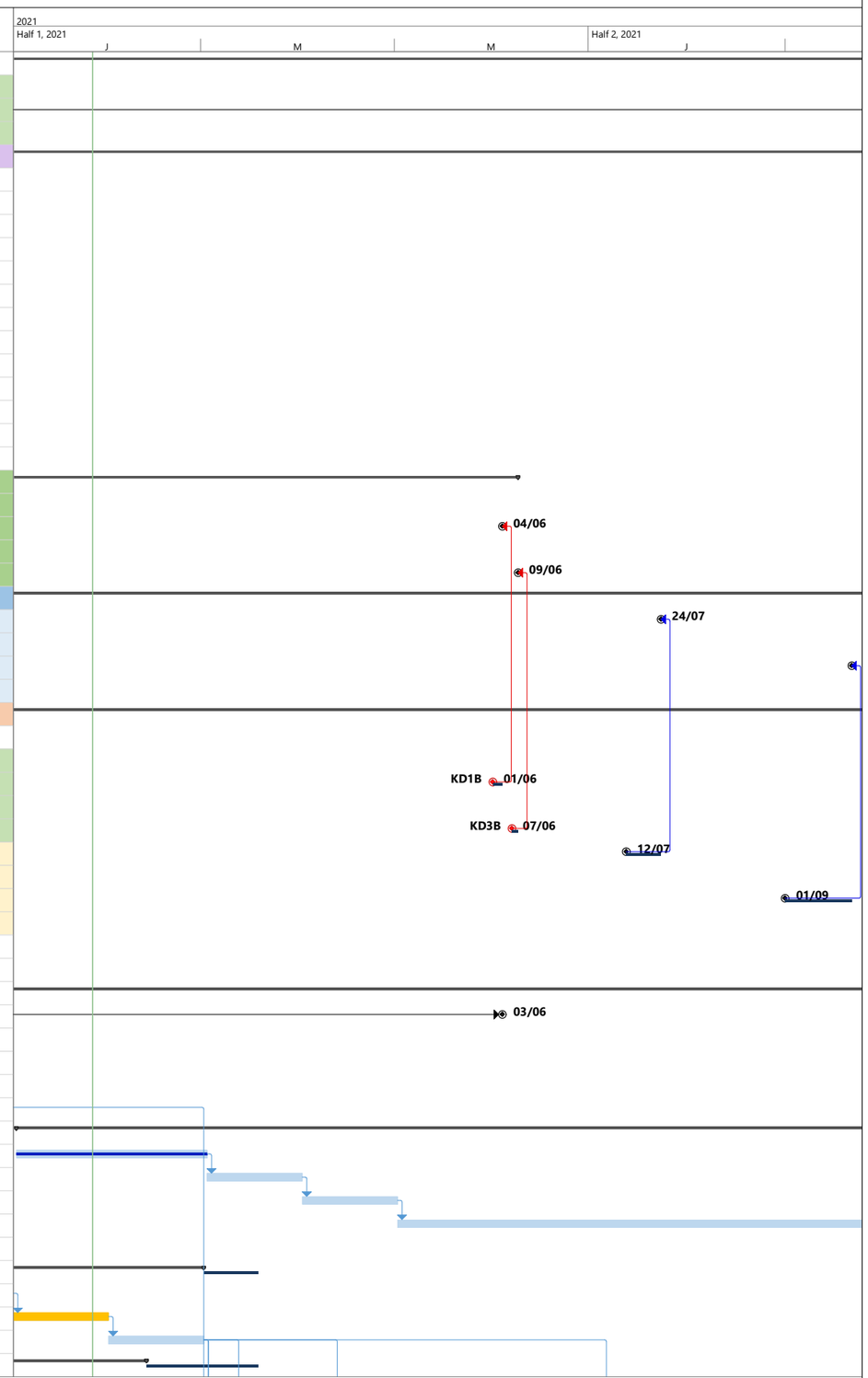


Remaining Work
Critical Activity
Milestone
Actual Progress

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
Revised Programme - as at 20 Feb 2021 (Critical Path)

Date	Revision	Checked	Approved
30-Oct-20	Rev.3	LT	KM
02-Dec-20	Rev.4	LT	KM
30-Dec-20	Rev.5	LT	KM
26-Jan-21	Rev.6	LT	KM
26-Feb-21	Rev.7	LT	KM

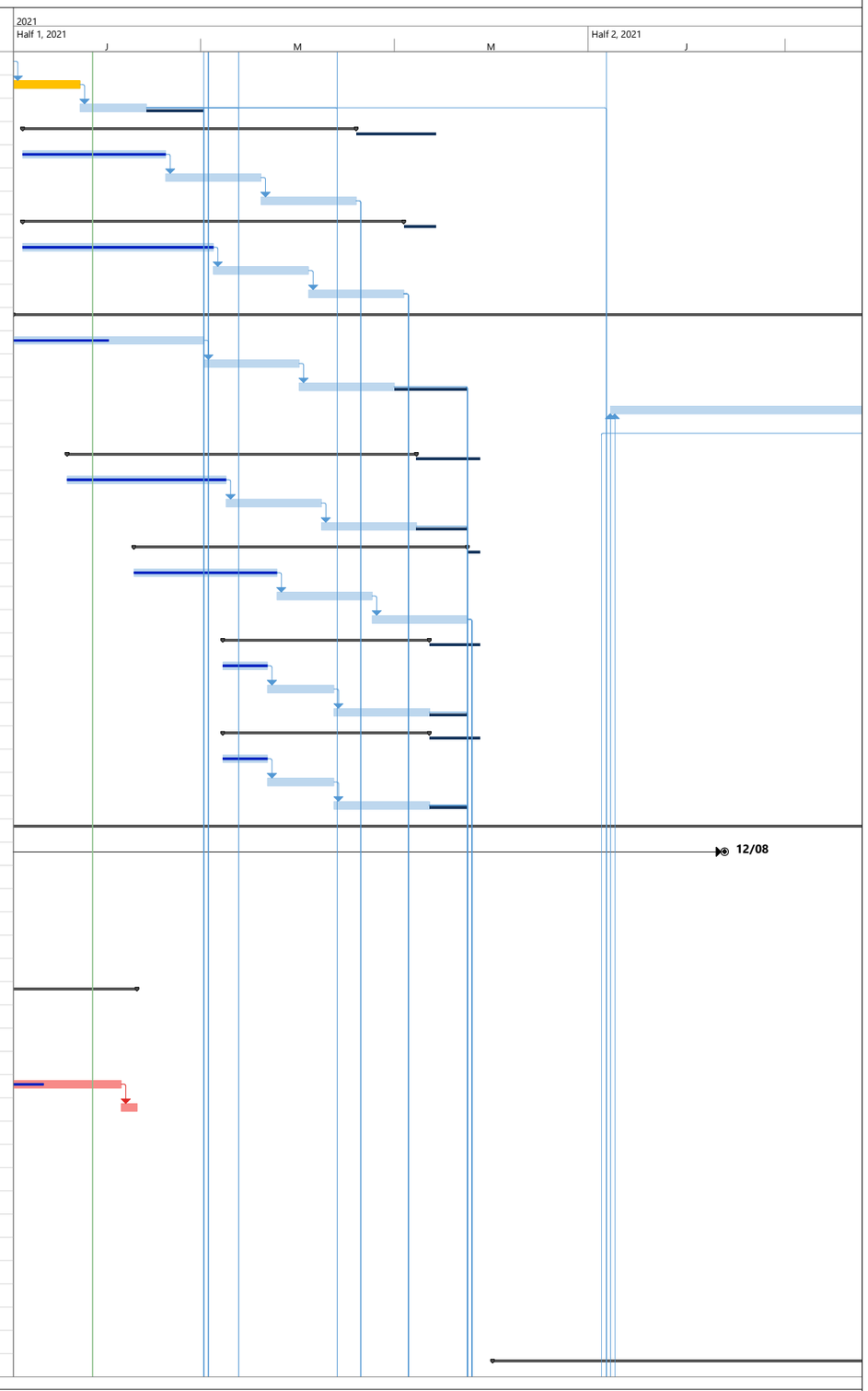
ID	ID	WBS	Task Name	Duration between Task Start and Finish	Start	Finish	Float Time	Predecessors	Successors	Resource Names
1	1	1	**DE/2018/04 - Contract Master Programme**	**1990 days**	**Mon 02/12/19**	**Tue 13/05/25**	**0 days**			
2	2	1.1	*Starting Date*	*0 days*	*Mon 02/12/19*	*Mon 02/12/19*	*0 days*		*3SS+1625 edays,623*	
3	3	1.2	*Completion Date*	*0 days*	*Tue 14/05/24*	*Tue 14/05/24*	*0 days*	*2SS+1625 edays,354*		
4	4	1.3	*Defect Dates with respect to Completion Date*	*365 days*	*Tue 14/05/24*	*Tue 13/05/25*	*0 days*	*3*		
5	5	2	**Access Dates**	**1599 days**	**Mon 02/12/19**	**Thu 18/04/24**	**0 days**			
6	6	2.1	Access Date for Works Area WA1-C	90 days	Mon 02/12/19	Sat 29/02/20	0 days			
7	7	2.2	Access Date for Works Area WA2-C	90 days	Mon 02/12/19	Sat 29/02/20	0 days			
8	8	2.3	Access Date for Portion B-2, Inlet Works No. 1	150 edays	Tue 28/06/22	Fri 25/11/22	0 edays			
9	9	2.4	Access Date for Portion B-3, PST No. 1~4	90 edays	Sat 14/01/23	Fri 14/04/23	0 edays			
10	10	2.5	Access Date for Portion B-3A, Existing PST No. 4 and No. 6	0 days	Mon 02/12/19	Mon 02/12/19	0 days			
11	11	2.6	Access Date for Portion B-3B, Temporary Filtrate Lifting Well and Eq. Tank	0 days	Mon 02/12/19	Mon 02/12/19	0 days			
12	12	2.7	Access Date for Portion B-4, BR 2A & 2B	90 edays	Fri 25/11/22	Thu 23/02/23	0 edays			
13	13	2.8	Access Date for Portion B-5A, MFB No. 2 below 1st floor level	90 edays	Mon 20/12/21	Sun 20/03/22	0 edays			
14	14	2.9	Access Date for Portion B-5B, MFB No. 2 remaining portion	90 edays	Thu 19/05/22	Wed 17/08/22	0 edays			
15	15	2.10	Access Date for Portion B-7 & 7B, Chemical Dosing, Concrete Plinth for DOs, Chemical Sys 1 & 2	150 edays	Mon 20/12/21	Thu 19/05/22	0 edays			
16	16	2.11	Access Date for Portion B-7A & 7B, area for modification of existing emergency generator elect	0 edays	Mon 02/12/19	Mon 02/12/19	0 edays			
17	17	2.12	Access Date for Portion B-9B, underground pipework	60 edays	Sun 18/02/24	Thu 18/04/24	0 edays			
18	18	2.13	Access Date for B-10, existing sludge thickening building	0 edays	Mon 02/12/19	Mon 02/12/19	0 edays			
19	19	3	**Key Dates**	**555 days**	**Mon 02/12/19**	**Wed 09/06/21**	**0 days**			
20	20	3.1	KD1A - Submission of civil and dimensional requirement drawings, electrical schematic drawing	340 edays	Mon 02/12/19	Fri 06/11/20	0 edays	31FF		
21	21	3.2	KD1B - Submission of remaining civil and dimensional requirement drawings, electrical schema	550 edays	Mon 02/12/19	Fri 04/06/21	0 edays	32FF		
22	22	3.3	KD3A - Completion of E&M Installation works of existing power house in Portions B-7A and B-7	240 edays	Mon 02/12/19	Wed 29/07/20	0 edays	33FF		
23	23	3.4	KD3B - Completion of all work for reprovision of the existing Primary Sedimentation Tanks No.	555 edays	Mon 02/12/19	Wed 09/06/21	0 edays	34FF		
24	24	4	**Sectional Completion Dates**	**1625 days**	**Mon 02/12/19**	**Tue 14/05/24**	**0 days**			
25	25	4.1	Section 1 - Completion of the design of E&M Works for all works as defined in WI_GP Cl. 10.1(a	600 edays	Mon 02/12/19	Sat 24/07/21	0 edays	35FF		
26	26	4.2	Section 2 - Completion of all works for Inlet Works, PST No. 1~4, BR No. 2A & 2B, MFB No. 2, te	1600 edays	Mon 02/12/19	Fri 19/04/24	0 edays	36FF		
27	27	4.3	Section 3 - Completion of all works for retrofitting of the existing PST...etc (660 days after starti	660 edays	Mon 02/12/19	Wed 22/09/21	0 edays	37FF		
28	28	4.4	Section 4 - Completion of Work for remainder of the works (1625 days after starting date)	1625 edays	Mon 02/12/19	Tue 14/05/24	0 edays	38FF		
29	29	5	**DE/2018/04 - the Contractor's Programme (w/ Defects Date of Planned Completion Date)**	**1977 days**	**Mon 02/12/19**	**Wed 30/04/25**	**0 days**			
30	*30*	*5.1*	*Starting Date*	*0 days*	*Mon 02/12/19*	*Mon 02/12/19*	*0 days*		*623,197SS+30 eday:*	
31	31	5.2	Planned Key Date Completion Date - KD1A	0 days	Fri 30/10/20	Fri 30/10/20	7 days		20FF	
32	32	5.3	Planned Key Date Completion Date - KD1B	0 days	Tue 01/06/21	Tue 01/06/21	3 days		21FF	
33	33	5.4	Planned Key Date Completion Date - KD3A	0 days	Wed 22/07/20	Wed 22/07/20	7 days		22FF	
34	34	5.5	Planned Key Date Completion Date - KD3B	0 days	Mon 07/06/21	Mon 07/06/21	2 days		23FF	
35	35	5.6	Planned Sectional Completion Date - Section 1	0 days	Mon 12/07/21	Mon 12/07/21	11 days		25FF	
36	36	5.7	Planned Sectional Completion Date - Section 2	0 days	Mon 01/04/24	Mon 01/04/24	18 days		26FF	
37	37	5.8	Planned Sectional Completion Date - Section 3	0 days	Wed 01/09/21	Wed 01/09/21	21 days		27FF	
38	38	5.9	Planned Sectional Completion Date - Section 4	0 days	Wed 01/05/24	Wed 01/05/24	13 days		28FF	
39	39	5.10	Planned Completion Date	0 days	Wed 08/05/24	Wed 08/05/24	5 days	1271,1272,1273,123		
40	*40*	*5.11*	*Defect Dates with respect to planned completion date*	*365 days*	*Wed 01/05/24*	*Wed 30/04/25*	*0 days*			
41	41	5.12	**Part A: Procurement and Delivery of Major Plant and Materials**	**645 days**	**Wed 01/07/20**	**Wed 06/04/22**	**535 days**			
42	42	5.12.1	Planned Completion Date for Procurement of major plant and materials	0 days	Thu 03/06/21	Thu 03/06/21	0 days	30SS+550 days		
43	43	5.12.2	**General - stoplogs and penstocks, C11, EQT013**	**120 days**	**Wed 01/07/20**	**Wed 28/10/20**	**0 days**			
44	44	5.12.2.1	Submission for acceptance of purchasing package	60 days	Wed 01/07/20	Sat 29/08/20	0 days		45	
45	45	5.12.2.2	Invitation of quotations for purchasing package	30 days	Sun 30/08/20	Mon 28/09/20	0 days	44	46	
46	46	5.12.2.3	Acceptance of conforming quotation (Completed)	30 days	Tue 29/09/20	Wed 28/10/20	0 days	45	248	
47	47	5.12.3	**General - Instrumentations except use at BR, C11, EQT035-1**	**460 days**	**Sat 02/01/21**	**Wed 06/04/22**	**535 days**			
48	48	5.12.3.1	Submission for acceptance of purchasing package	60 days	Sat 02/01/21	Tue 02/03/21	0 days		49	
49	49	5.12.3.2	Invitation of quotations for purchasing package	30 days	Wed 03/03/21	Thu 01/04/21	0 days	48	50	
50	50	5.12.3.3	Acceptance of conforming quotation	30 days	Fri 02/04/21	Sat 01/05/21	0 days	49	51	
51	51	5.12.3.4	Manufacturing and Factory Acceptance Test of Plant	280 days	Sun 02/05/21	Sat 05/02/22	0 days	50	52	
52	52	5.12.3.5	Shipping and Delivery of Plant	60 days	Sun 06/02/22	Wed 06/04/22	178 days	51	330,460,742	
53	53	5.12.4	**General - pipework and valves, C11, ref. EQT036 (Rev. 5)**	**120 days**	**Mon 02/11/20**	**Mon 01/03/21**	**17 days**			
54	54	5.12.4.1	Submission for acceptance of purchasing package	60 days	Mon 02/11/20	Thu 31/12/20	0 days		55	
55	55	5.12.4.2	Invitation of quotations for purchasing package	30 days	Fri 01/01/21	Sat 30/01/21	0 days	54	56	
56	56	5.12.4.3	Acceptance of conforming quotation	30 days	Sun 31/01/21	Mon 01/03/21	0 days	55	248,294,523,646,64	
57	57	5.12.5	**General - electric actuators, C11, ref. EQT042**	**72 days**	**Wed 02/12/20**	**Thu 11/02/21**	**35 days**			



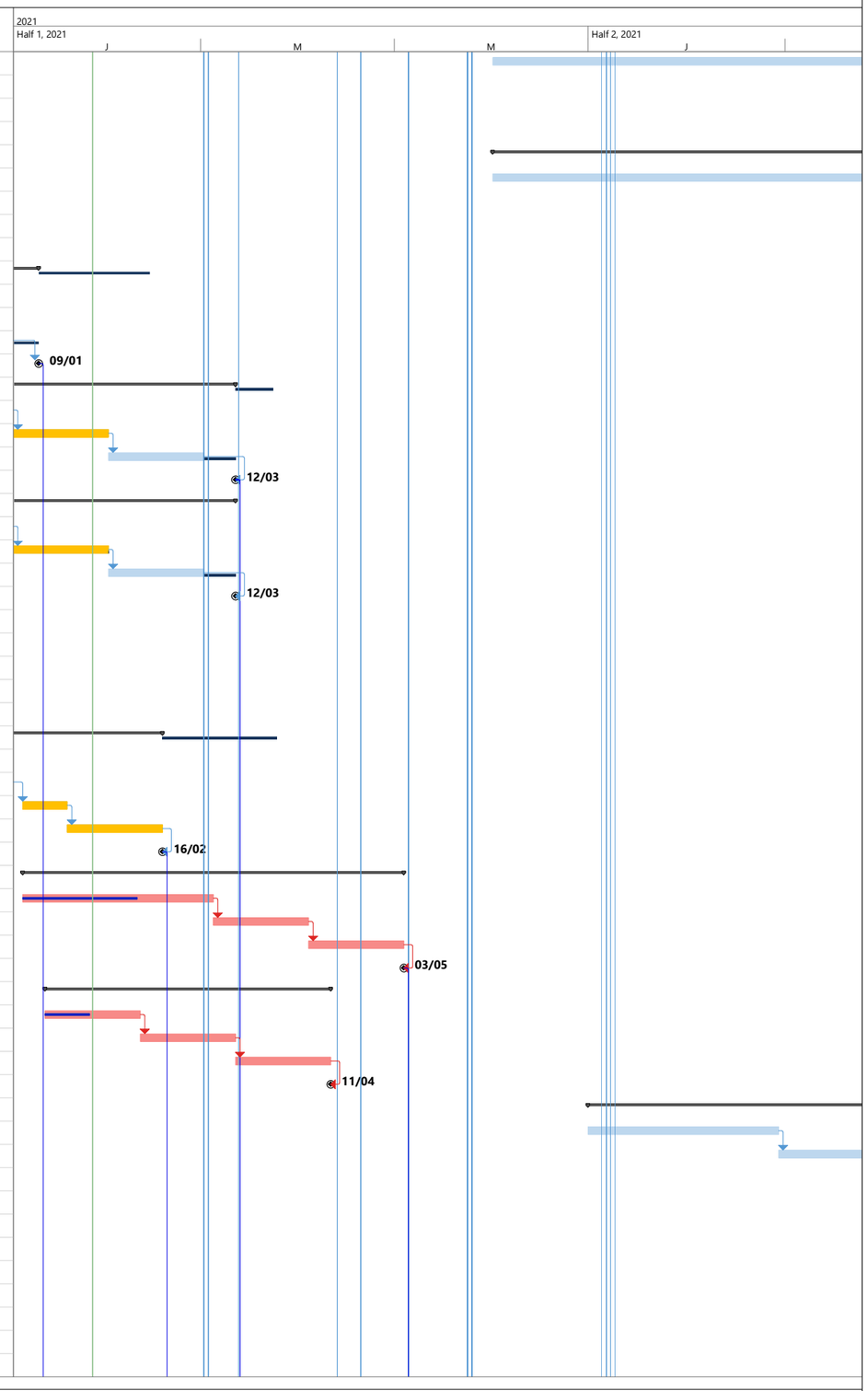
Bestwise
Project: DE/2018/04
Date: Tue 26/01/21

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

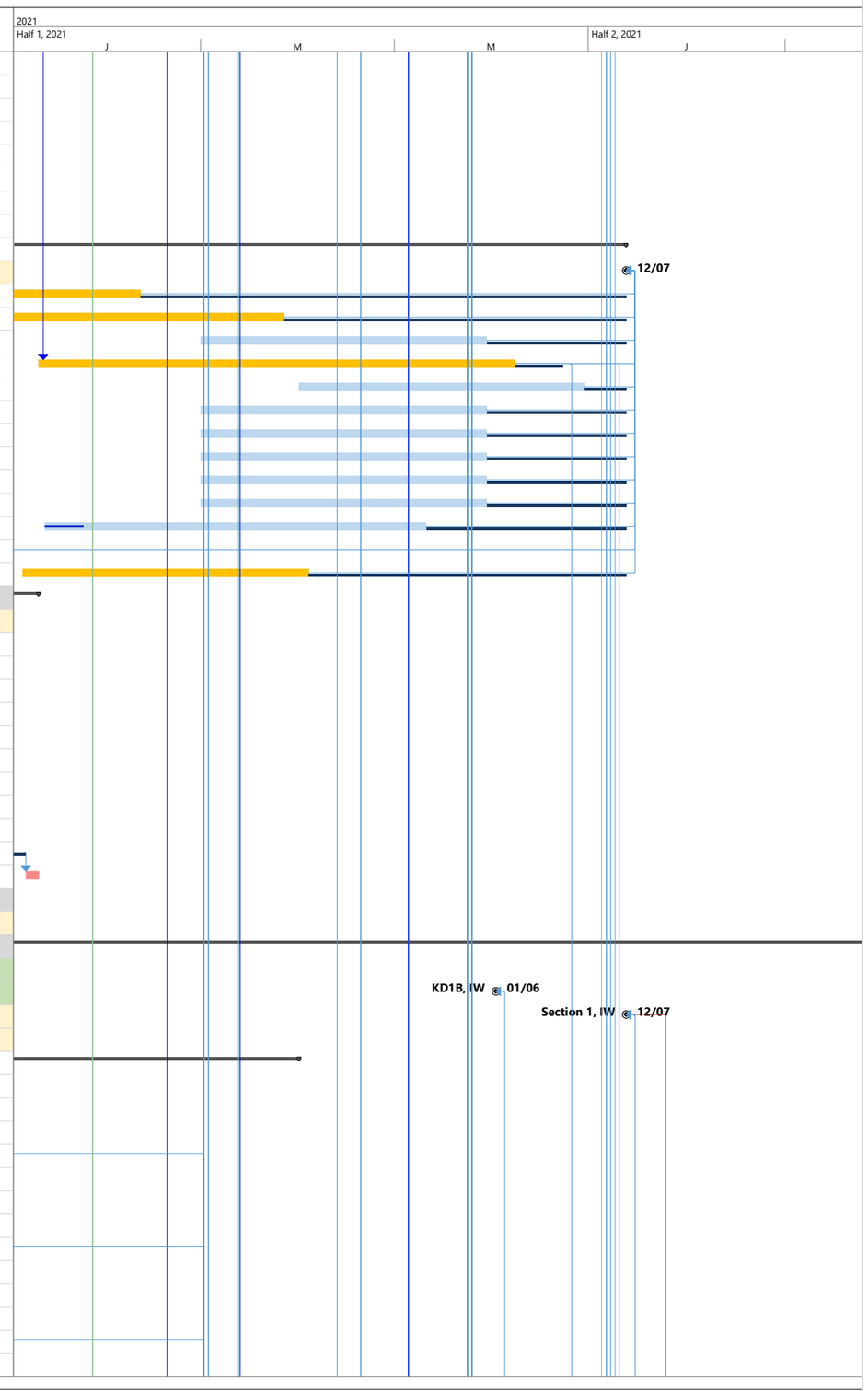
ID	ID	WBS	Task Name	Duration between Task Start and Finish	Start	Finish	Float Time	Predecessors	Successors	Resource Names
58	58	5.12.5.1	Submission for acceptance of purchasing package	30 days	Wed 02/12/20	Thu 31/12/20	0 days		59	
59	59	5.12.5.2	Invitation of quotations for purchasing package	21 days	Fri 01/01/21	Thu 21/01/21	0 days	58	60	
60	60	5.12.5.3	Acceptance of conforming quotation	21 days	Fri 22/01/21	Thu 11/02/21	18 days	59	248,294,523,646,64	
61	**61**	**5.12.6**	**General - HV Switchboards, C9, ref. EQT031 (Rev. 5)**	**105 days**	**Mon 04/01/21**	**Sun 18/04/21**	**25 days**			
62	62	5.12.6.1	Submission for acceptance of purchasing package	45 days	Mon 04/01/21	Wed 17/02/21	0 days		63	
63	63	5.12.6.2	Invitation of quotations for purchasing package	30 days	Thu 18/02/21	Fri 19/03/21	0 days	62	64	
64	64	5.12.6.3	Acceptance of conforming quotation	30 days	Sat 20/03/21	Sun 18/04/21	0 days	63	651,252	
65	**65**	**5.12.7**	**General - LV Switchboards, C9, ref. EQT033 (Rev. 5)**	**120 days**	**Mon 04/01/21**	**Mon 03/05/21**	**10 days**			
66	66	5.12.7.1	Submission for acceptance of purchasing package	60 days	Mon 04/01/21	Thu 04/03/21	0 days		67	
67	67	5.12.7.2	Invitation of quotations for purchasing package	30 days	Fri 05/03/21	Sat 03/04/21	0 days	66	68	
68	68	5.12.7.3	Acceptance of conforming quotation	30 days	Sun 04/04/21	Mon 03/05/21	0 days	67	251,526,397,650	
69	**69**	**5.12.8**	**General - VSDs & Passive Type Harmonic Filters, C11, ref. EQT034 (Rev. 5)**	**323 days**	**Fri 01/01/21**	**Fri 19/11/21**	**403 days**			
70	70	5.12.8.1	Submission for acceptance of purchasing package	60 days	Fri 01/01/21	Mon 01/03/21	0 days		71	
71	71	5.12.8.2	Invitation of quotations for purchasing package	30 days	Tue 02/03/21	Wed 31/03/21	0 days	70	72	
72	72	5.12.8.3	Acceptance of conforming quotation	30 days	Thu 01/04/21	Fri 30/04/21	23 days	71	249,395,524,647	
73	73	5.12.8.4	Manufacturing and Factory Acceptance Test of Plant	90 days	Thu 08/07/21	Tue 05/10/21	0 days	249,395,524,647	74	
74	74	5.12.8.5	Shipping and Delivery of Plant to LVSB Sub-Contractor	45 days	Wed 06/10/21	Fri 19/11/21	0 days	73	287SS-90 edays	
75	**75**	**5.12.9**	**General - 11kV/380V Stepdown Power Transformers, C11, EQT032 (Rev. 5)**	**110 days**	**Mon 18/01/21**	**Fri 07/05/21**	**20 days**			
76	76	5.12.9.1	Submission for acceptance of purchasing package	50 days	Mon 18/01/21	Mon 08/03/21	0 days		77	
77	77	5.12.9.2	Invitation of quotations for purchasing package	30 days	Tue 09/03/21	Wed 07/04/21	0 days	76	78	
78	78	5.12.9.3	Acceptance of conforming quotation	30 days	Thu 08/04/21	Fri 07/05/21	16 days	77	249,647	
79	**79**	**5.12.10**	**General - UPS, C11, EQT061 (Rev. 5)**	**105 days**	**Mon 08/02/21**	**Sun 23/05/21**	**4 days**			
80	80	5.12.10.1	Submission for acceptance of purchasing package	45 days	Mon 08/02/21	Wed 24/03/21	0 days		81	
81	81	5.12.10.2	Invitation of quotations for purchasing package	30 days	Thu 25/03/21	Fri 23/04/21	0 days	80	82	
82	82	5.12.10.3	Acceptance of conforming quotation	30 days	Sat 24/04/21	Sun 23/05/21	0 days	81	249,395,524,647	
83	**83**	**5.12.11**	**General - HV Cables, C11, EQT041 (Rev. 5)**	**65 days**	**Mon 08/03/21**	**Tue 11/05/21**	**16 days**			
84	84	5.12.11.1	Submission for acceptance of purchasing package	14 days	Mon 08/03/21	Sun 21/03/21	0 days		85	
85	85	5.12.11.2	Invitation of quotations for purchasing package	21 days	Mon 22/03/21	Sun 11/04/21	0 days	84	86	
86	86	5.12.11.3	Acceptance of conforming quotation	30 days	Mon 12/04/21	Tue 11/05/21	12 days	85	249,647	
87	**87**	**5.12.12**	**General - LV Cables, C11, EQT042 (Rev. 5)**	**65 days**	**Mon 08/03/21**	**Tue 11/05/21**	**16 days**			
88	88	5.12.12.1	Submission for acceptance of purchasing package	14 days	Mon 08/03/21	Sun 21/03/21	0 days		89	
89	89	5.12.12.2	Invitation of quotations for purchasing package	21 days	Mon 22/03/21	Sun 11/04/21	0 days	88	90	
90	90	5.12.12.3	Acceptance of conforming quotation	30 days	Mon 12/04/21	Tue 11/05/21	12 days	89	249,395,524,647	
91	91	5.13	Part B: Subletting of major sub-contract works	761 days	Wed 01/01/20	Sun 30/01/22	0 days	2,30		
92	92	5.13.1	Planned Completion Date for major sub-contract works	0 days	Thu 12/08/21	Thu 12/08/21	0 days	2SS+620 days,30SS		
93	**93**	**5.13.2**	**General - Independent BEAM Plus Consultant (04SC007)**	**150 days**	**Wed 01/01/20**	**Fri 29/05/20**	**0 days**			
94	94	5.13.2.1	Submission for acceptance of proposed Independent BEAM Plus Consultant	60 edays	Wed 01/01/20	Sun 01/03/20	0 edays		95	
95	95	5.13.2.2	Acceptance of proposed Independent BEAM Plus Consultant	14 edays	Sun 01/03/20	Sun 15/03/20	0 edays	94	96	
96	96	5.13.2.3	Engagement with an Independent BEAM Plus Consultant	7 days	Sun 15/03/20	Sat 21/03/20	0 days	95		
97	97	5.13.2.4	Actual Date for engagement with an independent BEAM Plus Consultant (Completed)	0 days	Fri 29/05/20	Fri 29/05/20	0 days			
98	**98**	**5.13.3**	**General - Conduction of Pump sump physical model test**	**270 days**	**Fri 15/05/20**	**Mon 08/02/21**	**0 days**			
99	99	5.13.3.1	Submission for acceptance of proposed hydraulic laboratory to conduct the test	7 edays	Fri 15/05/20	Fri 22/05/20	0 edays		100	
100	100	5.13.3.2	Invitation to quotations for provision of service	7 edays	Fri 22/05/20	Fri 29/05/20	0 edays	99	101	
101	101	5.13.3.3	Acceptance of proposed hydraulic laboratory	6 days	Fri 29/05/20	Wed 03/06/20	0 days	100	102	
102	102	5.13.3.4	Commencement of detailed proposal and conduction of test (Extended)	245 days	Thu 04/06/20	Wed 03/02/21	0 days	101	103	
103	103	5.13.3.5	Acceptance of hydraulic Report (Extended)	5 days	Thu 04/02/21	Mon 08/02/21	0 days	102		
104	**104**	**5.13.4**	**General - Independent Checking Engineer (04SC004)**	**127 days**	**Wed 11/03/20**	**Wed 15/07/20**	**0 days**			
105	105	5.13.4.1	Submission for acceptance of proposed Independent Checking Engineer	90 edays	Wed 11/03/20	Tue 09/06/20	0 edays		106	
106	106	5.13.4.2	Acceptance of proposed Independent Checking Engineer	1 eday	Wed 24/06/20	Thu 25/06/20	0 edays	105	107	
107	107	5.13.4.3	Engagement with an Independent Checking Engineer	21 days	Thu 25/06/20	Wed 15/07/20	0 days	106	108	
108	108	5.13.4.4	Actual Date for engagement with an ICE (Completed)	0 days	Wed 15/07/20	Wed 15/07/20	0 days	107		
109	**109**	**5.13.5**	**General - Lifting Appliances (04SC008)**	**81 days**	**Fri 01/05/20**	**Tue 21/07/20**	**0 days**			
110	110	5.13.5.1	Submission for acceptance of subcontract works package	30 edays	Fri 01/05/20	Sun 31/05/20	0 edays		111	
111	111	5.13.5.2	Invitation of tender for subcontract works	21 edays	Sun 31/05/20	Sun 21/06/20	0 edays	110	112	
112	112	5.13.5.3	Acceptance of conforming tender	30 edays	Sun 21/06/20	Tue 21/07/20	0 edays	111	113	
113	113	5.13.5.4	Sub-contract work commencement date (Completed)	0 days	Tue 21/07/20	Tue 21/07/20	0 days	112	253,398,527,652,10	
114	**114**	**5.13.6**	**General - Mechanical Installations**	**244 days**	**Tue 01/06/21**	**Sun 30/01/22**	**0 days**			



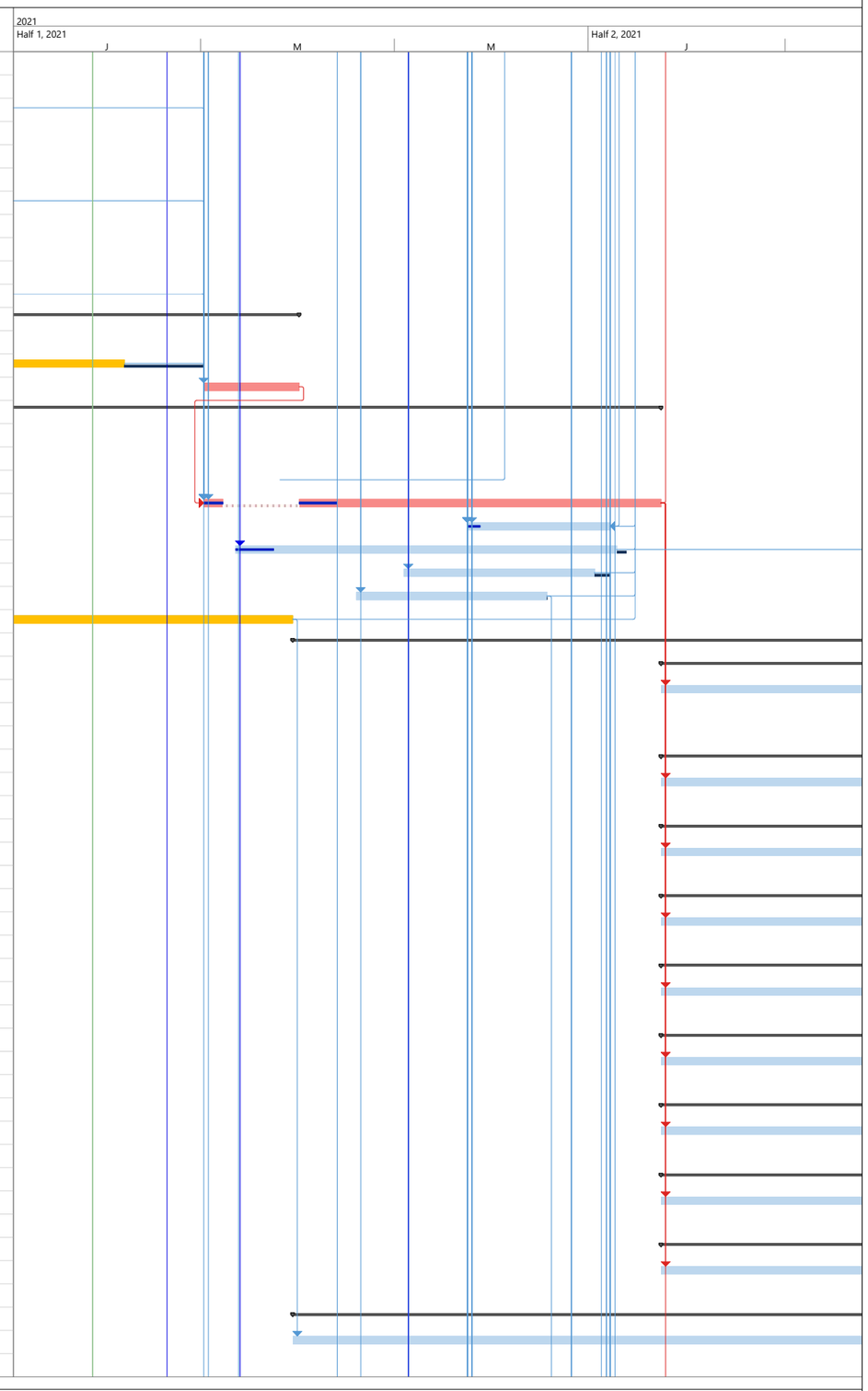
ID	ID	WBS	Task Name	Duration between Task Start and Finish	Start	Finish	Float Time	Predecessors	Successors	Resource Names
115	115	5.13.6.1	Submission for acceptance of subcontract works package	120 days	Tue 01/06/21	Tue 28/09/21	0 days		116	
116	116	5.13.6.2	Invitation of tender for subcontract works	75 days	Wed 29/09/21	Sun 12/12/21	0 days	115	117	
117	117	5.13.6.3	Acceptance of conforming tender	30 days	Mon 13/12/21	Tue 11/01/22	19 days	116	118FF	
118	118	5.13.6.4	Sub-contract work commencement date	1 day	Sun 30/01/22	Sun 30/01/22	0 days	117FF		
119	**119**	**5.13.7**	**General - Electrical Installations**	**244 days**	**Tue 01/06/21**	**Sun 30/01/22**	**0 days**			
120	120	5.13.7.1	Submission for acceptance of subcontract works package	120 edays	Tue 01/06/21	Wed 29/09/21	0 edays		121	
121	121	5.13.7.2	Invitation of tender for subcontract works	75 edays	Wed 29/09/21	Mon 13/12/21	0 edays	120	122	
122	122	5.13.7.3	Acceptance of conforming tender	30 edays	Mon 13/12/21	Wed 12/01/22	18.38 edays	121	123FF	
123	123	5.13.7.4	Sub-contract work commencement date	1 day	Sun 30/01/22	Sun 30/01/22	0 days	122FF		
124	**124**	**5.13.8**	**General - Facility Computerized Systems (SCADA, CMMS, PMS, IDMS)**	**130 days**	**Tue 01/09/20**	**Sat 09/01/21**	**35 days**			
125	125	5.13.8.1	Submission for acceptance of subcontract works package	60 edays	Tue 01/09/20	Sat 31/10/20	0 edays		126	
126	126	5.13.8.2	Invitation of tender for subcontract works	30 edays	Sat 31/10/20	Mon 30/11/20	0 edays	125	127	
127	127	5.13.8.3	Acceptance of conforming tender	30 edays	Mon 30/11/20	Wed 30/12/20	10 edays	126	128	
128	128	5.13.8.4	Sub-contract work commencement date	0 days	Sat 09/01/21	Sat 09/01/21	0 days	127	185	
129	**129**	**5.13.9**	**General - Building Services Installations**	**130 days**	**Mon 02/11/20**	**Fri 12/03/21**	**12 days**			
130	130	5.13.9.1	Submission for acceptance of subcontract works package	60 edays	Mon 02/11/20	Fri 01/01/21	0 edays		131	
131	131	5.13.9.2	Invitation of tender for subcontract works	30 edays	Fri 01/01/21	Sun 31/01/21	0 edays	130	132	
132	132	5.13.9.3	Acceptance of conforming tender	30 edays	Sun 31/01/21	Tue 02/03/21	10 edays	131	133FF	
133	133	5.13.9.4	Sub-contract work commencement date	0 days	Fri 12/03/21	Fri 12/03/21	0 days	132FF	250,396,525,649,79	
134	**134**	**5.13.10**	**General - Mechanical Ventilation and Air Conditioning Installation**	**130 days**	**Mon 02/11/20**	**Fri 12/03/21**	**0 days**			
135	135	5.13.10.1	Submission for acceptance of subcontract works package	60 days	Mon 02/11/20	Thu 31/12/20	0 days		136	
136	136	5.13.10.2	Invitation of tender for subcontract works	30 edays	Thu 31/12/20	Sat 30/01/21	0.63 edays	135	137	
137	137	5.13.10.3	Acceptance of conforming tender	30 days	Sun 31/01/21	Mon 01/03/21	10 days	136	138FF	
138	138	5.13.10.4	Sub-contract work commencement date	0 days	Fri 12/03/21	Fri 12/03/21	0 days	137FF		
139	**139**	**5.13.11**	**General - Emergency Power Generator Set (04SC006)**	**146 days**	**Wed 01/07/20**	**Mon 23/11/20**	**0 days**			
140	140	5.13.11.1	Submission for acceptance of subcontract works package	60 edays	Wed 01/07/20	Sun 30/08/20	0 edays		141	
141	141	5.13.11.2	Invitation of tender for subcontract works	30 edays	Sun 30/08/20	Tue 29/09/20	0 edays	140	142	
142	142	5.13.11.3	Acceptance of conforming tender	30 edays	Tue 29/09/20	Thu 29/10/20	0 edays	141	143FF	
143	143	5.13.11.4	Sub-contract work commencement date (Completed)	24 days	Sat 31/10/20	Mon 23/11/20	0 days	142FF		
144	**144**	**5.13.12**	**General - Plumbing Installation (Rev. 5)**	**231 days**	**Wed 01/07/20**	**Tue 16/02/21**	**36 days**			
145	145	5.13.12.1	Submission for acceptance of subcontract works package	30 edays	Wed 01/07/20	Fri 31/07/20	0 edays		146	
146	146	5.13.12.2	Invitation of tender for subcontract works	75 edays	Fri 31/07/20	Wed 14/10/20	0 edays	145	147	
147	147	5.13.12.3	Retender of subcontract works (Rev. 5)	14 days	Mon 04/01/21	Sun 17/01/21	0 days	146	148	
148	148	5.13.12.4	Acceptance of conforming tender	30 edays	Sun 17/01/21	Tue 16/02/21	0 edays	147	149FF	
149	149	5.13.12.5	Sub-contract work commencement date (Extended)	0 days	Tue 16/02/21	Tue 16/02/21	0 days	148FF	1225	
150	**150**	**5.13.13**	**General - Fire Services Installation (Rev. 5)**	**120 days**	**Mon 04/01/21**	**Mon 03/05/21**	**0 days**			
151	151	5.13.13.1	Submission for acceptance of subcontract works package	60 days	Mon 04/01/21	Thu 04/03/21	0 days		152	
152	152	5.13.13.2	Invitation of tender for subcontract works	30 days	Fri 05/03/21	Sat 03/04/21	0 days	151	153	
153	153	5.13.13.3	Acceptance of conforming tender	30 days	Sun 04/04/21	Mon 03/05/21	0 days	152	154FF	
154	154	5.13.13.4	Sub-contract work commencement date	0 days	Mon 03/05/21	Mon 03/05/21	0 days	153FF	1176	
155	**155**	**5.13.14**	**General - Lightning Protection System and Main Earthing System (Rev. 5)**	**90 days**	**Mon 11/01/21**	**Sun 11/04/21**	**0 days**			
156	156	5.13.14.1	Submission for acceptance of subcontract works package	30 edays	Mon 11/01/21	Wed 10/02/21	0 edays		157	
157	157	5.13.14.2	Invitation of tender for subcontract works	30 edays	Wed 10/02/21	Fri 12/03/21	0 edays	156	158	
158	158	5.13.14.3	Acceptance of conforming tender	30 edays	Fri 12/03/21	Sun 11/04/21	0 edays	157	159FF	
159	159	5.13.14.4	Sub-contract work commencement date	0 days	Sun 11/04/21	Sun 11/04/21	0 days	158FF		
160	**160**	**5.13.15**	**General - CCTV Installation**	**183 days**	**Thu 01/07/21**	**Fri 31/12/21**	**0 days**			
161	161	5.13.15.1	Submission for acceptance of subcontract works package	60 edays	Thu 01/07/21	Mon 30/08/21	0 edays		162	
162	162	5.13.15.2	Invitation of tender for subcontract works	30 edays	Mon 30/08/21	Wed 29/09/21	0 edays	161	163	
163	163	5.13.15.3	Acceptance of conforming tender	30 edays	Wed 29/09/21	Fri 29/10/21	63 edays	162	164FF	
164	164	5.13.15.4	Sub-contract work commencement date	0 days	Fri 31/12/21	Fri 31/12/21	0 days	163FF		
165	**165**	**5.13.16**	**General - Civil Construction Work for underground pipework**	**40 days**	**Wed 01/07/20**	**Mon 10/08/20**	**0 days**			
166	166	5.13.16.1	Submission for acceptance of subcontract works package	14 days	Wed 01/07/20	Tue 14/07/20	0 days		167	
167	167	5.13.16.2	Invitation of tender for subcontract works	14 days	Wed 15/07/20	Tue 28/07/20	0 days	166	168	
168	168	5.13.16.3	Acceptance of conforming tender	7 days	Wed 29/07/20	Tue 04/08/20	0 days	167	169FF	
169	169	5.13.16.4	Sub-contract work commencement date (Completed)	0 days	Mon 10/08/20	Mon 10/08/20	0 days	168FF		
170	**170**	**5.13.17**	**General - Civil Construction Work for Temp. Filtrate Eq. System**	**40 days**	**Wed 01/07/20**	**Mon 10/08/20**	**0 days**			
171	171	5.13.17.1	Submission for acceptance of subcontract works package	14 days	Wed 01/07/20	Tue 14/07/20	0 days		172	



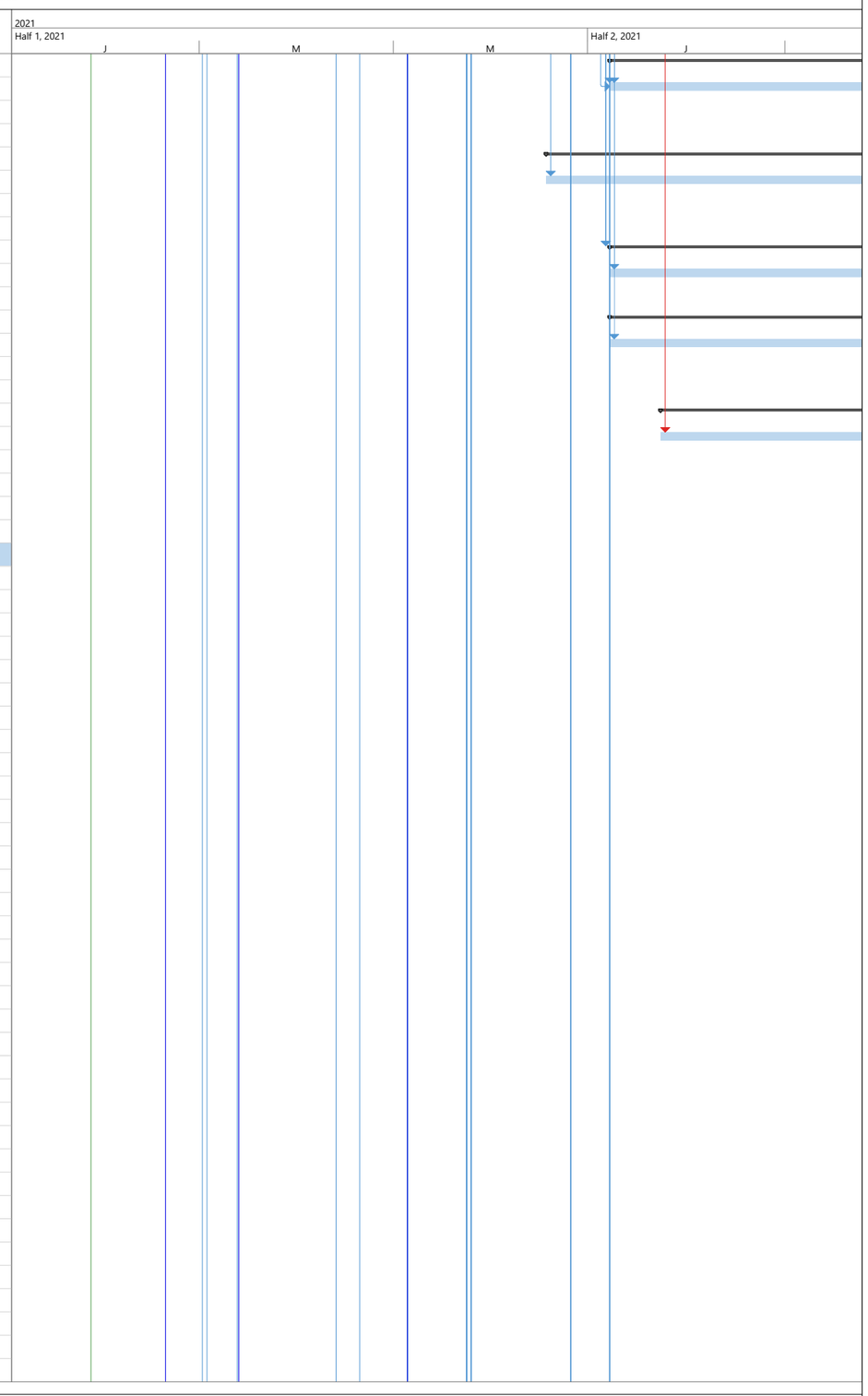
ID	ID	WBS	Task Name	Duration between Task Start and Finish	Start	Finish	Float Time	Predecessors	Successors	Resource Names
172	172	5.13.17.2	Invitation of tender for subcontract works	14 days	Wed 15/07/20	Tue 28/07/20	0 days	171	173	
173	173	5.13.17.3	Acceptance of conforming tender	7 days	Wed 29/07/20	Tue 04/08/20	0 days	172	174FF	
174	174	5.13.17.4	Sub-contract work commencement date (Completed)	0 days	Mon 10/08/20	Mon 10/08/20	0 days	173FF		
175	**175**	**5.13.18**	**Mis - Modification of existing power house**	**109 days**	**Mon 24/02/20**	**Fri 12/06/20**	**0 days**			
176	176	5.13.18.1	Submission for acceptance of subcontract works package	90 days	Mon 24/02/20	Sat 23/05/20	0 days		177	
177	177	5.13.18.2	Invitation of tender for subcontract works	14 days	Sun 24/05/20	Sat 06/06/20	0 days	176	178	
178	178	5.13.18.3	Acceptance of conforming tender	1 day	Sun 07/06/20	Sun 07/06/20	0 days	177	179FF	
179	179	5.13.18.4	Sub-contract work commencement date (Completed)	0 days	Fri 12/06/20	Fri 12/06/20	0 days	178FF	1147	
180	**180**	**5.14**	**Part C: General Design Submissions**	**589 days**	**Mon 02/12/19**	**Mon 12/07/21**	**0 days**			
181	181	5.14.1	Planned Sectional Completion Date - Section 1	0 days	Mon 12/07/21	Mon 12/07/21	0 days	182FF,183FF,184FF		
182	182	5.14.2	CDS001 - General Design Parameters	250 edays	Fri 05/06/20	Wed 10/02/21	152.38 edays		181FF	
183	183	5.14.3	CDS020 - Electrical Installation Typical Details	250 edays	Mon 20/07/20	Sat 27/03/21	107.38 edays		181FF	
184	184	5.14.4	CDS009 - Detailed Design for Plant Service Water System	90 edays	Mon 01/03/21	Sun 30/05/21	43.38 edays		181FF	
185	185	5.14.5	CDS012 - Detailed Design for SCADA System	150 edays	Sat 09/01/21	Tue 08/06/21	14.38 edays	128	181FF,249FF,395FF,	
186	186	5.14.6	CDS13-1 - Detailed Design for CCTV System	90 edays	Thu 01/04/21	Wed 30/06/21	12.38 edays		181FF	
187	187	5.14.7	CDS13-2 - Detailed Design for Gas Detection and Monitoring System	90 edays	Mon 01/03/21	Sun 30/05/21	43.38 edays		181FF	
188	188	5.14.8	CDS14-1 - Detailed Design for Power monitoring system (PMS)	90 edays	Mon 01/03/21	Sun 30/05/21	43.38 edays		181FF	
189	189	5.14.9	CDS14-2 - Detailed Design for Computerized maintenance and management (CMMS)	90 edays	Mon 01/03/21	Sun 30/05/21	43.38 edays		181FF	
190	190	5.14.10	CDS14-3 - Detailed Design for Information and documents management system (IDMS)	90 edays	Mon 01/03/21	Sun 30/05/21	43.38 edays		181FF	
191	191	5.14.11	CDS031 - Detailed Design for MVAC System	90 edays	Mon 01/03/21	Sun 30/05/21	43.38 edays		181FF	
192	192	5.14.12	CDS042 - Detailed Design for Lightning Protection System	120 edays	Mon 11/01/21	Tue 11/05/21	62.38 edays		181FF	
193	193	5.14.13	Design submissions for E&M installation works of existing sludge thickening building	300 edays	Mon 02/12/19	Sun 27/09/20	0 edays		181FF	
194	194	5.14.14	Design Submission for Earthing and Lightning (Rev. 5)	90 edays	Mon 04/01/21	Sun 04/04/21	99.38 edays		181FF	
195	**195**	**5.15**	**Works Area WA1-C**	**374 days**	**Wed 01/01/20**	**Fri 08/01/21**	**0 days**			
196	196	5.15.1	Actual Access / Handover Date	1 day	Fri 21/02/20	Fri 21/02/20	0 days		200	
197	197	5.15.2	Submission for acceptance of subcontract works package (Site Office) (04SC003)	60 days	Wed 01/01/20	Sat 29/02/20	0 days	2SS+30 edays,30SS	198	
198	198	5.15.3	Invitation of quotations for subcontract works (Site Office)	21 days	Sun 01/03/20	Sat 21/03/20	0 days	197	199	
199	199	5.15.4	Acceptance of conforming quotation (Site Office)	10 days	Sun 22/03/20	Tue 31/03/20	0 days	198	200	
200	200	5.15.5	Design and Fabrication of the Contractor's Site Accommodations	120 days	Wed 01/04/20	Wed 29/07/20	0 days	196,199	206	
201	201	5.15.6	Submission for acceptance of subcontract works package (Site Office Foundation)	20 days	Fri 01/05/20	Wed 20/05/20	0 days		202	
202	202	5.15.7	Invitation of quotations for subcontract works (Site Office Foundation)	18 days	Thu 21/05/20	Sun 07/06/20	0 days	201	203	
203	203	5.15.8	Acceptance of conforming quotation (Site foundation)	7 days	Mon 08/06/20	Sun 14/06/20	0 days	202	204	
204	204	5.15.9	Design and Construction of the Contractor's Site Office foundation	30 days	Mon 15/06/20	Tue 14/07/20	0 days	203	205	
205	205	5.15.10	Construction of Contractor's Site Office foundation (Completed)	47 days	Wed 15/07/20	Sun 30/08/20	0 days	204	206	
206	206	5.15.11	Site Installation of the Contractor's Site Accommodations (MiC) (Rev. 5)	120 days	Mon 31/08/20	Mon 28/12/20	7 days	200,205	207	
207	207	5.15.12	Anticipated date of working at site (Rev. 5)	4 days	Tue 05/01/21	Fri 08/01/21	0 days	206		
208	**208**	**5.16**	**Works Area WA2-C**	**1 day**	**Fri 21/02/20**	**Fri 21/02/20**	**0 days**			
209	209	5.16.1	Actual Access / Handover Date	1 day	Fri 21/02/20	Fri 21/02/20	0 days			
210	**210**	**5.17**	**Inlet Works No. 1, Portion B-2 (PS 6B.2.1)**	**1400 days**	**Mon 01/06/20**	**Mon 01/04/24**	**0 days**			
211	211	5.17.1	Planned Key Date Completion Date - KD1A, IW	0 days	Fri 30/10/20	Fri 30/10/20	0 days	245FF,246FF		
212	212	5.17.2	Planned Key Date Completion Date - KD1B, IW	0 days	Tue 01/06/21	Tue 01/06/21	0 days	247FF		
213	213	5.17.3	Planned Sectional Completion Date - Section 1, IW	0 days	Mon 12/07/21	Mon 12/07/21	0 days	248FF,249FF,250FF		
214	214	5.17.4	Planned Sectional Completion Date - Section 2, IW	0 days	Mon 01/04/24	Mon 01/04/24	0 days			
215	**215**	**5.17.5**	**Selection of Suppliers for major plant and materials for Inlet Works No. 1**	**304 days**	**Mon 01/06/20**	**Wed 31/03/21**	**0 days**			
216	**216**	**5.17.5.1**	**Inlet Works - inlet Pumps (Marking Scheme Approach), C11, ref. EQT006**	**120 days**	**Mon 01/06/20**	**Mon 28/09/20**	**0 days**			
217	217	5.17.5.1.1	Submission for acceptance of purchasing package including proposed marking scheme	60 days	Mon 01/06/20	Thu 30/07/20	0 days		218	
218	218	5.17.5.1.2	Invitation of quotations for purchasing package	30 days	Fri 31/07/20	Sat 29/08/20	0 days	217	219	
219	219	5.17.5.1.3	Acceptance of conforming quotation (Completed)	30 days	Sun 30/08/20	Mon 28/09/20	0 days	218	248	
220	**220**	**5.17.5.2**	**Inlet Works - mechanical raked bar screens, C11, ref. EQT052**	**58 days**	**Fri 26/06/20**	**Sat 22/08/20**	**0 days**			
221	221	5.17.5.2.1	Submission for acceptance of purchasing package	14 days	Fri 26/06/20	Thu 09/07/20	0 days		222	
222	222	5.17.5.2.2	Invitation of quotations for purchasing package	14 days	Fri 10/07/20	Thu 23/07/20	0 days	221	223	
223	223	5.17.5.2.3	Acceptance of conforming quotation (Completed)	30 days	Fri 24/07/20	Sat 22/08/20	0 days	222	248	
224	**224**	**5.17.5.3**	**Inlet Works - screening conveyors and Diverters, C11, ref. EQT053**	**74 days**	**Wed 01/07/20**	**Sat 12/09/20**	**0 days**			
225	225	5.17.5.3.1	Submission for acceptance of purchasing package	30 days	Wed 01/07/20	Thu 30/07/20	0 days		226	
226	226	5.17.5.3.2	Invitation of quotations for purchasing package	14 days	Fri 31/07/20	Thu 13/08/20	0 days	225	227	
227	227	5.17.5.3.3	Acceptance of conforming quotation (Completed)	30 days	Fri 14/08/20	Sat 12/09/20	0 days	226	248	
228	**228**	**5.17.5.4**	**Inlet Works - screening screw type compactors, C11, ref. EQT003**	**105 days**	**Wed 01/07/20**	**Tue 13/10/20**	**0 days**			



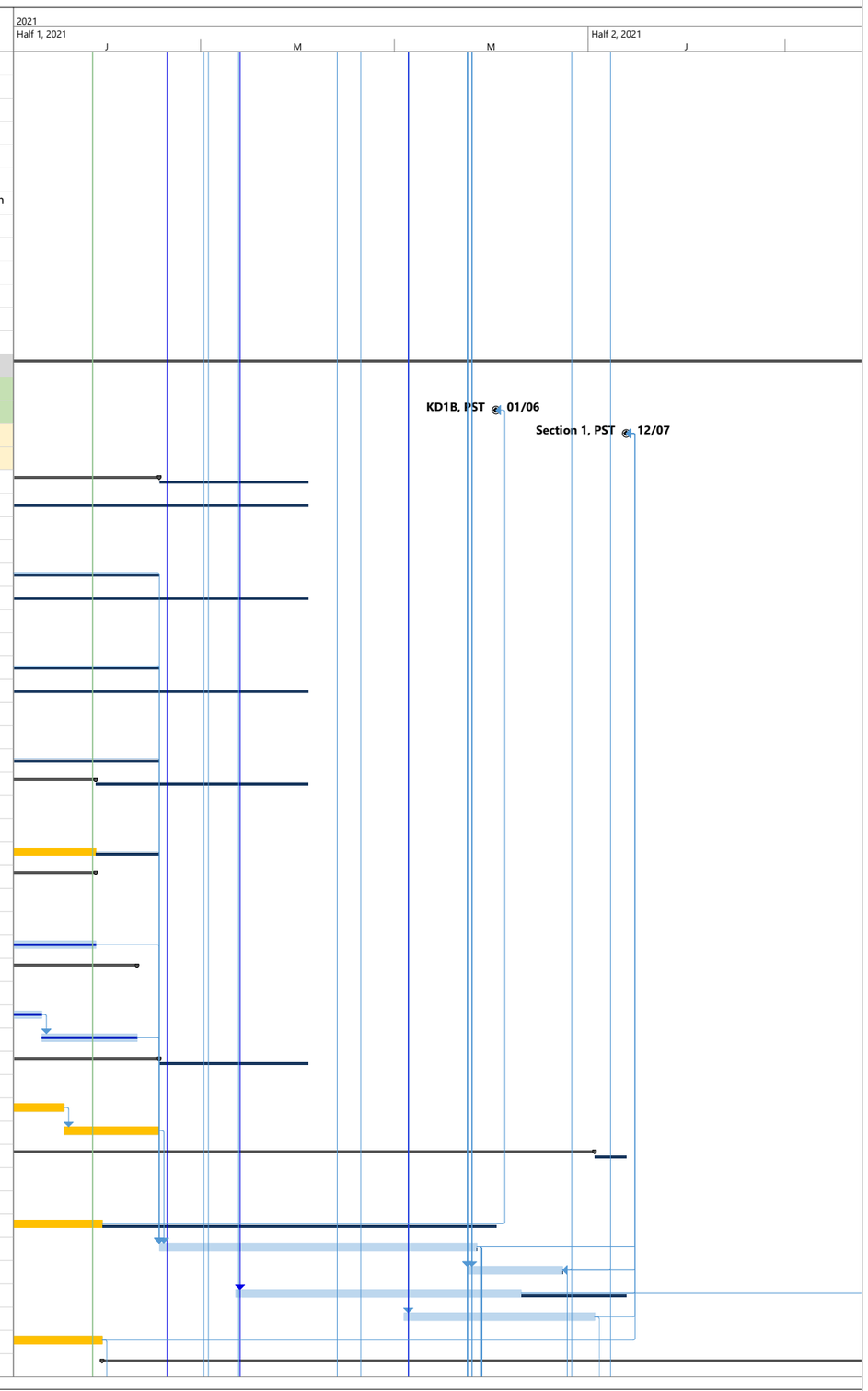
ID	ID	WBS	Task Name	Duration between Task Start and Finish	Start	Finish	Float Time	Predecessors	Successors	Resource Names
229	229	5.17.5.4.1	Submission for acceptance of purchasing package	45 days	Wed 01/07/20	Fri 14/08/20	0 days		230	
230	230	5.17.5.4.2	Invitation of quotations for purchasing package	30 days	Sat 15/08/20	Sun 13/09/20	0 days	229	231	
231	231	5.17.5.4.3	Acceptance of conforming quotation (Completed)	30 days	Mon 14/09/20	Tue 13/10/20	0 days	230	248	
232	**232**	**5.17.5.5**	**Inlet Works - grit removal system, C11, ref. EQT004**	**90 days**	**Wed 01/07/20**	**Mon 28/09/2(**	**0 days**			
233	233	5.17.5.5.1	Submission for acceptance of purchasing package	30 days	Wed 01/07/20	Thu 30/07/20	0 days		234	
234	234	5.17.5.5.2	Invitation of quotations for purchasing package	30 days	Fri 31/07/20	Sat 29/08/20	0 days	233	235	
235	235	5.17.5.5.3	Acceptance of conforming quotation (Completed)	30 days	Sun 30/08/20	Mon 28/09/2C	0 days	234	248	
236	**236**	**5.17.5.6**	**Inlet Works - grit classifiers, C11, ref. EQT005**	**90 days**	**Wed 01/07/20**	**Mon 28/09/2(**	**0 days**			
237	237	5.17.5.6.1	Submission for acceptance of purchasing package	30 days	Wed 01/07/20	Thu 30/07/20	0 days		238	
238	238	5.17.5.6.2	Invitation of quotations for purchasing package	30 days	Fri 31/07/20	Sat 29/08/20	0 days	237	239	
239	239	5.17.5.6.3	Acceptance of conforming quotation (Completed)	30 days	Sun 30/08/20	Mon 28/09/2C	0 days	238	248	
240	**240**	**5.17.5.7**	**Inlet Works - Fixed Bar Screen, C11, ref. EQT046**	**279 days**	**Fri 26/06/20**	**Wed 31/03/2:**	**0 days**			
241	241	5.17.5.7.1	Submission for acceptance of purchasing package	14 days	Fri 26/06/20	Thu 09/07/20	0 days		242	
242	242	5.17.5.7.2	Invitation of quotations for purchasing package	210 days	Fri 10/07/20	Thu 04/02/21	25 days	241	243	
243	243	5.17.5.7.3	Acceptance of conforming quotation (2nd Extended)	30 days	Tue 02/03/21	Wed 31/03/21	0 days	242	248	
244	**244**	**5.17.6**	**Design Submissions for IW**	**374 days**	**Wed 15/07/20**	**Fri 23/07/21**	**0 days**			
245	245	5.17.6.1	Electrical schematic drawings for Inlet Works No. 1	90 days	Wed 15/07/20	Mon 12/10/2C	18 days		211FF	
246	246	5.17.6.2	CDS080-1 - Civil and dimensional requirements drawings for Inlet Works No. 1 up to +8.0 r	45 days	Tue 01/09/20	Thu 15/10/20	0 days		211FF	
247	247	5.17.6.3	CDS081-1 - Civil and dimensional requirements drawings for Inlet Works No. 1	210 days	Fri 28/08/20	Thu 25/03/21	0 days		212FF	
248	248	5.17.6.4	CDS002 - Detailed Design for Inlet Works No. 1	144 edays	Mon 01/03/21	Fri 23/07/21	0 edays	56,223,227,219,23	256,278,263,266,26	
249	249	5.17.6.5	CDS021 - Detailed Design for Electrical Installations for Inlet Works No. 1	45 edays	Sun 23/05/21	Wed 07/07/21	0.63 edays	72,78,82,86,90,185	73,295,287,298,213	
250	250	5.17.6.6	CDS034-1 - Detailed Design for Electrical Installations BS at Inlet Works No. 1	120 edays	Fri 12/03/21	Sat 10/07/21	2.38 edays	133	348,213FF	
251	251	5.17.6.7	CDS025-1 - Detailed Design for LV Switchboards for Inlet Works No. 1	60 edays	Mon 03/05/21	Fri 02/07/21	5.63 edays	68	287,213FF	
252	252	5.17.6.8	CDS026-1 - Detailed Design for HV Switchboards for Inlet Works No. 1	60 edays	Sun 18/04/21	Thu 17/06/21	0.63 edays	64	291,213FF	
253	253	5.17.6.9	CDS050-1 - Detailed Design for Lifting Appliances - Inlet Works No. 1	210 edays	Tue 01/09/20	Tue 30/03/21	0 edays	113	284,213FF	
254	**254**	**5.17.7**	**Manufacturing and Delivery of Plant & Materials**	**605 days**	**Tue 30/03/21**	**Thu 24/11/22**	**338 days**			
255	**255**	**5.17.7.1**	**Inlet Pumps, EQT006**	**489 days**	**Sat 24/07/21**	**Thu 24/11/22**	**352 days**			
256	256	5.17.7.1.1	Manufacturing of Inlet Pumps, EQT006	240 days	Sat 24/07/21	Sun 20/03/22	0 days	248	257	
257	257	5.17.7.1.2	Factory Acceptance Test of Plant (to be witnessed by PM)	60 days	Mon 21/03/22	Thu 19/05/22	129 days	256	258	
258	258	5.17.7.1.3	Shipping and Delivery of Plant to site	60 days	Mon 26/09/22	Thu 24/11/22	225 days	257,305SS-60 eday	323	
259	**259**	**5.17.7.2**	**Mechanical Raked Bar Screen, EQT052**	489 days	Sat 24/07/21	Thu 24/11/22	31 days		319	
260	260	5.17.7.2.1	Manufacturing and Factory Acceptance Test of Plant	240 days	Sat 24/07/21	Sun 20/03/22	189 days	248	261	
261	261	5.17.7.2.2	Shipping and Delivery of Plant to site	60 days	Mon 26/09/22	Thu 24/11/22	31 days	260,305SS-60 eday	321,324	
262	**262**	**5.17.7.3**	**Screening Conveyors and Diverters, EQT053**	**489 days**	**Sat 24/07/21**	**Thu 24/11/22**	**357 days**			
263	263	5.17.7.3.1	Manufacturing and Factory Acceptance Test of Plant	240 days	Sat 24/07/21	Sun 20/03/22	189 days	248	264	
264	264	5.17.7.3.2	Shipping and Delivery of Plant to site	60 days	Mon 26/09/22	Thu 24/11/22	143 days	263,305SS-60 eday	322	
265	**265**	**5.17.7.4**	**Screening Screw Type Compactors, EQT003**	489 days	Sat 24/07/21	Thu 24/11/22	31 days		319	
266	266	5.17.7.4.1	Manufacturing and Factory Acceptance Test of Plant	240 days	Sat 24/07/21	Sun 20/03/22	189 days	248	267	
267	267	5.17.7.4.2	Shipping and Delivery of Plant to site	60 days	Mon 26/09/22	Thu 24/11/22	173 days	266,305SS-60 eday	327	
268	**268**	**5.17.7.5**	**Grit Removal System, EQT004**	**489 days**	**Sat 24/07/21**	**Thu 24/11/22**	**373 days**			
269	269	5.17.7.5.1	Manufacturing and Factory Acceptance Test of Plant	240 days	Sat 24/07/21	Sun 20/03/22	189 days	248	270	
270	270	5.17.7.5.2	Shipping and Delivery of Plant to site	60 days	Mon 26/09/22	Thu 24/11/22	246 days	269,305SS-60 eday	325	
271	**271**	**5.17.7.6**	**Grit Classifiers, EQT005**	**489 days**	**Sat 24/07/21**	**Thu 24/11/22**	**387 days**			
272	272	5.17.7.6.1	Manufacturing and Factory Acceptance Test of Plant	240 days	Sat 24/07/21	Sun 20/03/22	189 days	248	273	
273	273	5.17.7.6.2	Shipping and Delivery of Plant to site	60 days	Mon 26/09/22	Thu 24/11/22	260 days	272,305SS-60 eday	326	
274	**274**	**5.17.7.7**	**DI Pipework, EQT036**	**489 days**	**Sat 24/07/21**	**Thu 24/11/22**	**288 days**			
275	275	5.17.7.7.1	Manufacturing and Factory Acceptance Test of Plant	240 days	Sat 24/07/21	Sun 20/03/22	189 days	248	276	
276	276	5.17.7.7.2	Shipping and Delivery of Plant to site	60 days	Mon 26/09/22	Thu 24/11/22	151 days	275,305SS-60 eday	328	
277	**277**	**5.17.7.8**	**Stoplogs and Penstocks, EQT013**	**489 days**	**Sat 24/07/21**	**Thu 24/11/22**	**168 days**			
278	278	5.17.7.8.1	Manufacturing and Factory Acceptance Test of Plant	300 days	Sat 24/07/21	Thu 19/05/22	129 days	248	279	
279	279	5.17.7.8.2	Shipping and Delivery of Plant to site	60 days	Mon 26/09/22	Thu 24/11/22	31 days	278,305SS-60 eday	319	
280	**280**	**5.17.7.9**	**Valves, EQT036**	**489 days**	**Sat 24/07/21**	**Thu 24/11/22**	**288 days**			
281	281	5.17.7.9.1	Manufacturing and Factory Acceptance Test of Plant	240 days	Sat 24/07/21	Sun 20/03/22	189 days	248	282	
282	282	5.17.7.9.2	Shipping and Delivery of Plant to site	60 days	Mon 26/09/22	Thu 24/11/22	151 days	281,305SS-60 eday	328	
283	**283**	**5.17.7.10**	**Lifting Appliances**	**590 days**	**Tue 30/03/21**	**Wed 09/11/2:**	**143 days**			
284	284	5.17.7.10.1	Manufacturing and Factory Acceptance Test of Plant	240 days	Tue 30/03/21	Wed 24/11/21	305 days	253	285	
285	285	5.17.7.10.2	Shipping and Delivery of Plant to site	45 days	Mon 26/09/22	Wed 09/11/22	16 days	284,305SS-60 eday	309	



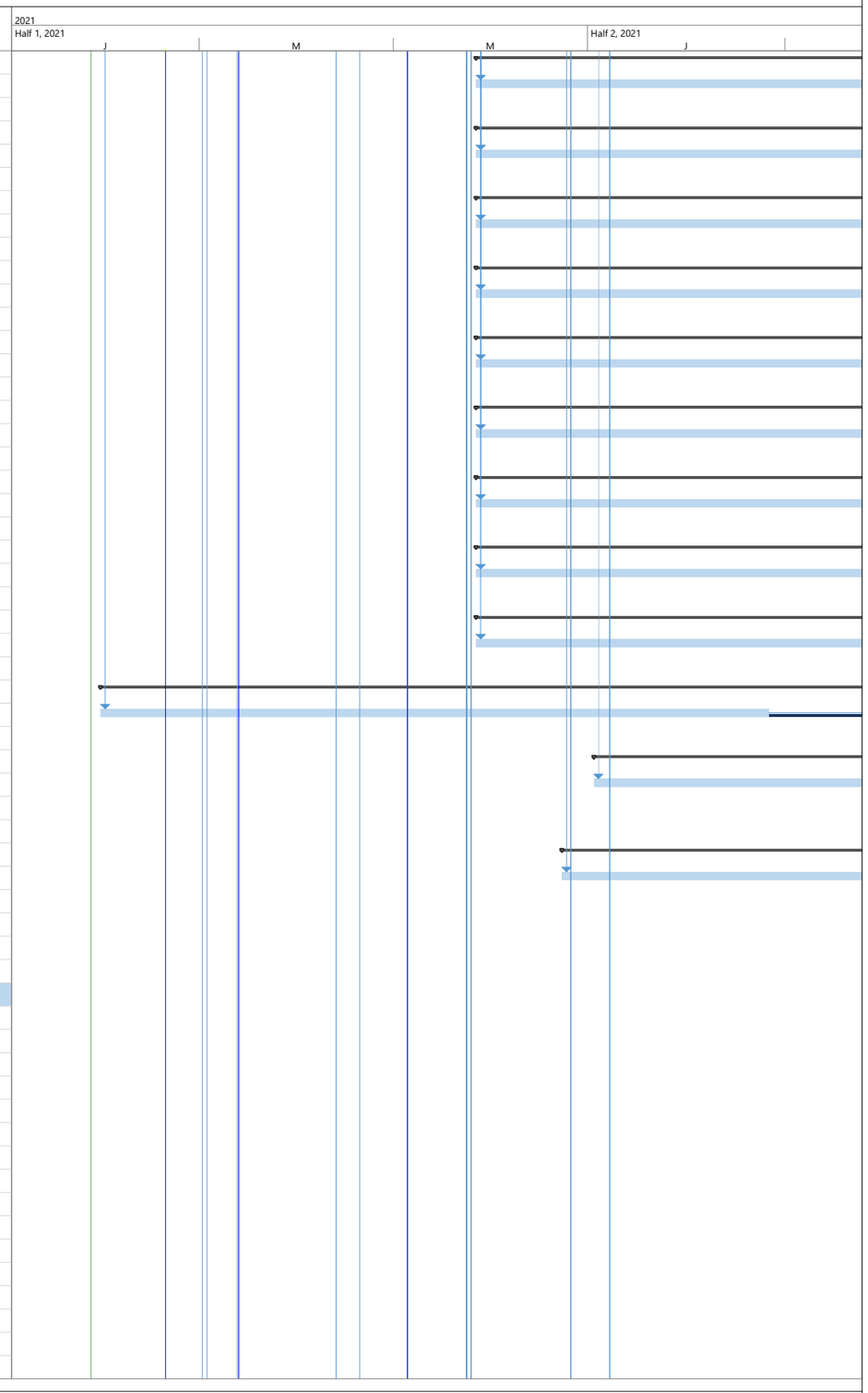
ID	ID	WBS	Task Name	Duration between Task Start and Finish	Start	Finish	Float Time	Predecessors	Successors	Resource Names
286	**286**	**5.17.7.11**	**LV Switchboards**	**490 days**	**Thu 08/07/21**	**Wed 09/11/22**	**153 days**			
287	287	5.17.7.11.1	IW - Manufacturing of Plant	240 days	Thu 08/07/21	Fri 04/03/22	0 days	249,251,74SS-90 e	288	
288	288	5.17.7.11.2	IW - Factory Acceptance Test of Plant (to be witnessed by PM)	60 days	Sat 05/03/22	Tue 03/05/22	145 days	287	289	
289	289	5.17.7.11.3	IW - Shipping and Delivery of Plant to site	45 days	Mon 26/09/22	Wed 09/11/22	60 days	305SS-60 edays,28	334	
290	**290**	**5.17.7.12**	**HV Switchboards, EQT031**	**510 days**	**Fri 18/06/21**	**Wed 09/11/22**	**153 days**			
291	291	5.17.7.12.1	IW - Manufacturing of Plant	240 days	Fri 18/06/21	Sat 12/02/22	0 days	252	292	
292	292	5.17.7.12.2	IW - Factory Acceptance Test of Plant (to be witnessed by PM)	90 days	Sun 13/02/22	Fri 13/05/22	135 days	291	293	
293	293	5.17.7.12.3	IW - Shipping and Delivery of Plant to site	45 days	Mon 26/09/22	Wed 09/11/22	60 days	292,305SS-60 eday	335	
294	**294**	**5.17.7.13**	**11kV/380V Stepdown Power Transformers, EQT032**	**490 days**	**Thu 08/07/21**	**Wed 09/11/22**	**153 days**	**56,60**		
295	295	5.17.7.13.1	IW - Manufacturing and Factory Acceptance Test of Plant	240 days	Thu 08/07/21	Fri 04/03/22	205 days	249	296	
296	296	5.17.7.13.2	IW - Shipping and Delivery of Plant to site	45 days	Mon 26/09/22	Wed 09/11/22	60 days	295,305SS-60 eday	336	
297	**297**	**5.17.7.14**	**PLC System**	**505 days**	**Thu 08/07/21**	**Thu 24/11/22**	**153 days**			
298	298	5.17.7.14.1	Manufacturing of Plant, PLC for IW	300 days	Thu 08/07/21	Tue 03/05/22	0 days	249	299	
299	299	5.17.7.14.2	Factory Acceptance Test of Plant, PLC for IW (To be witnessed by PM)	60 days	Wed 04/05/22	Sat 02/07/22	85 days	298	300	
300	300	5.17.7.14.3	Shipping and Delivery of Plant to site	60 days	Mon 26/09/22	Thu 24/11/22	45 days	305SS-60 edays,29	337	
301	**301**	**5.17.7.15**	**Fixed Bar Screen, EQT046**	**489 days**	**Sat 24/07/21**	**Thu 24/11/22**	**270 days**			
302	302	5.17.7.15.1	IW - Manufacturing and Factory Acceptance Test of Plant	240 days	Sat 24/07/21	Sun 20/03/22	204 days	248	303	
303	303	5.17.7.15.2	IW - Shipping and Delivery of Plant to site	45 days	Tue 11/10/22	Thu 24/11/22	143 days	302,305SS-45 eday	320	
304	**304**	**5.17.8**	**Site Installation Work**	**440 days**	**Fri 25/11/22**	**Wed 07/02/24**	**0 days**			
305	305	5.17.8.1	Tentative Civil Handover Date, Portion B-2, Inlet Works No. 1 (Rev. 5)	1 day	Fri 25/11/22	Fri 25/11/22	0 days		309,307,348FS+120	
306	306	5.17.8.2	Tentative Civil Handover Date, HV cables draw pits from MFB2 to IW	1 day	Tue 14/02/23	Tue 14/02/23	113 days		340FF+30 days	
307	**307**	**5.17.8.3**	**Commencement of E&M Installation at Inlet Works No. 1**	**439 days**	**Sat 26/11/22**	**Wed 07/02/24**	**0 days**	**305**		
308	308	5.17.8.3.1	Provision of Temporary Water Supply, Electricity Supply, Lighting, Welfare facilities etc.,	30 days	Sat 26/11/22	Sun 25/12/22	0 days	305		
309	**309**	**5.17.8.3.2**	**Installation of Lifting Appliances at Inlet Works No. 1**	**142 days**	**Sat 26/11/22**	**Sun 16/04/23**	**0 days**	**305,285**	**318SS+30 days,322,**	
310	310	5.17.8.3.2.1	1/F EOT Crane LA-01-01 SWL 5t	45 days	Tue 10/01/23	Thu 23/02/23	45 days	313,314	317	LA - A x 4~6 men
311	311	5.17.8.3.2.2	1/F EOT Crane LA-01-02 SWL 5t	45 days	Tue 10/01/23	Thu 23/02/23	45 days	313,314	317	LA - B x 4~6 men
312	312	5.17.8.3.2.3	1/F EOT Crane LA-01-03 SWL 5t	45 days	Tue 10/01/23	Thu 23/02/23	0 days	313,314	315,317	LA - C x 4~6 men
313	313	5.17.8.3.2.4	UG EOT Crane LA-01-04 SWL 10t	45 days	Sat 26/11/22	Mon 09/01/23	0 days		310,311,312,317	LA - A x 4~6 men
314	314	5.17.8.3.2.5	UG EOT Crane LA-01-05 SWL 10t	45 days	Sat 26/11/22	Mon 09/01/23	0 days		310,311,312,317	LA - B x 4~6 men
315	315	5.17.8.3.2.6	1/F Retractable Crane LA-01-06 SWL 10t	45 days	Fri 24/02/23	Sun 09/04/23	0 days	312	317	LA - C x 4~6 men
316	316	5.17.8.3.2.7	Submission of T&C Plan and Procedures of LA for acceptance	14 days	Sat 26/11/22	Fri 09/12/22	121 days		317	
317	317	5.17.8.3.2.8	T&C, Loading Test for Lifting Appliances	7 days	Mon 10/04/23	Sun 16/04/23	0 days	310,311,312,313,3	320	LA - B x 4~6 men
318	**318**	**5.17.8.3.3**	**Mechanical Installations for Inlet Works No. 1**	**250 days**	**Mon 26/12/22**	**Fri 01/09/23**	**0 days**	**309SS+30 days**	**333SS+14 days,345,**	
319	319	5.17.8.3.3.1	Installation of penstocks and stoplogs (Penstock 35nos, Stoplogs 37 nos), EQT013	120 days	Mon 26/12/22	Mon 24/04/23	0 days	265,259,279	328,329,332	ME - E x 4~6 men
320	320	5.17.8.3.3.2	Installation of fixed bar screen (x1), EQT046	7 days	Mon 17/04/23	Sun 23/04/23	0 days	317,303	324	ME - D x 2~4 men
321	321	5.17.8.3.3.3	Installation of mechanical raked coarse bar screens (x4), EQT052	90 days	Mon 26/12/22	Sat 25/03/23	22 days	261	322	ME - A x 4~6 men
322	322	5.17.8.3.3.4	Installation of screening conveyors (x6), EQT053	30 days	Mon 17/04/23	Tue 16/05/23	0 days	309,321,264	327	ME - A x 4~6 men
323	323	5.17.8.3.3.5	Installation of inlet pumps (x5), EQT006	21 days	Sat 08/07/23	Fri 28/07/23	0 days	309,328SS+14 days	325	ME - B x 4~6 men
324	324	5.17.8.3.3.6	Installation of mechanical raked fine bar screens (x4), EQT052	75 days	Mon 24/04/23	Fri 07/07/23	0 days	320,261	323	ME - B x 4~6 men
325	325	5.17.8.3.3.7	Installation of grit removal system (x3), EQT004	14 days	Sat 29/07/23	Fri 11/08/23	0 days	323,270	326	ME - B x 4~6 men
326	326	5.17.8.3.3.8	Installation of grit classifiers (x2), EQT005	21 days	Sat 12/08/23	Fri 01/09/23	127 days	325,273		ME - B x 4~6 men
327	327	5.17.8.3.3.9	Installation of compactors (x2), EQT003	21 days	Wed 17/05/23	Tue 06/06/23	214 days	322,267		ME - A x 4~6 men
328	328	5.17.8.3.3.10	Installation of pipework and valves, EQT036	30 days	Tue 25/04/23	Wed 24/05/23	0 days	319,276,282	323SS+14 days,330	ME - D x 2~4 men
329	329	5.17.8.3.3.11	Pipework pressure tests	30 days	Tue 25/04/23	Wed 24/05/23	0 days	319	323SS+14 days,330	ME - D x 2~4 men
330	330	5.17.8.3.3.12	Installation of instrumentations, EQT035-1	90 days	Thu 25/05/23	Tue 22/08/23	137 days	328,329,52		ME - A x 4~6 men
331	331	5.17.8.3.3.13	Installation of Platforms, Covers etc, EQT050	180 days	Mon 26/12/22	Fri 23/06/23	197 days			ME - D x 2~4 men
332	332	5.17.8.3.3.14	Site Acceptance Tests - mechanical aspects including alignment and levels checks, leal	120 days	Tue 25/04/23	Tue 22/08/23	137 days	319		ME - D x 2~4 men
333	**333**	**5.17.8.3.4**	**Electrical Installations for Inlet Works No. 1**	**300 days**	**Mon 09/01/23**	**Sat 04/11/23**	**58 days**	**318SS+14 days**	**345**	
334	334	5.17.8.3.4.1	Installation of LV Switchboards, IW	60 days	Mon 09/01/23	Thu 09/03/23	30 days	289	339	LV - A x 4~6 men
335	335	5.17.8.3.4.2	Installation of HV Switchboards, IW	60 days	Mon 09/01/23	Thu 09/03/23	30 days	293	339	LV - A x 4~6 men
336	336	5.17.8.3.4.3	Installation of Transformer, IW, EQT032	60 days	Mon 09/01/23	Thu 09/03/23	30 days	296	339	EE - A x 4~6 men
337	337	5.17.8.3.4.4	Installation of PLC Panels, IW	45 days	Mon 09/01/23	Wed 22/02/23	45 days	300	339	EE - B x 4~6 men
338	338	5.17.8.3.4.5	Installation of cable trays and cable containments	90 days	Mon 09/01/23	Sat 08/04/23	0 days	318SS	339	EE - C x 4~6 men
339	339	5.17.8.3.4.6	Cables laying and terminations	90 days	Sun 09/04/23	Fri 07/07/23	0 days	334,336,337,338,3	340,343,341	EE - C x 4~6 men
340	340	5.17.8.3.4.7	Energisation of LV Switchboards, IW	0 days	Fri 07/07/23	Fri 07/07/23	178 days	339,306FF+30 days	345	LV - A x 4~6 men
341	341	5.17.8.3.4.8	Site Acceptance Tests - Electrical aspects including voltage and current tests, equipme	120 days	Sat 08/07/23	Sat 04/11/23	63 days	339		LV - A x 4~6 men
342	**342**	**5.17.8.3.5**	**SCADA Systems, Inlet Works**	**105 days**	**Sat 08/07/23**	**Fri 20/10/23**	**78 days**			



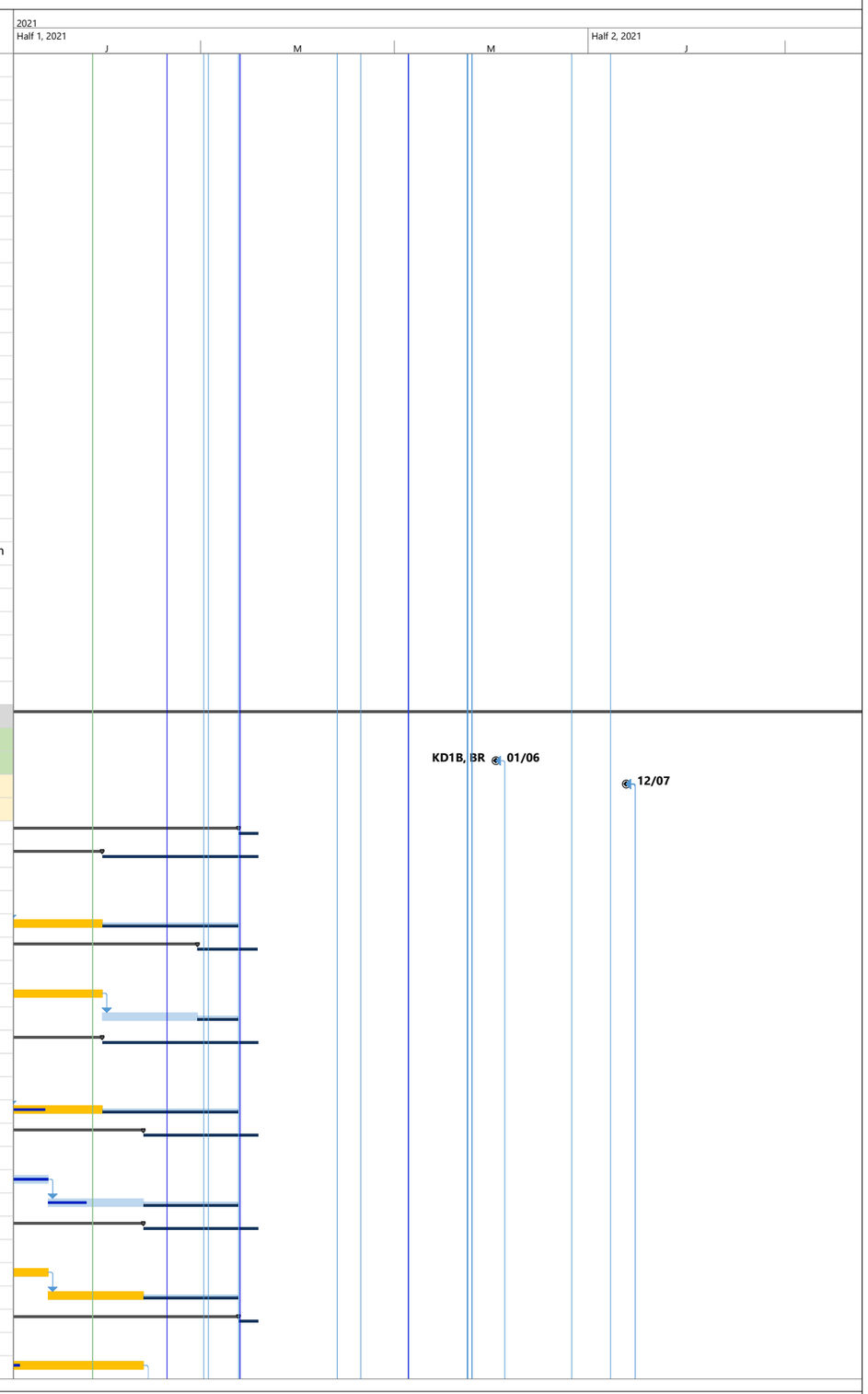
ID	ID	WBS	Task Name	Duration between Task Start and Finish	Start	Finish	Float Time	Predecessors	Successors	Resource Names
343	343	5.17.8.3.5.1	Configuration of PLC System, IW	45 days	Sat 08/07/23	Mon 21/08/23	0 days	339	344	PLC - A x 1 man
344	344	5.17.8.3.5.2	Site Acceptance Test for PLC System at Inlet Works No. 1	60 days	Tue 22/08/23	Fri 20/10/23	51 days	343	345,1262	
345	**345**	**5.17.8.3.6**	**Site Acceptance Test for E&M Equip & Instrumentations calibration, IW**	**15 days**	**Tue 02/01/24**	**Tue 16/01/24**	**0 days**	**318,333,340,470,5**	**346**	
346	**346**	**5.17.8.3.7**	**System Commissioning for E&M Equip at Inlet Works No. 1**	**15 edays**	**Tue 16/01/24**	**Wed 31/01/24**	**0 edays**	**345**	**347**	
347	**347**	**5.17.8.3.8**	**Risk Allowances for completion of Processing Plant at Inlet Works No. 1**	**7 edays**	**Wed 31/01/24**	**Wed 07/02/24**	**0.63 edays**	**346,355**	**1258**	
348	**348**	**5.17.8.3.9**	**Building Services Installations for Inlet Works No. 1**	**300 days**	**Sun 26/03/23**	**Fri 19/01/24**	**17 days**	**305FS+120 days,25**		
349	349	5.17.8.3.9.1	Mechanical Ventilation and Air Conditioning System, IW	150 days	Sun 26/03/23	Tue 22/08/23	30 days		355	MVAC - B x 4~6 men
350	350	5.17.8.3.9.2	Lighting and Power Distribution System, IW	180 days	Sun 26/03/23	Thu 21/09/23	0 days		355	BS - A x 4~6 men
351	351	5.17.8.3.9.3	Plumbing Installation, IW	120 days	Sun 26/03/23	Sun 23/07/23	60 days	1229	1231,355	Pb - A x 4~6 men
352	352	5.17.8.3.9.4	CCTV Installation (5 indoor +5 outdoor Cameras), IW	90 days	Mon 24/04/23	Sat 22/07/23	51 days	305SS+150 days	355,1261	BS - B x 4~6 men
353	353	5.17.8.3.9.5	Fire Services Installation, IW	120 days	Mon 24/04/23	Mon 21/08/23	31 days	305SS+150 days	1182,1194,1195,35	FS - A x 4~6 men
354	354	5.17.8.3.9.6	Earthing and Lightning Protection System, IW	60 days	Wed 24/05/23	Sat 22/07/23	61 days	305SS+180 days	355	BS - C x 2~4 men
355	355	5.17.8.3.9.7	Testing and Commissioning of Building Services Installations, IW	120 days	Fri 22/09/23	Fri 19/01/24	12 days	349,350,351,352,3	347	BS - C x 2~4 men
356	**356**	**5.18**	**Primary Sedimentation Tanks No. 1 ~ 4, Portion B-3 (PS 6B2.2)**	**1371 days**	**Wed 01/07/20**	**Mon 01/04/24**	**0 days**			
357	357	5.18.1	Planned Key Date Completion Date - KD1A, PST No. 1~4	0 days	Fri 30/10/20	Fri 30/10/20	0 days	391FF,392FF		
358	358	5.18.2	Planned Key Date Completion Date - KD1B, PST No. 1~4	1 day	Tue 01/06/21	Tue 01/06/21	0 days	393FF		
359	359	5.18.3	Planned Sectional Completion Date - Section 1, PST No. 1~4	0 days	Mon 12/07/21	Mon 12/07/21	0 days	396FF,395FF,394FF		
360	360	5.18.4	Planned Sectional Completion Date - Section 2, PST No. 1~4	0 days	Mon 01/04/24	Mon 01/04/24	0 days	484FF		
361	**361**	**5.18.5**	**Selection of Suppliers for major plant and materials for PST No. 1~4**	**230 days**	**Wed 01/07/20**	**Mon 15/02/21**	**47 days**			
362	**362**	**5.18.5.1**	**PST - lamella plate settlers, C11, ref. EQT014**	**90 days**	**Wed 01/07/20**	**Mon 28/09/20**	**187 days**			
363	363	5.18.5.1.1	Submission for acceptance of purchasing package	30 days	Wed 01/07/20	Thu 30/07/20	0 days		364	
364	364	5.18.5.1.2	Invitation of quotations for purchasing package	30 days	Fri 31/07/20	Sat 29/08/20	0 days	363	365	
365	365	5.18.5.1.3	Acceptance of conforming quotation	30 days	Sun 30/08/20	Mon 28/09/20	140 days	364	394	
366	**366**	**5.18.5.2**	**PST - reciprocating type bottom scrapers, C11, ref. EQT014**	**135 days**	**Wed 01/07/20**	**Thu 12/11/20**	**142 days**			
367	367	5.18.5.2.1	Submission for acceptance of purchasing package	45 days	Wed 01/07/20	Fri 14/08/20	0 days		368	
368	368	5.18.5.2.2	Invitation of quotations for purchasing package	60 days	Sat 15/08/20	Tue 13/10/20	0 days	367	369	
369	369	5.18.5.2.3	Acceptance of conforming quotation	30 days	Wed 14/10/20	Thu 12/11/20	95 days	368	394	
370	**370**	**5.18.5.3**	**PST - surface scum skimmers, C11, ref. EQT015**	**90 days**	**Tue 07/07/20**	**Sun 04/10/20**	**181 days**			
371	371	5.18.5.3.1	Submission for acceptance of purchasing package	30 days	Tue 07/07/20	Wed 05/08/20	0 days		372	
372	372	5.18.5.3.2	Invitation of quotations for purchasing package	30 days	Thu 06/08/20	Fri 04/09/20	0 days	371	373	
373	373	5.18.5.3.3	Acceptance of conforming quotation	30 days	Sat 05/09/20	Sun 04/10/20	134 days	372	394	
374	**374**	**5.18.5.4**	**PST - scum collector pipes, C11, ref. EQT015**	**210 days**	**Wed 01/07/20**	**Tue 26/01/21**	**67 days**			
375	375	5.18.5.4.1	Submission for acceptance of purchasing package	120 days	Wed 01/07/20	Wed 28/10/20	0 days		376	
376	376	5.18.5.4.2	Invitation of quotations for purchasing package	60 days	Thu 29/10/20	Sun 27/12/20	0 days	375	377	
377	377	5.18.5.4.3	Acceptance of conforming quotation	30 days	Mon 28/12/20	Tue 26/01/21	20 days	376	394	
378	**378**	**5.18.5.5**	**PST - piston type primary sludge pumps, C11, ref. EQT016**	**210 days**	**Wed 01/07/20**	**Tue 26/01/21**	**0 days**			
379	379	5.18.5.5.1	Submission for acceptance of purchasing package	120 days	Wed 01/07/20	Wed 28/10/20	0 days		380	
380	380	5.18.5.5.2	Invitation of quotations for purchasing package	60 days	Thu 29/10/20	Sun 27/12/20	0 days	379	381	
381	381	5.18.5.5.3	Acceptance of conforming quotation (Completed)	30 days	Mon 28/12/20	Tue 26/01/21	0 days	380	394	
382	**382**	**5.18.5.6**	**PST - drain pumps, C11, ref. EQT007**	**210 days**	**Tue 14/07/20**	**Mon 08/02/21**	**0 days**			
383	383	5.18.5.6.1	Submission for acceptance of purchasing package	120 days	Tue 14/07/20	Tue 10/11/20	0 days		384	
384	384	5.18.5.6.2	Invitation of quotations for purchasing package	60 days	Wed 11/11/20	Sat 09/01/21	0 days	383	385	
385	385	5.18.5.6.3	Acceptance of conforming quotation (Completed)	30 days	Sun 10/01/21	Mon 08/02/21	0 days	384	394	
386	**386**	**5.18.5.7**	**PST - air blowers, C11, ref. EQT018**	**210 days**	**Tue 21/07/20**	**Mon 15/02/21**	**47 days**			
387	387	5.18.5.7.1	Submission for acceptance of purchasing package	120 days	Tue 21/07/20	Tue 17/11/20	0 days		388	
388	388	5.18.5.7.2	Invitation of quotations for purchasing package	60 days	Wed 18/11/20	Sat 16/01/21	0 days	387	389	
389	389	5.18.5.7.3	Acceptance of conforming quotation	30 days	Sun 17/01/21	Mon 15/02/21	0 days	388	394	
390	**390**	**5.18.6**	**Design Submissions for PST No. 1~ 4**	**336 days**	**Sat 01/08/20**	**Fri 02/07/21**	**10 days**			
391	391	5.18.6.1	Electrical schematic drawings for PST No. 1 ~4	60 days	Sat 01/08/20	Tue 29/09/20	31 days		357FF	
392	392	5.18.6.2	CDS080-2 - Civil and dimensional requirements drawings for PST No. 1~4 up to +8.0 mPD	50 days	Tue 01/09/20	Tue 20/10/20	0 days		357FF	
393	393	5.18.6.3	CDS081-2 - Civil and dimensional requirements drawings for PST No. 1 ~ 4	150 days	Tue 01/09/20	Thu 28/01/21	124 days		358FF	
394	394	5.18.6.4	CDS003 - Detailed Design for Primary Sedimentation Tanks No. 1~4	100 edays	Mon 15/02/21	Wed 26/05/21	0.63 edays	365,369,373,377,3	401,404,407,410,41	
395	395	5.18.6.5	CDS022 - Detailed Design for Electrical Installations for PST No. 1~4	30 edays	Sun 23/05/21	Tue 22/06/21	0.63 edays	72,82,90,185FF	73,435,359FF	
396	396	5.18.6.6	CDS034-2 - Detailed Design for Electrical Installations BS at PST No. 1~4	90 edays	Fri 12/03/21	Thu 10/06/21	32.38 edays	133	477,359FF	
397	397	5.18.6.7	CDS025-2 - Detailed Design for LV Switchboards for PST No. 1~4	60 edays	Mon 03/05/21	Fri 02/07/21	0.63 edays	68	431,359FF	
398	398	5.18.6.8	CDS050-2 - Detailed Design for Lifting Appliances - PST No. 1 ~ 4	150 edays	Tue 01/09/20	Fri 29/01/21	0 edays	113	428,359FF	
399	**399**	**5.18.7**	**Manufacturing and Delivery of Plant & Materials**	**790 days**	**Fri 29/01/21**	**Wed 29/03/23**	**253 days**			



ID	ID	WBS	Task Name	Duration between Task Start and Finish	Start	Finish	Float Time	Predecessors	Successors	Resource Names
400	**400**	**5.18.7.1**	**Lamella Plate Settlers, EQT014**	**672 days**	**Thu 27/05/21**	**Wed 29/03/23**	**193 days**			
401	401	5.18.7.1.1	Manufacturing and Factory Acceptance Test of Plant	300 days	Thu 27/05/21	Tue 22/03/22	327 days	394	402	
402	402	5.18.7.1.2	Shipping and Delivery of Plant to site	45 days	Mon 13/02/23	Wed 29/03/23	143 days	401,439SS-60 eday	453	
403	**403**	**5.18.7.2**	**Reciprocating Type Bottom Scrappers, EQT014**	**672 days**	**Thu 27/05/21**	**Wed 29/03/23**	**163 days**			
404	404	5.18.7.2.1	Manufacturing and Factory Acceptance Test of Plant	300 days	Thu 27/05/21	Tue 22/03/22	327 days	394	405	
405	405	5.18.7.2.2	Shipping and Delivery of Plant to site	45 days	Mon 13/02/23	Wed 29/03/23	16 days	404,439SS-60 eday	454	
406	**406**	**5.18.7.3**	**Surface Scum Skimmers, EQT015**	**672 days**	**Thu 27/05/21**	**Wed 29/03/23**	**253 days**			
407	407	5.18.7.3.1	Manufacturing and Factory Acceptance Test of Plant	300 days	Thu 27/05/21	Tue 22/03/22	327 days	394	408	
408	408	5.18.7.3.2	Shipping and Delivery of Plant to site	45 days	Mon 13/02/23	Wed 29/03/23	203 days	407,439SS-60 eday	455	
409	**409**	**5.18.7.4**	**Surface Scum Collection Pipes, EQT015**	**672 days**	**Thu 27/05/21**	**Wed 29/03/23**	**253 days**			
410	410	5.18.7.4.1	Manufacturing and Factory Acceptance Test of Plant	300 days	Thu 27/05/21	Tue 22/03/22	327 days	394	411	
411	411	5.18.7.4.2	Shipping and Delivery of Plant to site	45 days	Mon 13/02/23	Wed 29/03/23	203 days	410,439SS-60 eday	456	
412	**412**	**5.18.7.5**	**Piston Type Primary Sludge Pumps, EQT016**	**672 days**	**Thu 27/05/21**	**Wed 29/03/23**	**133 days**			
413	413	5.18.7.5.1	Manufacturing and Factory Acceptance Test of Plant	300 days	Thu 27/05/21	Tue 22/03/22	327 days	394	414	
414	414	5.18.7.5.2	Shipping and Delivery of Plant to site	45 days	Mon 13/02/23	Wed 29/03/23	106 days	413,439SS-60 eday	457	
415	**415**	**5.18.7.6**	**Drain Pumps, EQT007**	**672 days**	**Thu 27/05/21**	**Wed 29/03/23**	**163 days**			
416	416	5.18.7.6.1	Manufacturing and Factory Acceptance Test of Plant	300 days	Thu 27/05/21	Tue 22/03/22	327 days	394	417	
417	417	5.18.7.6.2	Shipping and Delivery of Plant to site	45 days	Mon 13/02/23	Wed 29/03/23	136 days	416,439SS-60 eday	458	
418	**418**	**5.18.7.7**	**Air Blower, EQT018**	**672 days**	**Thu 27/05/21**	**Wed 29/03/23**	**193 days**			
419	419	5.18.7.7.1	Manufacturing and Factory Acceptance Test of Plant	300 days	Thu 27/05/21	Tue 22/03/22	327 days	394	420	
420	420	5.18.7.7.2	Shipping and Delivery of Plant to site	45 days	Mon 13/02/23	Wed 29/03/23	166 days	419,439SS-60 eday	459	
421	**421**	**5.18.7.8**	**Stoplogs and Penstocks, EQT013**	**672 days**	**Thu 27/05/21**	**Wed 29/03/23**	**43 days**			
422	422	5.18.7.8.1	Manufacturing and Factory Acceptance Test of Plant	240 days	Thu 27/05/21	Fri 21/01/22	387 days	394	423	
423	423	5.18.7.8.2	Shipping and Delivery of Plant to site	45 days	Mon 13/02/23	Wed 29/03/23	16 days	439SS-60 edays,42	451	
424	**424**	**5.18.7.9**	**Valves, EQT036**	**672 days**	**Thu 27/05/21**	**Wed 29/03/23**	**43 days**			
425	425	5.18.7.9.1	Manufacturing and Factory Acceptance Test of Plant	240 days	Thu 27/05/21	Fri 21/01/22	387 days	394	426	
426	426	5.18.7.9.2	Shipping and Delivery of Plant to site	45 days	Mon 13/02/23	Wed 29/03/23	16 days	425,439SS-60 eday	452	
427	**427**	**5.18.7.10**	**Lifting Appliances**	**790 days**	**Fri 29/01/21**	**Wed 29/03/23**	**66 days**			
428	428	5.18.7.10.1	Manufacturing and Factory Acceptance Test of Plant	210 days	Fri 29/01/21	Thu 26/08/21	535 days	398	429	
429	429	5.18.7.10.2	Shipping and Delivery of Plant to site	45 days	Mon 13/02/23	Wed 29/03/23	16 days	428,439SS-60 eday	442	
430	**430**	**5.18.7.11**	**LV Switchboards**	**635 days**	**Sat 03/07/21**	**Wed 29/03/23**	**53 days**			
431	431	5.18.7.11.1	PST - Manufacturing of Plant	300 days	Sat 03/07/21	Thu 28/04/22	0 days	397	432	
432	432	5.18.7.11.2	PST - Factory Acceptance Test of Plant (to be witnessed by PM)	90 days	Fri 29/04/22	Wed 27/07/22	200 days	431	433	
433	433	5.18.7.11.3	PST - Shipping and Delivery of Plant to site	45 days	Mon 13/02/23	Wed 29/03/23	16 days	432,439SS-60 eday	464	
434	**434**	**5.18.7.12**	**PLC System**	**645 days**	**Wed 23/06/21**	**Wed 29/03/23**	**53 days**			
435	435	5.18.7.12.1	Manufacturing of Plant, PLC for PST	300 days	Wed 23/06/21	Mon 18/04/22	0 days	395	436	
436	436	5.18.7.12.2	Factory Acceptance Test of Plant, PLC for PST (To be witnessed by PM)	60 days	Tue 19/04/22	Fri 17/06/22	240 days	435	437	
437	437	5.18.7.12.3	Shipping and Delivery of Plant to site	45 days	Mon 13/02/23	Wed 29/03/23	16 days	436,439SS-60 eday	465	
438	**438**	**5.18.8**	**Site Installation Work**	**298 days**	**Fri 14/04/23**	**Mon 05/02/24**	**0 days**			
439	439	5.18.8.1	Tentative Civil Handover Date, Portion B-3, PST No. 1~4 (Rev. 5)	1 day	Fri 14/04/23	Fri 14/04/23	0 days		442,477FS+90 days,	
440	**440**	**5.18.8.2**	**Commencement of E&M Installation at PST No. 1~4**	**297 days**	**Sat 15/04/23**	**Mon 05/02/24**	**0 days**	**439**		**403**
441	441	5.18.8.2.1	Provision of Temporary Water Supply, Electricity Supply, Lighting Welfare facilities etc.,	30 days	Sat 15/04/23	Sun 14/05/23	0 days	439		
442	**442**	**5.18.8.2.2**	**Installation of Lifting Appliances at PST No. 1~4**	**127 days**	**Sat 15/04/23**	**Sat 19/08/23**	**50 days**	**439,429**		
443	443	5.18.8.2.2.1	Basement EOT Crane LA-02-01 SWL 10t	30 days	Sat 15/04/23	Sun 14/05/23	0 days		444,445,449	LA - A x 4~6 men
444	444	5.18.8.2.2.2	Coping Level EOT Crane LA-02-02 SWL 5t	30 days	Mon 15/05/23	Tue 13/06/23	60 days	443	449	LA - A x 4~6 men
445	445	5.18.8.2.2.3	Coping Level EOT Crane LA-02-03 SWL 5t	30 days	Mon 15/05/23	Tue 13/06/23	0 days	443	446,447,449	LA - B x 4~6 men
446	446	5.18.8.2.2.4	Coping Level EOT Crane LA-02-04 SWL 5t	30 days	Wed 14/06/23	Thu 13/07/23	30 days	445	449	LA - A x 4~6 men
447	447	5.18.8.2.2.5	Coping Level EOT Crane LA-02-05 SWL 5t	30 days	Wed 14/06/23	Thu 13/07/23	0 days	445	448,449	LA - B x 4~6 men
448	448	5.18.8.2.2.6	Coping Level EOT Crane LA-02-06 SWL 2t	30 days	Fri 14/07/23	Sat 12/08/23	0 days	447	449	LA - A x 4~6 men
449	449	5.18.8.2.2.7	T&C, Loading Test for Lifting Appliances at PST No. 1~4	7 days	Sun 13/08/23	Sat 19/08/23	0 days	443,444,445,446,4	453	LA - A x 4~6 men
450	**450**	**5.18.8.2.3**	**Mechanical Installations at PST No. 1~4**	**240 days**	**Sat 15/04/23**	**Sun 10/12/23**	**20 days**		**474**	
451	451	5.18.8.2.3.1	Installation of penstocks and stoplogs (Penstock 18nos, Stoplogs 14 nos), EQT013	90 days	Sat 15/04/23	Thu 13/07/23	0 days	423	457,462	ME - E x 4~6 men
452	452	5.18.8.2.3.2	Installation of pipework and valves, EQT036	240 days	Sat 15/04/23	Sun 10/12/23	27 days	426		ME - B x 4~6 men
453	453	5.18.8.2.3.3	Installation of lamella plate settlers (x4), EQT014	60 days	Sun 20/08/23	Wed 18/10/23	0 days	454,449,402	455,456	ME - A x 4~6 men
454	454	5.18.8.2.3.4	Installation of reciprocating type bottom scrapers (x4), EQT014	30 days	Sat 15/04/23	Sun 14/05/23	97 days	405	453	ME - A x 4~6 men
455	455	5.18.8.2.3.5	Installation of surface scum skimmers (x1), EQT015	30 days	Thu 19/10/23	Fri 17/11/23	50 days	453,408		ME - A x 4~6 men
456	456	5.18.8.2.3.6	Installation of scum collector pipes (x1), EQT015	30 days	Thu 19/10/23	Fri 17/11/23	50 days	453,411		ME - B x 4~6 men



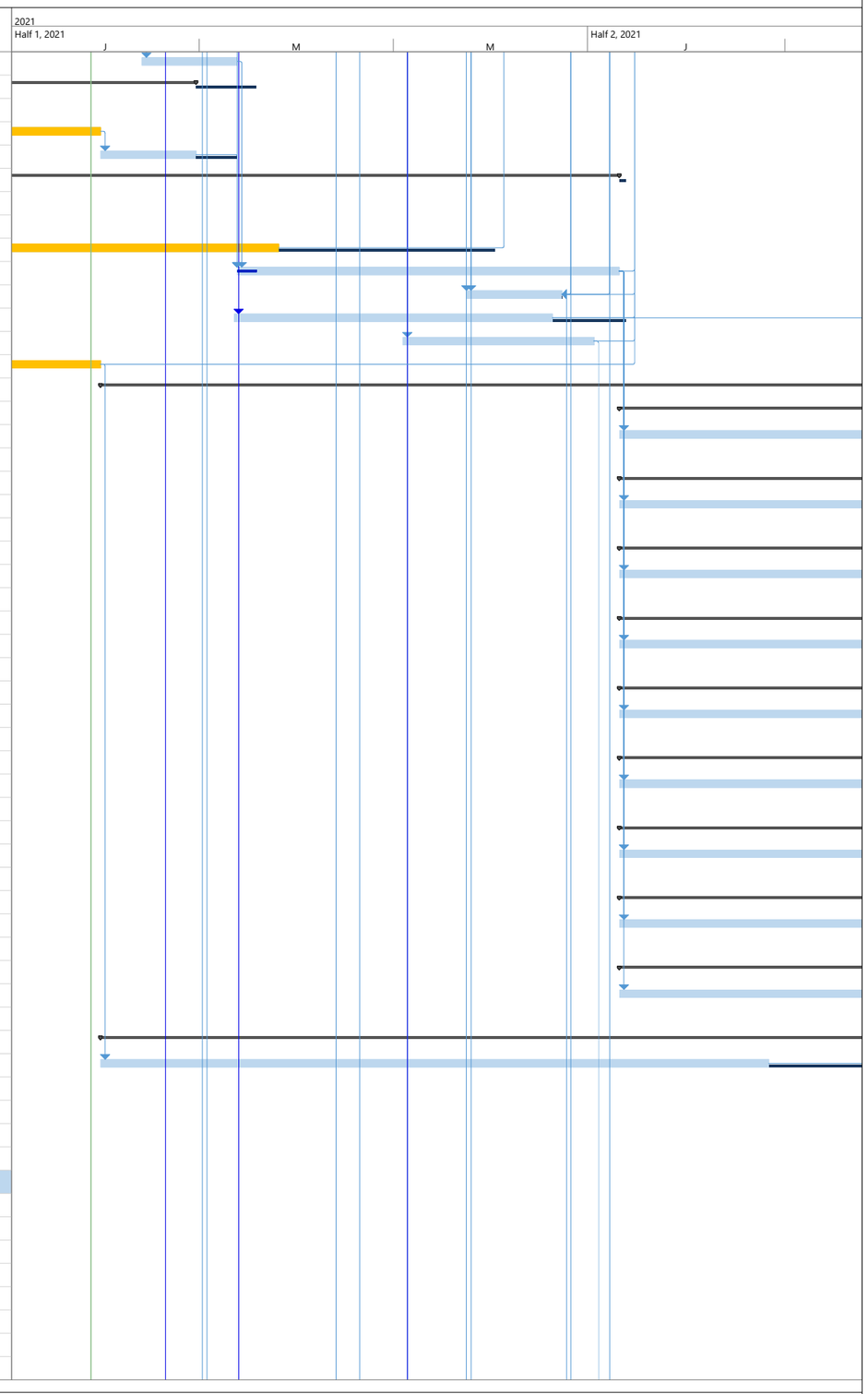
ID	ID	WBS	Task Name	Duration between Task Start and Finish	Start	Finish	Float Time	Predecessors	Successors	Resource Names
457	457	5.18.8.2.3.7	Installation of piston type primary sludge pumps (x3), EQT016	30 days	Fri 14/07/23	Sat 12/08/23	0 days	451,414	458	ME - C x 4~6 men
458	458	5.18.8.2.3.8	Installation of drain pumps (x1), EQT007	30 days	Sun 13/08/23	Mon 11/09/23	0 days	457,417	459	ME - C x 4~6 men
459	459	5.18.8.2.3.9	Installation of air blowers (x2), EQT018	30 days	Tue 12/09/23	Wed 11/10/23	0 days	458,420	460	ME - C x 4~6 men
460	460	5.18.8.2.3.10	Installation of instrumentations, EQT035-1	60 days	Thu 12/10/23	Sun 10/12/23	27 days	459,52		ME - C x 4~6 men
461	461	5.18.8.2.3.11	Installation of Platforms, Covers etc., PST, EQT050	60 days	Thu 21/09/23	Sun 19/11/23	48 days			ME - F x 4~6 men
462	462	5.18.8.2.3.12	Site Acceptance Tests - mechanical aspects including alignment and levels checks, leal	150 days	Fri 14/07/23	Sun 10/12/23	27 days	451		ME - D x 2~4 men
463	**463**	**5.18.8.2.4**	**Electrical Installations for PST No. 1~4**	**260 days**	**Sat 15/04/23**	**Sat 30/12/23**	**0 days**	**439**	**474**	
464	464	5.18.8.2.4.1	Installation of LV Switchboards, PST	60 days	Sat 15/04/23	Tue 13/06/23	30 days	433	467	LV - A x 4~6 men
465	465	5.18.8.2.4.2	Installation of PLC Panel, PST	60 days	Sat 15/04/23	Tue 13/06/23	30 days	437	467	
466	466	5.18.8.2.4.3	Installation of cable trays and cable containments, PST	90 days	Sat 15/04/23	Thu 13/07/23	0 days		467	
467	467	5.18.8.2.4.4	Cables laying and terminations, PST	90 days	Fri 14/07/23	Wed 11/10/23	0 days	464,465,466	469FS-30 days,472,4	
468	468	5.18.8.2.4.5	Tentative Civil Handover Date, LV cables draw pits from IW to PST	1 day	Thu 20/07/23	Thu 20/07/23	24 days		469FF+30 days	
469	469	5.18.8.2.4.6	Energisation of LV Switchboards, PST	1 day	Tue 12/09/23	Tue 12/09/23	109 days	467FS-30 days,468	474	LV - A x 4~6 men
470	470	5.18.8.2.4.7	Site Acceptance Tests - Electrical aspects including voltage and current tests, equipme	80 days	Thu 12/10/23	Sat 30/12/23	2 days	467	345	LV - A x 4~6 men
471	**471**	**5.18.8.2.5**	**SCADA Systems, PST No. 1~4**	**60 days**	**Thu 12/10/23**	**Sun 10/12/23**	**57 days**			
472	472	5.18.8.2.5.1	Configuration of PLC System	45 days	Thu 12/10/23	Sat 25/11/23	0 days	467	473	PLC - B x 1 man
473	473	5.18.8.2.5.2	Site Acceptance Test for PLC System at PST No. 1~4	15 days	Sun 26/11/23	Sun 10/12/23	0 days	472	475FF,1262	
474	**474**	**5.18.8.2.6**	**Site Acceptance Test for E&M Equip and Instrumentations calibrations at PST No. 1~4**	**15 edays**	**Sat 30/12/23**	**Sun 14/01/24**	**0.63 edays**	**450,463,469**	**475**	
475	**475**	**5.18.8.2.7**	**System Commissioning for E&M Equip at PST No, 1~4**	**15 days**	**Mon 15/01/24**	**Mon 29/01/24**	**0 days**	**474,473FF**	**476**	
476	476	5.18.8.2.8	Risk Allowances for Completion of Processing Plant at PST No. 1~4	7 edays	Mon 29/01/24	Mon 05/02/24	2.63 edays	475	1258	
477	**477**	**5.18.8.2.9**	**Building Services Installations for PST No. 1~4**	**150 days**	**Fri 14/07/23**	**Sun 10/12/23**	**2 days**	**439FS+90 days,396**		
478	478	5.18.8.2.9.1	Mechanical Ventilation and Air Conditioning System, PST	90 days	Fri 14/07/23	Wed 11/10/23	0 days		484	MVAC - B x 4~6 men
479	479	5.18.8.2.9.2	Lighting and Power Distribution System, PST	90 days	Fri 14/07/23	Wed 11/10/23	0 days		484	BS - A x 4~6 men
480	480	5.18.8.2.9.3	Plumbing Installation, PST	80 days	Fri 14/07/23	Sun 01/10/23	0 days	1229	1231,484	Pb - B x 4~6 men
481	481	5.18.8.2.9.4	CCTV Installation (9 indoor + 2 outdoor Cameras), PST	60 days	Fri 14/07/23	Mon 11/09/23	0 days	439FS+60 days	484,1261	BS - B x 4~6 men
482	482	5.18.8.2.9.5	Fire Services Installation, PST	85 days	Fri 14/07/23	Fri 06/10/23	0 days		1182,1194,1195,48	FS - A x 4~6 men
483	483	5.18.8.2.9.6	Earthing and Lightning Protection System, PST	90 days	Fri 14/07/23	Wed 11/10/23	0 days		484	BS - C x 2~4 men
484	484	5.18.8.2.9.7	Testing and Commissioning of Building Services Installations, PST	60 days	Thu 12/10/23	Sun 10/12/23	113 days	478,479,480,481,4	360FF	BS - C x 2~4 men
485	**485**	**5.19**	**Bioreactors No. 2A & 2B, Portion B-4 (PS 6B2.4)**	**1326 days**	**Sat 15/08/20**	**Mon 01/04/24**	**0 days**			
486	486	5.19.1	Planned Key Date Completion Date - KD1A, BR 2A & 2B	0 days	Fri 30/10/20	Fri 30/10/20	0 days	520FF,521FF		
487	487	5.19.2	Planned Key Date Completion Date - KD1B, BR 2A & 2B	0 days	Tue 01/06/21	Tue 01/06/21	0 days	522FF		
488	488	5.19.3	Planned Sectional Completion Date - Section 1, BR 2A & 2B	0 days	Mon 12/07/21	Mon 12/07/21	0 days	523FF,524FF,525FF		
489	489	5.19.4	Planned Sectional Completion Date - Section 2, BR 2A & 2B	0 days	Mon 01/04/24	Mon 01/04/24	0 days	595FF,594FF		
490	**490**	**5.19.5**	**Selection of Suppliers for major plant and materials for BR 2A & 2B**	**193 days**	**Tue 01/09/20**	**Fri 12/03/21**	**6 days**			
491	**491**	**5.19.5.1**	**BR - pre-treatment fine screens (Marking Scheme Approach), EQT019**	**150 days**	**Tue 01/09/20**	**Thu 28/01/21**	**49 days**			
492	492	5.19.5.1.1	Submission for acceptance of purchasing package	60 days	Tue 01/09/20	Fri 30/10/20	0 days		493	
493	493	5.19.5.1.2	Invitation of quotations for purchasing package	60 days	Sat 31/10/20	Tue 29/12/20	0 days	492	494	
494	494	5.19.5.1.3	Acceptance of conforming quotation	30 days	Wed 30/12/20	Thu 28/01/21	43 days	493	523	
495	**495**	**5.19.5.2**	**BR - air diffusion system (Marking Scheme Approach), EQT017**	**180 days**	**Tue 01/09/20**	**Sat 27/02/21**	**19 days**			
496	496	5.19.5.2.1	Submission for acceptance of purchasing package including proposed marking scheme	90 days	Tue 01/09/20	Sun 29/11/20	0 days		497	
497	497	5.19.5.2.2	Invitation of quotations for purchasing package	60 days	Mon 30/11/20	Thu 28/01/21	0 days	496	498	
498	498	5.19.5.2.3	Acceptance of conforming quotation	30 days	Fri 29/01/21	Sat 27/02/21	13 days	497	523	
499	**499**	**5.19.5.3**	**BR - submersible mixers, C11, EQT020**	**150 days**	**Tue 01/09/20**	**Thu 28/01/21**	**49 days**			
500	500	5.19.5.3.1	Submission for acceptance of purchasing package	60 days	Tue 01/09/20	Fri 30/10/20	0 days		501	
501	501	5.19.5.3.2	Invitation of quotations for purchasing package	60 days	Sat 31/10/20	Tue 29/12/20	0 days	500	502	
502	502	5.19.5.3.3	Acceptance of conforming quotation	30 days	Wed 30/12/20	Thu 28/01/21	43 days	501	523	
503	**503**	**5.19.5.4**	**BR - mixed liquor return pumps, C11, EQT008**	**150 days**	**Mon 14/09/20**	**Wed 10/02/21**	**36 days**			
504	504	5.19.5.4.1	Submission for acceptance of purchasing package	60 days	Mon 14/09/20	Thu 12/11/20	0 days		505	
505	505	5.19.5.4.2	Invitation of quotations for purchasing package	60 days	Fri 13/11/20	Mon 11/01/21	0 days	504	506	
506	506	5.19.5.4.3	Acceptance of conforming quotation	30 days	Tue 12/01/21	Wed 10/02/21	30 days	505	523	
507	**507**	**5.19.5.5**	**BR - scum removal systems, C11, EQT021, EQT022**	**150 days**	**Mon 14/09/20**	**Wed 10/02/21**	**36 days**			
508	508	5.19.5.5.1	Submission for acceptance of purchasing package	60 days	Mon 14/09/20	Thu 12/11/20	0 days		509	
509	509	5.19.5.5.2	Invitation of quotations for purchasing package	60 days	Fri 13/11/20	Mon 11/01/21	0 days	508	510	
510	510	5.19.5.5.3	Acceptance of conforming quotation	30 days	Tue 12/01/21	Wed 10/02/21	30 days	509	523	
511	**511**	**5.19.5.6**	**BR - aeration blowers (Marking Scheme Approach), EQT039**	**180 days**	**Mon 14/09/20**	**Fri 12/03/21**	**6 days**			
512	512	5.19.5.6.1	Submission for acceptance of purchasing package including proposed marking scheme	90 days	Mon 14/09/20	Sat 12/12/20	0 days		513	
513	513	5.19.5.6.2	Invitation of quotations for purchasing package	60 days	Sun 13/12/20	Wed 10/02/21	0 days	512	514	



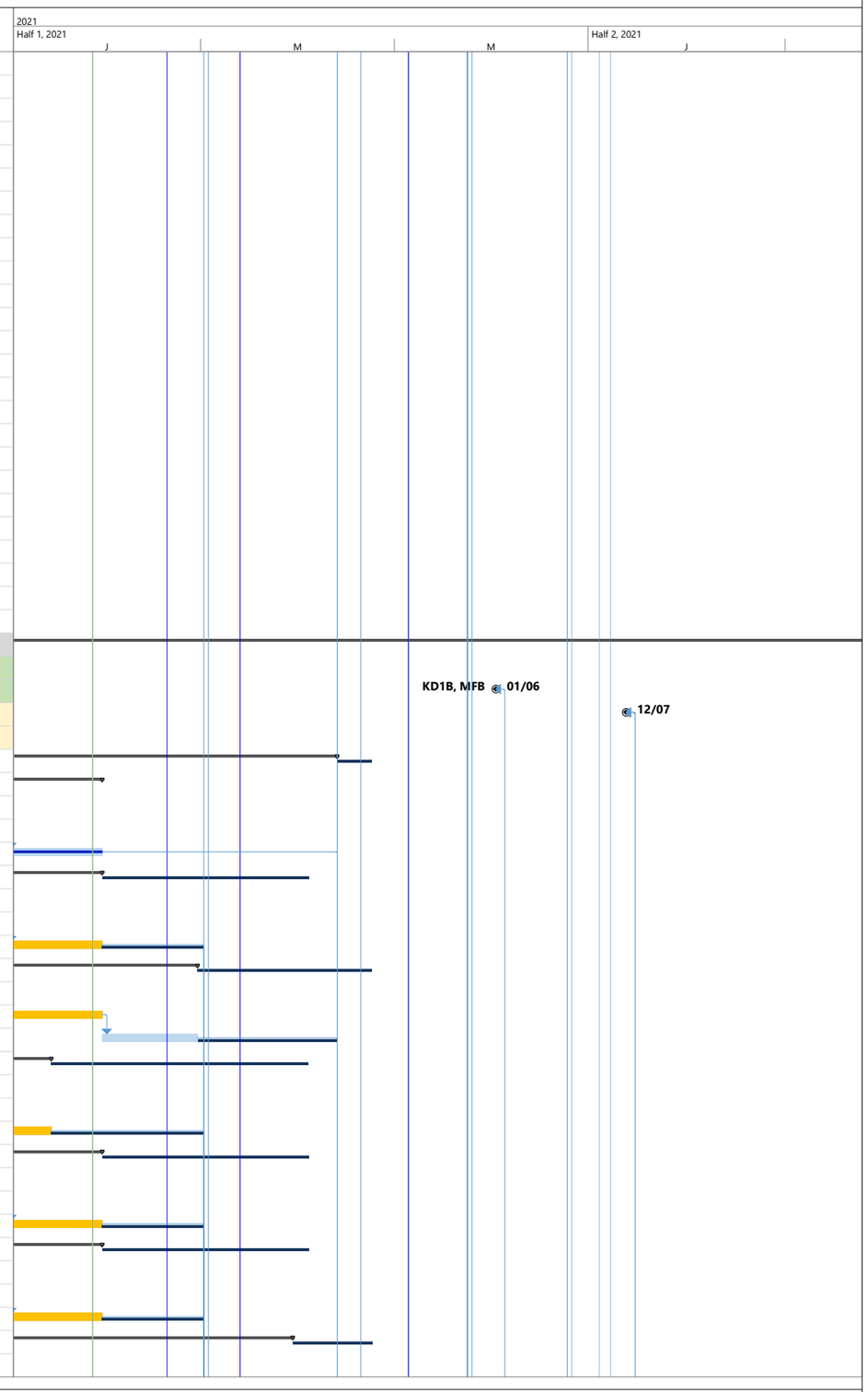
Bestwise
Project: DE/2018/04
Date: Tue 26/01/21

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

ID	ID	WBS	Task Name	Duration between Task Start and Finish	Start	Finish	Float Time	Predecessors	Successors	Resource Names
514	514	5.19.5.6.3	Acceptance of conforming quotation	30 days	Thu 11/02/21	Fri 12/03/21	0 days	513	523	
515	**515**	**5.19.5.7**	**BR - instrumentations, C11, EQT035-2**	**150 days**	**Thu 01/10/20**	**Sat 27/02/21**	**19 days**			
516	516	5.19.5.7.1	Submission for acceptance of purchasing package	60 days	Thu 01/10/20	Sun 29/11/20	0 days		517	
517	517	5.19.5.7.2	Invitation of quotations for purchasing package	60 days	Mon 30/11/20	Thu 28/01/21	0 days	516	518	
518	518	5.19.5.7.3	Acceptance of conforming quotation	30 days	Fri 29/01/21	Sat 27/02/21	13 days	517	523	
519	**519**	**5.19.6**	**Design Submissions for BR 2A & 2B**	**330 days**	**Sat 15/08/20**	**Sat 10/07/21**	**2 days**			
520	520	5.19.6.1	Electrical schematic drawings for BR No. 2A & 2B	60 days	Sat 15/08/20	Tue 13/10/20	17 days		486FF	
521	521	5.19.6.2	CDS080-3 - Civil and dimensional requirements drawings for BR 2A&2B up to +8.0 mPD	55 days	Tue 01/09/20	Sun 25/10/20	0 days		486FF	
522	522	5.19.6.3	CDS081-3 - Civil and dimensional requirements drawings for BR 2A & 2B	210 days	Fri 28/08/20	Thu 25/03/21	68 days		487FF	
523	523	5.19.6.4	CDS004 - Detailed Design for Bioreactor 2A and 2B	120 edays	Fri 12/03/21	Sat 10/07/21	0.63 edays	494,498,502,506,5	530,533,536,539,54	
524	524	5.19.6.5	CDS023 - Detailed Design for Electrical Installations for BR No. 2A & 2B	30 edays	Sun 23/05/21	Tue 22/06/21	0.63 edays	72,82,90,185FF	73,488FF,697	
525	525	5.19.6.6	CDS034-3 - Detailed Design for Electrical Installations BS at BR No. 2A & 2B	100 edays	Fri 12/03/21	Sun 20/06/21	22.38 edays	133	589,488FF,590	
526	526	5.19.6.7	CDS025-3 - Detailed Design for LV Switchboards for BR 2A and 2B	60 edays	Mon 03/05/21	Fri 02/07/21	0.63 edays	68	683,488FF	
527	527	5.19.6.8	CDS050-3 - Detailed Design for Lifting Appliances - BR 2A & 2B	120 edays	Thu 01/10/20	Fri 29/01/21	0 edays	113	557,488FF	
528	**528**	**5.19.7**	**Manufacturing and Delivery of Plant & Materials**	**740 days**	**Fri 29/01/21**	**Tue 07/02/23**	**258 days**			
529	**529**	**5.19.7.1**	**Pre-treatment Fine Screens, EQT019**	**577 days**	**Sun 11/07/21**	**Tue 07/02/23**	**185 days**			
530	530	5.19.7.1.1	Manufacturing and Factory Acceptance Test of Plant	240 days	Sun 11/07/21	Mon 07/03/22	292 days	523	531	
531	531	5.19.7.1.2	Shipping and Delivery of Plant to site	45 days	Sun 25/12/22	Tue 07/02/23	16 days	530,560SS-60 eday	573	
532	**532**	**5.19.7.2**	**Air Diffusion System, EQT017**	**577 days**	**Sun 11/07/21**	**Tue 07/02/23**	**168 days**			
533	533	5.19.7.2.1	Manufacturing and Factory Acceptance Test of Plant	240 days	Sun 11/07/21	Mon 07/03/22	292 days	523	534	
534	534	5.19.7.2.2	Shipping and Delivery of Plant to site	45 days	Sun 25/12/22	Tue 07/02/23	83 days	533,560SS-60 eday	574	
535	**535**	**5.19.7.3**	**Submersible Mixer, EQT020**	**577 days**	**Sun 11/07/21**	**Tue 07/02/23**	**213 days**			
536	536	5.19.7.3.1	Manufacturing and Factory Acceptance Test of Plant	240 days	Sun 11/07/21	Mon 07/03/22	292 days	523	537	
537	537	5.19.7.3.2	Shipping and Delivery of Plant to site	45 days	Sun 25/12/22	Tue 07/02/23	44 days	536,560SS-60 eday	575	
538	**538**	**5.19.7.4**	**Mixed Liquor Return Pumps, EQT008**	**577 days**	**Sun 11/07/21**	**Tue 07/02/23**	**228 days**			
539	539	5.19.7.4.1	Manufacturing and Factory Acceptance Test of Plant	240 days	Sun 11/07/21	Mon 07/03/22	292 days	523	540	
540	540	5.19.7.4.2	Shipping and Delivery of Plant to site	45 days	Sun 25/12/22	Tue 07/02/23	16 days	539,560SS-60 eday	576	
541	**541**	**5.19.7.5**	**Sum Removal System, EQT021, EQT022**	**577 days**	**Sun 11/07/21**	**Tue 07/02/23**	**258 days**			
542	542	5.19.7.5.1	Manufacturing and Factory Acceptance Test of Plant	240 days	Sun 11/07/21	Mon 07/03/22	292 days	523	543	
543	543	5.19.7.5.2	Shipping and Delivery of Plant to site	45 days	Sun 25/12/22	Tue 07/02/23	46 days	542,560SS-60 eday	577	
544	**544**	**5.19.7.6**	**Aeration Blowers, EQT039**	**577 days**	**Sun 11/07/21**	**Tue 07/02/23**	**258 days**			
545	545	5.19.7.6.1	Manufacturing and Factory Acceptance Test of Plant (to be witnessed by PM)	240 days	Sun 11/07/21	Mon 07/03/22	292 days	523	546	
546	546	5.19.7.6.2	Shipping and Delivery of Plant to site	45 days	Sun 25/12/22	Tue 07/02/23	173 days	545,560SS-60 eday	578	
547	**547**	**5.19.7.7**	**Instrumentations, EQT035-2**	**577 days**	**Sun 11/07/21**	**Tue 07/02/23**	**243 days**			
548	548	5.19.7.7.1	Manufacturing and Factory Acceptance Test of Plant	240 days	Sun 11/07/21	Mon 07/03/22	292 days	523	549	
549	549	5.19.7.7.2	Shipping and Delivery of Plant to site	45 days	Sun 25/12/22	Tue 07/02/23	166 days	548,560SS-60 eday	579	
550	**550**	**5.19.7.8**	**Stoplogs and Penstocks, EQT013**	**577 days**	**Sun 11/07/21**	**Tue 07/02/23**	**33 days**			
551	551	5.19.7.8.1	Manufacturing and Factory Acceptance Test of Plant	240 days	Sun 11/07/21	Mon 07/03/22	292 days	523	552	
552	552	5.19.7.8.2	Shipping and Delivery of Plant to site	45 days	Sun 25/12/22	Tue 07/02/23	16 days	551,560SS-60 eday	571	
553	**553**	**5.19.7.9**	**Valves, EQT036**	**577 days**	**Sun 11/07/21**	**Tue 07/02/23**	**93 days**			
554	554	5.19.7.9.1	Manufacturing and Factory Acceptance Test of Plant	240 days	Sun 11/07/21	Mon 07/03/22	292 days	523	555	
555	555	5.19.7.9.2	Shipping and Delivery of Plant to site	45 days	Sun 25/12/22	Tue 07/02/23	16 days	554,560SS-60 eday	572	
556	**556**	**5.19.7.10**	**Lifting Appliances**	**740 days**	**Fri 29/01/21**	**Tue 07/02/23**	**101 days**			
557	557	5.19.7.10.1	Manufacturing and Factory Acceptance Test of Plant	210 days	Fri 29/01/21	Thu 26/08/21	485 days	527	558	
558	558	5.19.7.10.2	Shipping and Delivery of Plant to site	45 days	Sun 25/12/22	Tue 07/02/23	16 days	557,560SS-60 eday	564	
559	**559**	**5.19.8**	**Site Installation Work**	**348 days**	**Thu 23/02/23**	**Mon 05/02/24**	**0 days**			
560	560	5.19.8.1	Tentative Civil Handover Date, Portion B-4, BR2A & 2B (Rev. 5)	1 day	Thu 23/02/23	Thu 23/02/23	0 days		564,570,581,589FS+	
561	561	5.19.8.2	Tentative Civil Handover Date, LV cables draw pits from MFB2 to BR2	1 day	Thu 01/06/23	Thu 01/06/23	0 days		584FF+30 days	
562	**562**	**5.19.8.3**	**Commencement of E&M Installation at Bioreactor No. 2A & 2B**	**347 days**	**Fri 24/02/23**	**Mon 05/02/24**	**0 days**	**560**		
563	563	5.19.8.3.1	Provision of Temporary Water Supply, Electricity Supply, Lighting, Welfare facilities etc.,	7 days	Fri 24/02/23	Thu 02/03/23	0 days	560		
564	**564**	**5.19.8.3.2**	**Installation of Lifting Appliances at BR 2A & 2B**	**67 days**	**Fri 24/02/23**	**Mon 01/05/23**	**85 days**	**560,558**		
565	565	5.19.8.3.2.1	Coping Level EOT Crane LA-03-01 SWL 5t	30 days	Fri 24/02/23	Sat 25/03/23	0 days		567,568,569	LA - A x 4~6 men
566	566	5.19.8.3.2.2	Coping Level EOT Crane LA-03-02 SWL 5t	30 days	Fri 24/02/23	Sat 25/03/23	0 days		567,568,569	LA - B x 4~6 men
567	567	5.19.8.3.2.3	Coping Level EOT Crane LA-03-03 SWL 5t	30 days	Sun 26/03/23	Mon 24/04/23	0 days	565,566	569	LA - A x 4~6 men
568	568	5.19.8.3.2.4	Coping Level Mobile A-frame LA-03-04 SWL 4t	7 days	Sun 26/03/23	Sat 01/04/23	23 days	565,566	569	LA - B x 4~6 men
569	569	5.19.8.3.2.5	T&C, Loading Test for Lifting Appliances at Bioreactor No. 2A & 2B	7 days	Tue 25/04/23	Mon 01/05/23	0 days	565,566,567,568	574	LA - B x 4~6 men
570	**570**	**5.19.8.3.3**	**Mechanical Installations for E&M Equip at BR 2A & 2B**	**270 days**	**Fri 24/02/23**	**Mon 20/11/23**	**10 days**	**560**	**586**	



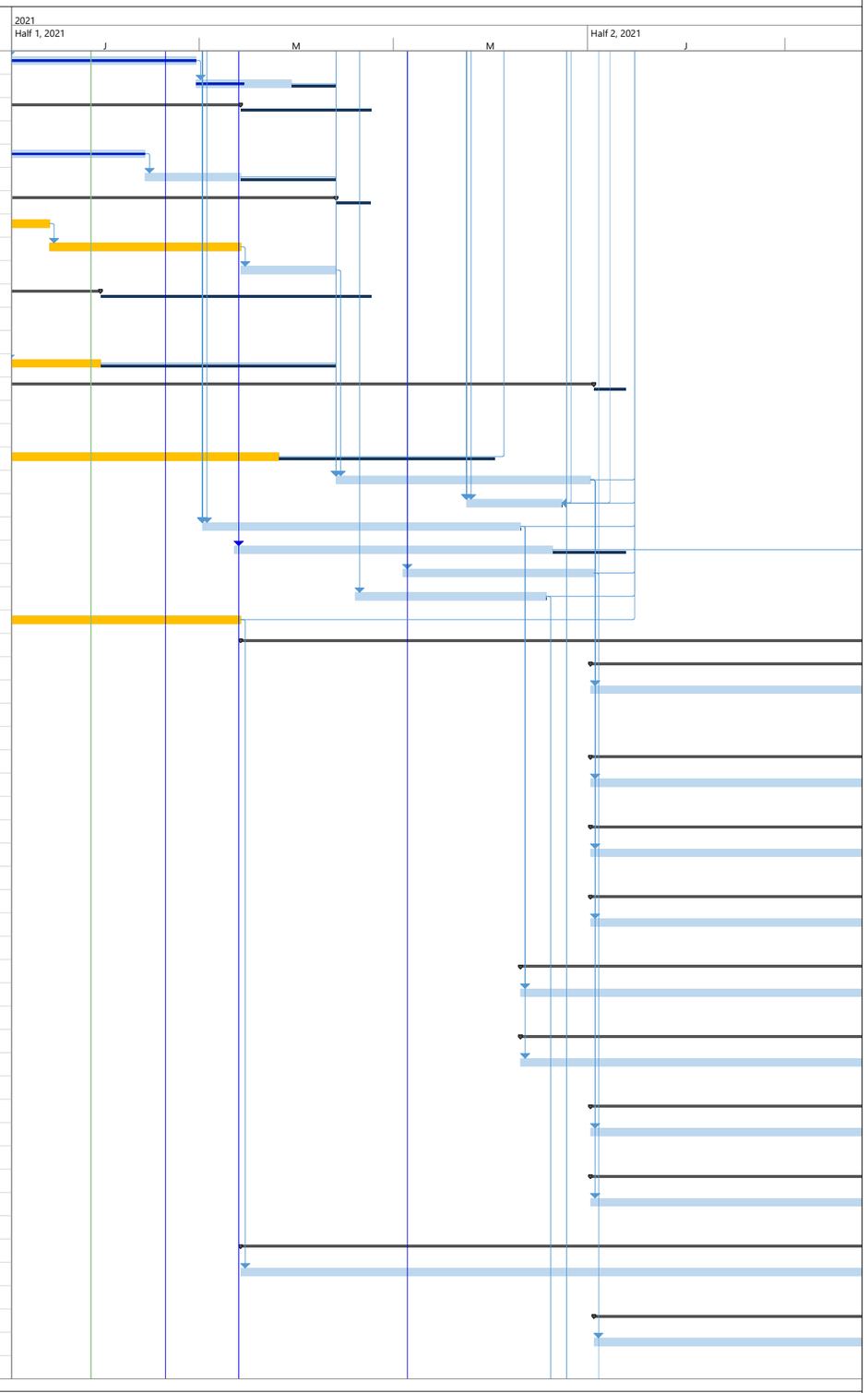
ID	ID	WBS	Task Name	Duration between Task Start and Finish	Start	Finish	Float Time	Predecessors	Successors	Resource Names
571	571	5.19.8.3.3.1	Installation of penstocks and stoplogs (Penstocks 8nos, Stoplogs 8nos), EQT013	90 days	Fri 24/02/23	Wed 24/05/23	0 days	552	580	ME - E x 4~6 men
572	572	5.19.8.3.3.2	Installation of pipework and valves, EQT036	150 days	Fri 24/02/23	Sun 23/07/23	0 days	555	579	ME - C x 4~6 men
573	573	5.19.8.3.3.3	Installation of pre-treatment fine screens (x4)	28 days	Fri 24/02/23	Thu 23/03/23	0 days	531	575	ME - A x 4~6 men
574	574	5.19.8.3.3.4	Installation of air diffusion system (x2), EQT017	90 days	Tue 02/05/23	Sun 30/07/23	0 days	569,534	578	ME - D x 2~4 men
575	575	5.19.8.3.3.5	Installation of submersible mixers (x16), EQT020	90 days	Fri 24/03/23	Wed 21/06/23	162 days	573,537	586	ME - B x 4~6 men
576	576	5.19.8.3.3.6	Installation of mixed liquor return pumps (x6), EQT008	30 days	Fri 24/02/23	Sat 25/03/23	0 days	540	577	ME - A x 4~6 men
577	577	5.19.8.3.3.7	Installation of scum removal systems (x2), EQT022	45 days	Sun 26/03/23	Tue 09/05/23	205 days	576,543	586	ME - B x 4~6 men
578	578	5.19.8.3.3.8	Installation of aeration blowers (x4), EQT039	45 days	Mon 31/07/23	Wed 13/09/23	78 days	574,546	586	ME - D x 2~4 men
579	579	5.19.8.3.3.9	Installation of instrumentations, EQT035-2	60 days	Mon 24/07/23	Thu 21/09/23	70 days	572,549	586	ME - D x 2~4 men
580	580	5.19.8.3.3.10	Site Acceptance Tests - mechanical aspects including alignment and levels checks, leal	180 days	Thu 25/05/23	Mon 20/11/23	10 days	571	586	ME - D x 2~4 men
581	**581**	**5.19.8.3.4**	**Electrical Installations for E&M Equip at BR 2A & 2B**	**280 days**	**Fri 24/02/23**	**Thu 30/11/23**	**0 days**	**560**	**586**	
582	582	5.19.8.3.4.1	Installation of cable trays and cable containments	120 days	Fri 24/02/23	Fri 23/06/23	0 days	560	583	
583	583	5.19.8.3.4.2	Cables laying and terminations	100 days	Sat 24/06/23	Sun 01/10/23	0 days	582	585,756	
584	584	5.19.8.3.4.3	Energisation of LV Switchboards, BR2	1 day	Sat 01/07/23	Sat 01/07/23	152 days	561FF+30 days	586	LV - A x 4~6 men
585	585	5.19.8.3.4.4	Site Acceptance Tests - Electrical aspects including voltage and current tests, equipme	60 days	Mon 02/10/23	Thu 30/11/23	32 days	583	345	LV - A x 4~6 men
586	**586**	**5.19.8.3.5**	**Site Acceptance Test for E&M Equip at BR 2A & 2B**	**30 edays**	**Thu 30/11/23**	**Sat 30/12/23**	**0.63 edays**	**570,575,577,578,5**	**587**	
587	**587**	**5.19.8.3.6**	**System Commissioning for E&M Equip at BR 2A & 2B**	**30 days**	**Sun 31/12/23**	**Mon 29/01/24**	**0 days**	**586,758**	**588**	
588	**588**	**5.19.8.3.7**	**Risk Allowances for Completion of Processing Plant at BR 2A & 2B**	**7 edays**	**Mon 29/01/24**	**Mon 05/02/24**	**2.63 edays**	**587**	**1258**	
589	589	5.19.8.3.8	Building Services Installations for BR 2A & 2B	195 days	Thu 25/05/23	Tue 05/12/23	12 days	560FS+90 edays,52		
590	590	5.19.8.3.8.1	Lighting and Power Distribution System, BR2	150 days	Thu 25/05/23	Sat 21/10/23	0 days	525	595	BS - A x 4~6 men
591	591	5.19.8.3.8.2	Plumbing Installation, BR2	120 days	Thu 25/05/23	Thu 21/09/23	10 days	1229	1231,595	Pb - A x 4~6 men
592	592	5.19.8.3.8.3	CCTV Installation (7 indoor + 2 outdoor Cameras), BR2	60 days	Sat 24/06/23	Tue 22/08/23	20 days	560FS+120 days	595,1261	BS - B x 4~6 men
593	593	5.19.8.3.8.4	Fire Services Installation, BR2	120 days	Thu 25/05/23	Thu 21/09/23	15 days		1182,1194,1195,59	FS - B x 4~6 men
594	594	5.19.8.3.8.5	Lightning Protection System, BR2	60 days	Thu 25/05/23	Sun 23/07/23	253 days		489FF	BS - C x 2~4 men
595	595	5.19.8.3.8.6	Testing and Commissioning of Building Services Installations, BR2	45 days	Sun 22/10/23	Tue 05/12/23	118 days	590,591,592,593	489FF	BS - C x 2~4 men
596	**596**	**5.20**	**Membrane Facilities Building, Portion B-5 (PS 6B.2.4)**	**1320 days**	**Fri 21/08/20**	**Mon 01/04/24**	**0 days**			
597	597	5.20.1	Planned Key Date Completion Date - KD1A, MFB No. 2	0 days	Fri 30/10/20	Fri 30/10/20	0 days	643FF,644FF		
598	598	5.20.2	Planned Key Date Completion Date - KD1B, MFB No. 2	0 days	Tue 01/06/21	Tue 01/06/21	0 days	645FF		
599	599	5.20.3	Planned Sectional Completion Date - Section 1, MFB No. 2	0 days	Mon 12/07/21	Mon 12/07/21	0 days	646FF,647FF,648FF		
600	600	5.20.4	Planned Sectional Completion Date - Section 2, MFB No. 2	0 days	Mon 01/04/24	Mon 01/04/24	0 days			
601	**601**	**5.20.5**	**Selection of Suppliers for major plant and materials for MFB**	**224 days**	**Tue 01/09/20**	**Mon 12/04/21**	**11 days**			
602	**602**	**5.20.5.1**	**MFS - hollow fibre membrane modules (Marking Scheme Approach), ref. EQT023**	**150 days**	**Tue 01/09/20**	**Thu 28/01/21**	**0 days**			
603	603	5.20.5.1.1	Submission for acceptance of purchasing package including proposed marking scheme	60 days	Tue 01/09/20	Fri 30/10/20	0 days		604	
604	604	5.20.5.1.2	Invitation of quotations for purchasing package	60 days	Sat 31/10/20	Tue 29/12/20	0 days	603	605	
605	605	5.20.5.1.3	Acceptance of conforming quotation (Completed)	30 days	Wed 30/12/20	Thu 28/01/21	0 days	604	646	
606	**606**	**5.20.5.2**	**MFS - air scour blowers, C11, ref. EQT040**	**150 days**	**Tue 01/09/20**	**Thu 28/01/21**	**65 days**			
607	607	5.20.5.2.1	Submission for acceptance of purchasing package	60 days	Tue 01/09/20	Fri 30/10/20	0 days		608	
608	608	5.20.5.2.2	Invitation of quotations for purchasing package	60 days	Sat 31/10/20	Tue 29/12/20	0 days	607	609	
609	609	5.20.5.2.3	Acceptance of conforming quotation	30 days	Wed 30/12/20	Thu 28/01/21	32 days	608	648	
610	**610**	**5.20.5.3**	**MFS - permeate pumps, C11, ref. EQT024**	**180 days**	**Tue 01/09/20**	**Sat 27/02/21**	**55 days**			
611	611	5.20.5.3.1	Submission for acceptance of purchasing package	90 days	Tue 01/09/20	Sun 29/11/20	0 days		612	
612	612	5.20.5.3.2	Invitation of quotations for purchasing package	60 days	Mon 30/11/20	Thu 28/01/21	0 days	611	613	
613	613	5.20.5.3.3	Acceptance of conforming quotation	30 days	Fri 29/01/21	Sat 27/02/21	44 days	612	646	
614	**614**	**5.20.5.4**	**MFS - compressed air system, C11, ref. EQT029**	**120 days**	**Tue 15/09/20**	**Tue 12/01/21**	**81 days**			
615	615	5.20.5.4.1	Submission for acceptance of purchasing package	60 days	Tue 15/09/20	Fri 13/11/20	0 days		616	
616	616	5.20.5.4.2	Invitation of quotations for purchasing package	30 days	Sat 14/11/20	Sun 13/12/20	0 days	615	617	
617	617	5.20.5.4.3	Acceptance of conforming quotation	30 days	Mon 14/12/20	Tue 12/01/21	48 days	616	648	
618	**618**	**5.20.5.5**	**MFS - chemical storage tanks, C11, ref. EQT025**	**120 days**	**Thu 01/10/20**	**Thu 28/01/21**	**65 days**			
619	619	5.20.5.5.1	Submission for acceptance of purchasing package	60 days	Thu 01/10/20	Sun 29/11/20	0 days		620	
620	620	5.20.5.5.2	Invitation of quotations for purchasing package	30 days	Mon 30/11/20	Tue 29/12/20	0 days	619	621	
621	621	5.20.5.5.3	Acceptance of conforming quotation	30 days	Wed 30/12/20	Thu 28/01/21	32 days	620	648	
622	**622**	**5.20.5.6**	**MFS - chemical dosing pumps, C11, ref. EQT026**	**120 days**	**Thu 01/10/20**	**Thu 28/01/21**	**65 days**			
623	623	5.20.5.6.1	Submission for acceptance of purchasing package	60 days	Thu 01/10/20	Sun 29/11/20	0 days	2,30	624	
624	624	5.20.5.6.2	Invitation of quotations for purchasing package	30 days	Mon 30/11/20	Tue 29/12/20	0 days	623	625	
625	625	5.20.5.6.3	Acceptance of conforming quotation	30 days	Wed 30/12/20	Thu 28/01/21	32 days	624	648	
626	**626**	**5.20.5.7**	**MFS - return activated sludge pumps (Marking Scheme Approach), ref. EQT010**	**180 days**	**Thu 01/10/20**	**Mon 29/03/21**	**25 days**			
627	627	5.20.5.7.1	Submission for acceptance of purchasing package	90 days	Thu 01/10/20	Tue 29/12/20	0 days		628	



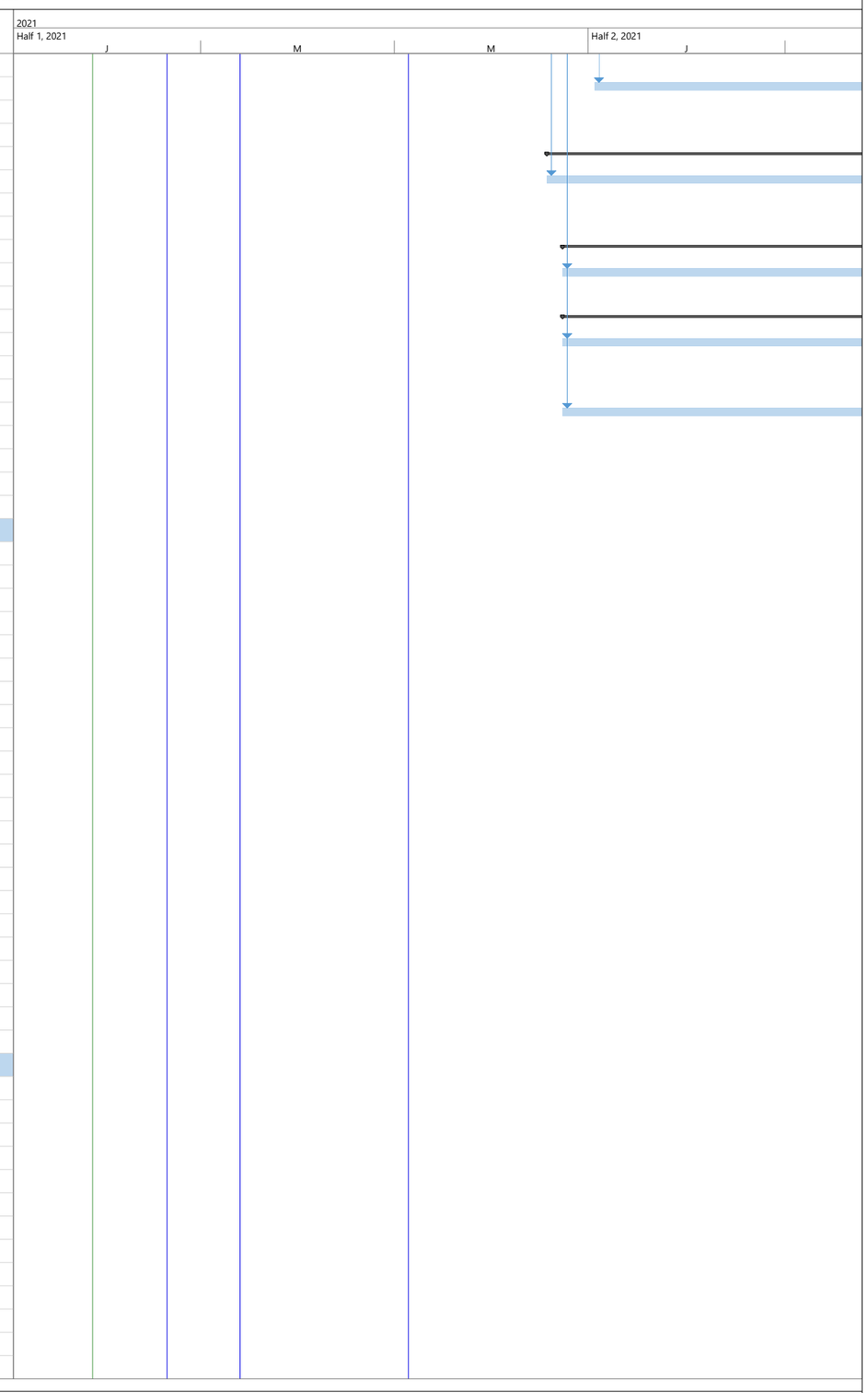
Bestwise
Project: DE/2018/04
Date: Tue 26/01/21

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

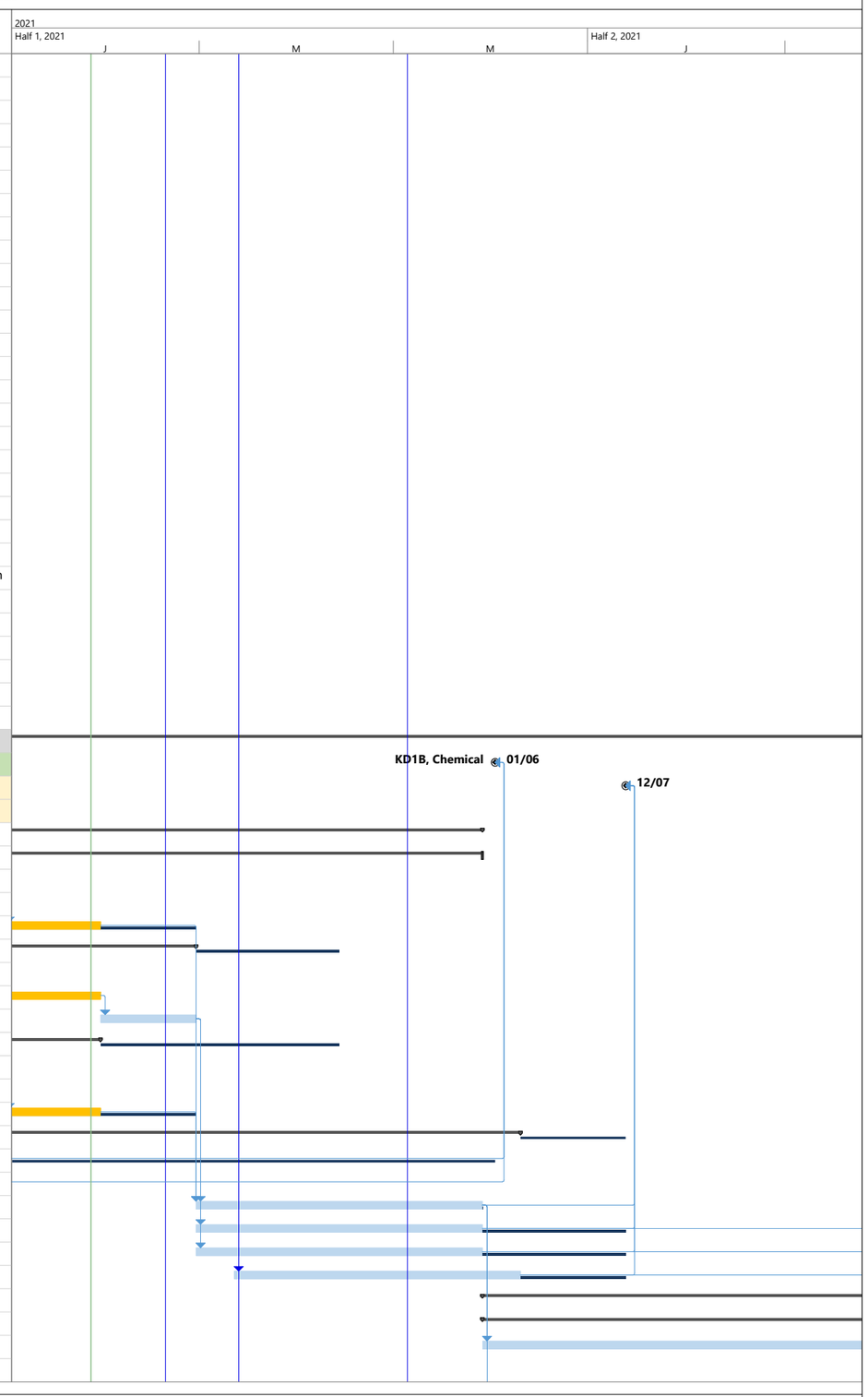
ID	ID	WBS	Task Name	Duration between Task Start and Finish	Start	Finish	Float Time	Predecessors	Successors	Resource Names
628	628	5.20.5.7.2	Invitation of quotations for purchasing package	60 days	Wed 30/12/20	Sat 27/02/21	0 days	627	629	
629	629	5.20.5.7.3	Acceptance of conforming quotation	30 days	Sun 28/02/21	Mon 29/03/21	14 days	628	646	
630	**630**	**5.20.5.8**	**MFS - membrane tank drain pumps, C11, ref. EQT009**	**180 days**	**Tue 15/09/20**	**Sat 13/03/21**	**41 days**			
631	631	5.20.5.8.1	Submission for acceptance of purchasing package	90 days	Tue 15/09/20	Sun 13/12/20	0 days		632	
632	632	5.20.5.8.2	Invitation of quotations for purchasing package	60 days	Mon 14/12/20	Thu 11/02/21	0 days	631	633	
633	633	5.20.5.8.3	Acceptance of conforming quotation	30 days	Fri 12/02/21	Sat 13/03/21	30 days	632	646	
634	**634**	**5.20.5.9**	**Plant Service Water System - booster pumps, C11, ref. EQT030**	**180 days**	**Thu 15/10/20**	**Mon 12/04/21**	**11 days**			
635	635	5.20.5.9.1	Submission for acceptance of purchasing package	90 days	Thu 15/10/20	Tue 12/01/21	0 days		636	
636	636	5.20.5.9.2	Invitation of quotations for purchasing package	60 days	Wed 13/01/21	Sat 13/03/21	0 days	635	637	
637	637	5.20.5.9.3	Acceptance of conforming quotation	30 days	Sun 14/03/21	Mon 12/04/21	0 days	636	646	
638	**638**	**5.20.5.10**	**Plant Service Water System - hydro-pneumatic pressure tanks, C11, ref. EQT030**	**120 days**	**Thu 01/10/20**	**Thu 28/01/21**	**85 days**			
639	639	5.20.5.10.1	Submission for acceptance of purchasing package	60 days	Thu 01/10/20	Sun 29/11/20	0 days		640	
640	640	5.20.5.10.2	Invitation of quotations for purchasing package	30 days	Mon 30/11/20	Tue 29/12/20	0 days	639	641	
641	641	5.20.5.10.3	Acceptance of conforming quotation	30 days	Wed 30/12/20	Thu 28/01/21	74 days	640	646	
642	**642**	**5.20.6**	**Design Submissions for MFB No. 2**	**316 days**	**Fri 21/08/20**	**Fri 02/07/21**	**10 days**			
643	643	5.20.6.1	Electrical schematic drawings for MFB No. 2	60 days	Fri 21/08/20	Mon 19/10/20	11 days		597FF	
644	644	5.20.6.2	CDS080-4 - Civil and dimensional requirements drawigns for MFB no. 2 up to +8.0 mPD	30 days	Tue 01/09/20	Wed 30/09/20	0 days		597FF	
645	645	5.20.6.3	CDS081-4 - Civil and dimensional requirements drawings for MFB No. 2	210 days	Fri 28/08/20	Thu 25/03/21	68 days		598FF	
646	646	5.20.6.4	CDS005 - Detailed Design for Membrane Filtration System, Pumps and Membrane Module	80 edays	Mon 12/04/21	Thu 01/07/21	0.63 edays	605,613,629,633,6	655,659,662,665,67	
647	647	5.20.6.5	CDS024 - Detailed Design for Electrical Installations for MFB No. 2	30 edays	Sun 23/05/21	Tue 22/06/21	0.63 edays	72,82,78,86,90,185	673,694,700,599FF	
648	648	5.20.6.6	CDS008 - Detailed Design for Membrane Filtration System, Air Blowers, Dosing Systems et	100 edays	Mon 01/03/21	Wed 09/06/21	0.63 edays	609,617,621,625,5	668,671,599FF	
649	649	5.20.6.7	CDS034-4 - Detailed Design for Electrical Installations BS at MFB No. 2	100 edays	Fri 12/03/21	Sun 20/06/21	22.38 edays	133	763,599FF	
650	650	5.20.6.8	CDS025-4 - Detailed Design for LV Switchboards for Membrane Filtration System	60 edays	Mon 03/05/21	Fri 02/07/21	0.63 edays	68	686,599FF	
651	651	5.20.6.9	CDS026-2 - Detailed Design for HV Switchboards for MFB No. 2	60 edays	Sun 18/04/21	Thu 17/06/21	0.63 edays	64	599FF,690	
652	652	5.20.6.10	CDS050-4 - Detailed Design for Lifting Appliances - MFB No. 2	150 edays	Thu 15/10/20	Sun 14/03/21	0 edays	113	680,599FF	
653	**653**	**5.20.7**	**Manufacturing and Delivery of Plant & Materials**	**506 days**	**Sun 14/03/21**	**Mon 01/08/22**	**301 days**			
654	**654**	**5.20.7.1**	**Hollow Fibre Membrane Modules, EQT023**	**385 days**	**Fri 02/07/21**	**Thu 21/07/22**	**191 days**			
655	655	5.20.7.1.1	MFS - Manufacturing of Plant	300 days	Fri 02/07/21	Wed 27/04/22	0 days	646	656	
656	656	5.20.7.1.2	MFS - Factory Acceptance Test of Plant (to be witnessed by PM)	40 days	Thu 28/04/22	Mon 06/06/22	0 days	655	657	
657	657	5.20.7.1.3	MFS - Shipping and Delivery of Plant to site	45 days	Tue 07/06/22	Thu 21/07/22	0 days	656	715	
658	**658**	**5.20.7.2**	**Air Scour Blowers, EQT040**	**396 days**	**Fri 02/07/21**	**Mon 01/08/22**	**208 days**			
659	659	5.20.7.2.1	Manufacturing and Factory Acceptance Test of Plant	240 days	Fri 02/07/21	Sat 26/02/22	111 days	646	660	
660	660	5.20.7.2.2	Shipping and Delivery of Plant to site	45 days	Sat 18/06/22	Mon 01/08/22	0 days	659,727SS-60 eday	716	
661	**661**	**5.20.7.3**	**Permeate Pump, EQT024**	**285 days**	**Fri 02/07/21**	**Tue 12/04/22**	**409 days**			
662	662	5.20.7.3.1	Manufacturing and Factory Acceptance Test of Plant	240 days	Fri 02/07/21	Sat 26/02/22	0 days	646	663	
663	663	5.20.7.3.2	Shipping and Delivery of Plant to site	45 days	Sun 27/02/22	Tue 12/04/22	201 days	662	717	
664	**664**	**5.20.7.4**	**Compressed Air System, EQT029**	**396 days**	**Fri 02/07/21**	**Mon 01/08/22**	**208 days**			
665	665	5.20.7.4.1	Manufacturing and Factory Acceptance Test of Plant	210 days	Fri 02/07/21	Thu 27/01/22	141 days	646	666	
666	666	5.20.7.4.2	Shipping and Delivery of Plant to site	45 days	Sat 18/06/22	Mon 01/08/22	0 days	665,727SS-60 eday	716	
667	**667**	**5.20.7.5**	**Chemical Storage Tanks, EQT025**	**225 days**	**Thu 10/06/21**	**Thu 20/01/22**	**403 days**			
668	668	5.20.7.5.1	Manufacturing and Factory Acceptance Test of Plant	180 days	Thu 10/06/21	Mon 06/12/21	0 days	648	669	
669	669	5.20.7.5.2	Shipping and Delivery of Plant to site	45 days	Tue 07/12/21	Thu 20/01/22	104 days	668	721	
670	**670**	**5.20.7.6**	**Chemical Dosing Pumps, EQT026**	**225 days**	**Thu 10/06/21**	**Thu 20/01/22**	**403 days**			
671	671	5.20.7.6.1	Manufacturing and Factory Acceptance Test of Plant	180 days	Thu 10/06/21	Mon 06/12/21	0 days	648	672	
672	672	5.20.7.6.2	Shipping and Delivery of Plant to site	45 days	Tue 07/12/21	Thu 20/01/22	104 days	671	722	
673	**673**	**5.20.7.7**	**Stoplogs and Penstocks, EQT013**	**396 days**	**Fri 02/07/21**	**Mon 01/08/22**	**208 days**			
674	674	5.20.7.7.1	Manufacturing and Factory Acceptance Test of Plant	240 days	Fri 02/07/21	Sat 26/02/22	111 days	646	675	
675	675	5.20.7.7.2	Shipping and Delivery of Plant to site	45 days	Sat 18/06/22	Mon 01/08/22	0 days	674,727SS-60 eday	714	
676	**676**	**5.20.7.8**	**Valves, EQT036**	**285 days**	**Fri 02/07/21**	**Tue 12/04/22**	**499 days**			
677	677	5.20.7.8.1	Manufacturing and Factory Acceptance Test of Plant	240 days	Fri 02/07/21	Sat 26/02/22	0 days	646	678	
678	678	5.20.7.8.2	Shipping and Delivery of Plant to site	45 days	Sun 27/02/22	Tue 12/04/22	291 days	677	720	
679	**679**	**5.20.7.9**	**Lifting Appliances**	**356 days**	**Sun 14/03/21**	**Fri 04/03/22**	**206 days**			
680	680	5.20.7.9.1	Manufacturing and Factory Acceptance Test of Plant	210 days	Sun 14/03/21	Sat 09/10/21	101 days	652	681	
681	681	5.20.7.9.2	Shipping and Delivery of Plant to site	45 days	Wed 19/01/22	Fri 04/03/22	16 days	680,704SS-60 eday	707,730	
682	**682**	**5.20.7.10**	**LV Switchboards**	**395 days**	**Sat 03/07/21**	**Mon 01/08/22**	**178 days**			
683	683	5.20.7.10.1	BR - Manufacturing of Plant	240 days	Sat 03/07/21	Sun 27/02/22	0 days	526	684	
684	684	5.20.7.10.2	BR - Factory Acceptance Test of Plant (to be witnessed by PM)	90 days	Mon 28/02/22	Sat 28/05/22	0 days	683	685	



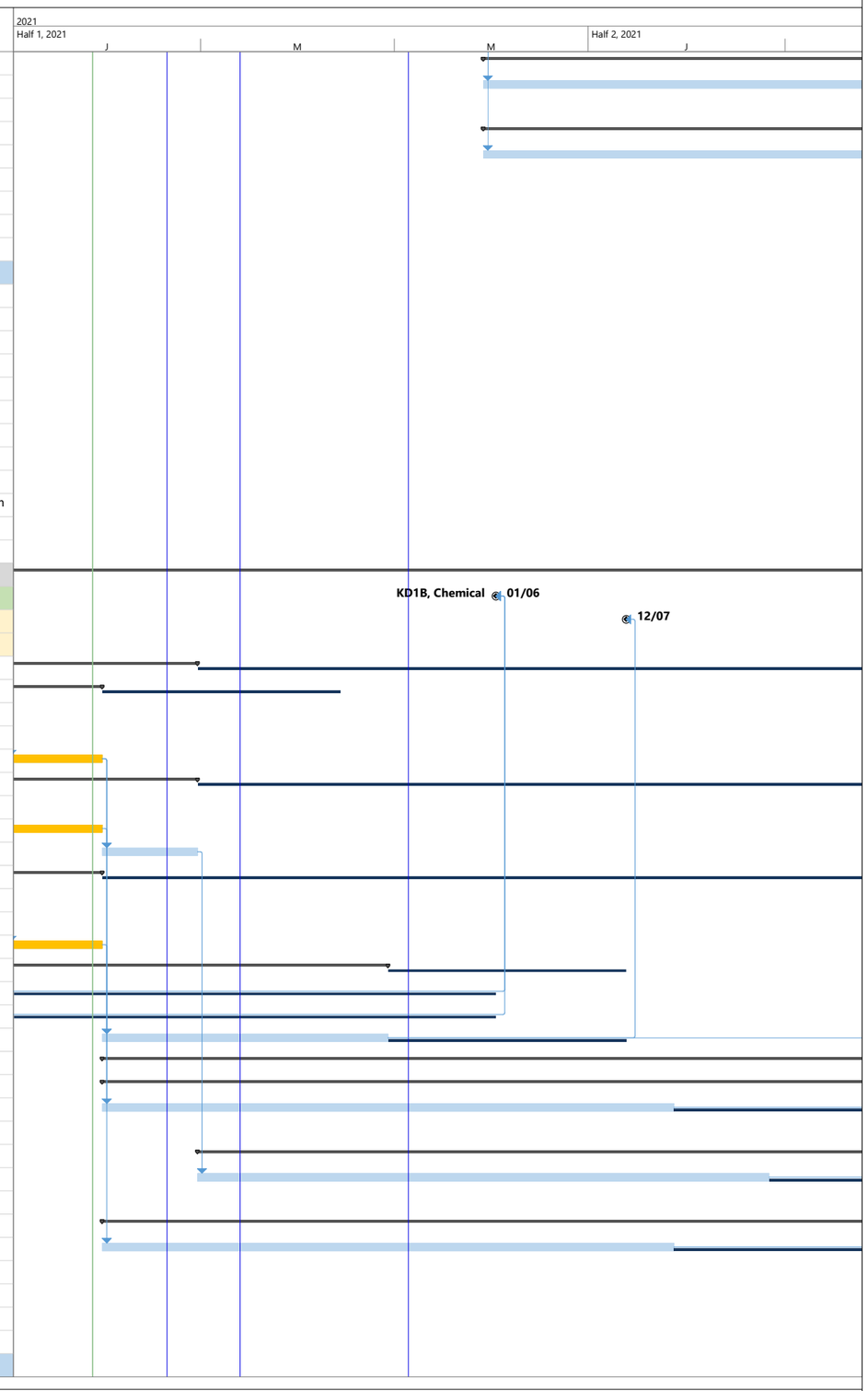
ID	ID	WBS	Task Name	Duration between Task Start and Finish	Start	Finish	Float Time	Predecessors	Successors	Resource Names
685	685	5.20.7.10.3	BR - Shipping and Delivery of Plant to site	45 days	Sun 29/05/22	Tue 12/07/22	126 days	684	745	
686	686	5.20.7.10.4	MFS - Manufacturing of Plant	240 days	Sat 03/07/21	Sun 27/02/22	0 days	650	687	
687	687	5.20.7.10.5	MFS - Factory Acceptance Test of Plant (to be witnessed by PM)	90 days	Mon 28/02/22	Sat 28/05/22	20 days	686	688	
688	688	5.20.7.10.6	MFS - Shipping and Delivery of Plant to site	45 days	Sat 18/06/22	Mon 01/08/22	106 days	687,727SS-60 eday	746	
689	**689**	**5.20.7.11**	**HV Switchboards, EQT031**	**410 days**	**Fri 18/06/21**	**Mon 01/08/22**	**208 days**			
690	690	5.20.7.11.1	MFS - Manufacturing of Plant	180 days	Fri 18/06/21	Tue 14/12/21	0 days	651	691	
691	691	5.20.7.11.2	MFS - Factory Acceptance Test of Plant (to be witnessed by PM)	90 days	Wed 15/12/21	Mon 14/03/22	95 days	690	692	
692	692	5.20.7.11.3	MFS - Shipping and Delivery of Plant to site	45 days	Sat 18/06/22	Mon 01/08/22	106 days	691,727SS-60 eday	749	
693	**693**	**5.20.7.12**	**11kV/380V Stepdown Power Transformers, EQT032**	**285 days**	**Wed 23/06/21**	**Sun 03/04/22**	**553 days**			
694	694	5.20.7.12.1	MFS - Manufacturing and Factory Acceptance Test of Plant	240 days	Wed 23/06/21	Thu 17/02/22	0 days	647	695	
695	695	5.20.7.12.2	MFS - Shipping and Delivery of Plant to site	45 days	Fri 18/02/22	Sun 03/04/22	226 days	694	750	
696	**696**	**5.20.7.13**	**PLC System**	**285 days**	**Wed 23/06/21**	**Sun 03/04/22**	**298 days**			
697	697	5.20.7.13.1	Manufacturing of Plant, PLC for BR2A &B	210 days	Wed 23/06/21	Tue 18/01/22	0 days	524	698	
698	698	5.20.7.13.2	Factory Acceptance Test of Plant, PLC for BR2A &B (To be witnessed by PM)	30 days	Wed 19/01/22	Thu 17/02/22	0 days	697	699	
699	699	5.20.7.13.3	Shipping and Delivery of Plant to site	45 days	Fri 18/02/22	Sun 03/04/22	226 days	698	747	
700	700	5.20.7.13.4	Manufacturing of Plant, PLC for MFB2	210 days	Wed 23/06/21	Tue 18/01/22	0 days	647	701	
701	701	5.20.7.13.5	Factory Acceptance Test of Plant, PLC for MFB2 (To be witnessed by PM)	30 days	Wed 19/01/22	Thu 17/02/22	0 days	700	702	
702	702	5.20.7.13.6	Shipping and Delivery of Plant to site	45 days	Fri 18/02/22	Sun 03/04/22	226 days	701	748	
703	**703**	**5.20.8**	**Site Installation Work**	**683 days**	**Sun 20/03/22**	**Wed 31/01/24**	**0 days**			
704	704	5.20.8.1	Tentative Civil Handover Date, Portion B-5A, MFB No. 2 below 1st floor level (Rev. 5)	1 day	Sun 20/03/22	Sun 20/03/22	0 days		707,713FS+45 eday:	
705	**705**	**5.20.8.2**	**Commencement of E&M Installation at MFB No. 2 Lower Part**	**404 days**	**Mon 21/03/22**	**Fri 28/04/23**	**0 days**	**704**		
706	706	5.20.8.2.1	Provision of Temporary Water Supply, Electricity Supply, Lighting, Welfare facilities etc.,	7 days	Mon 21/03/22	Sun 27/03/22	0 days	704		
707	**707**	**5.20.8.2.2**	**Installation of Lifting Appliances at MFB No. 2**	**66 days**	**Mon 21/03/22**	**Wed 25/05/22**	**248 days**	**704,681**		
708	708	5.20.8.2.2.1	B2 EOT Crane LA-04-01 SWL 5t	45 days	Mon 21/03/22	Wed 04/05/22	0 days		710,711,712	
709	709	5.20.8.2.2.2	B2 EOT Crane LA-04-02 SWL 5t	30 days	Mon 21/03/22	Tue 19/04/22	15 days		710,711,712	
710	710	5.20.8.2.2.3	B2 MR LA-04-03 SWL 5t	14 days	Thu 05/05/22	Wed 18/05/22	0 days	708,709	712	
711	711	5.20.8.2.2.4	B1 MR LA-04-04 SWL 3t	14 days	Thu 05/05/22	Wed 18/05/22	0 days	708,709	712	
712	712	5.20.8.2.2.5	T&C, Loading Test for Lifting Appliances	7 days	Thu 19/05/22	Wed 25/05/22	57 days	708,709,710,711	715	
713	**713**	**5.20.8.2.3**	**Mechanical Installations for E&M Equip. at MFB No. 2 Lower Part**	**359 days**	**Thu 05/05/22**	**Fri 28/04/23**	**0 days**	**704FS+45 edays**	**725SS**	
714	714	5.20.8.2.3.1	Installation of penstocks and stoplogs (Penstocks 18nos, Stoplogs 11nos), EQT013	90 days	Tue 02/08/22	Sun 30/10/22	0 days	675	724	ME - E x 4~6 men
715	715	5.20.8.2.3.2	Installation of hollow fibre membrane modules (x9), EQT023	90 days	Fri 22/07/22	Wed 19/10/22	191 days	657,712		ME - A x 4~6 men
716	716	5.20.8.2.3.3	Installation of air scour blowers (x3), EQT040	90 days	Tue 02/08/22	Sun 30/10/22	0 days	660,666	720,717,718	ME - B x 4~6 men
717	717	5.20.8.2.3.4	Installation of permeate pumps (x10), EQT024	90 days	Mon 31/10/22	Sat 28/01/23	0 days	716,663	720	ME - A x 4~6 men
718	718	5.20.8.2.3.5	Installation of return activated sludge pumps (x5), EQT010	90 days	Mon 31/10/22	Sat 28/01/23	0 days	716	720	ME - B x 4~6 men
719	719	5.20.8.2.3.6	Installation of membrane tank drain pumps (x2), EQT009	45 days	Thu 05/05/22	Sat 18/06/22	224 days		720	ME - C x 4~6 men
720	720	5.20.8.2.3.7	Installation of pipework and valves, EQT036	90 days	Sun 29/01/23	Fri 28/04/23	0 days	716,717,718,719,6	724FF	ME - C x 4~6 men
721	721	5.20.8.2.3.8	Installation of chemical storage tank, EQT025	60 days	Thu 05/05/22	Sun 03/07/22	299 days	669		ME - D x 2~4 men
722	722	5.20.8.2.3.9	Installation of chemical dosing pumps, EQT026	60 days	Thu 05/05/22	Sun 03/07/22	299 days	672		ME - D x 2~4 men
723	723	5.20.8.2.3.10	Installation of plant service water system	90 days	Thu 05/05/22	Tue 02/08/22	269 days			ME - C x 4~6 men
724	724	5.20.8.2.3.11	Site Acceptance Tests - mechanical aspects including alignment and levels checks, leal	180 days	Mon 31/10/22	Fri 28/04/23	168 days	714,720FF	760	ME - D x 2~4 men
725	725	5.20.8.2.4	Electrical Installations for E&M Equip. at MFB No. 2 Lower Part	150 days	Thu 05/05/22	Sat 01/10/22	237 days	713SS		
726	726	5.20.8.2.4.1	Installation of cable trays and cable containments	150 days	Thu 05/05/22	Sat 01/10/22	45 days		751	
727	727	5.20.8.3	Tentative Civil Handover Date, Portion B-5B, MFB No. 2 remaining portion (Rev. 5)	1 day	Wed 17/08/22	Wed 17/08/22	0 days		730,739FS+45 eday:	
728	**728**	**5.20.8.4**	**Commencement of E&M Installation at MFB No. 2 Upper Part**	**532 days**	**Thu 18/08/22**	**Wed 31/01/24**	**0 days**	**727**		
729	729	5.20.8.4.1	Provision of Temporary Water Supply, Electricity Supply, Lighting, Welfare facilities etc.,	7 days	Thu 18/08/22	Wed 24/08/22	0 days	727		
730	**730**	**5.20.8.4.2**	**Installation of Lifting Appliances at MFB No. 2**	**142 days**	**Thu 18/08/22**	**Fri 06/01/23**	**40 days**	**727,681**		
731	731	5.20.8.4.2.1	GF EOT Crane LA-04-05 SWL 5t	45 days	Thu 18/08/22	Sat 01/10/22	0 days		733,734,738	LA - A x 4~6 men
732	732	5.20.8.4.2.2	GF Gantry Crane LA-04-06 SWL 6t	45 days	Thu 18/08/22	Sat 01/10/22	0 days		733,734,738	LA - B x 4~6 men
733	733	5.20.8.4.2.3	1F EOT Crane LA-04-07 SWL 15t	45 days	Sun 02/10/22	Tue 15/11/22	0 days	731,732	735,736,737,738	LA - A x 4~6 men
734	734	5.20.8.4.2.4	1F EOT Crane LA-04-08 SWL 15t	45 days	Sun 02/10/22	Tue 15/11/22	0 days	731,732	735,736,737,738	LA - B x 4~6 men
735	735	5.20.8.4.2.5	RF EOT Crane LA-04-09 SWL 2t	45 days	Wed 16/11/22	Fri 30/12/22	0 days	733,734	738	LA - A x 4~6 men
736	736	5.20.8.4.2.6	RF Retractable MR LA-04-10 SWL 2t	45 days	Wed 16/11/22	Fri 30/12/22	0 days	733,734	738	LA - B x 4~6 men
737	737	5.20.8.4.2.7	Mobile A-frame LA-04-11 SWL 2t	7 days	Wed 16/11/22	Tue 22/11/22	38 days	733,734	738	LA - C x 4~6 men
738	738	5.20.8.4.2.8	T&C, Loading Test for Lifting Appliances	7 days	Sat 31/12/22	Fri 06/01/23	0 days	731,732,733,734,7	740	LA - A x 4~6 men
739	**739**	**5.20.8.4.3**	**Mechanical Installations for E&M Equip. at MFB No. 2 Upper Part**	**377 days**	**Sun 02/10/22**	**Fri 13/10/23**	**0 days**	**727FS+45 edays**	**744SS+45 edays,76**	
740	740	5.20.8.4.3.1	Installation of air scour blowers (x3)	100 days	Sat 07/01/23	Sun 16/04/23	0 days	738	741,743	ME - A x 4~6 men
741	741	5.20.8.4.3.2	Installation of compressed air system (x1)	60 days	Mon 17/04/23	Thu 15/06/23	160 days	740		ME - B x 4~6 men



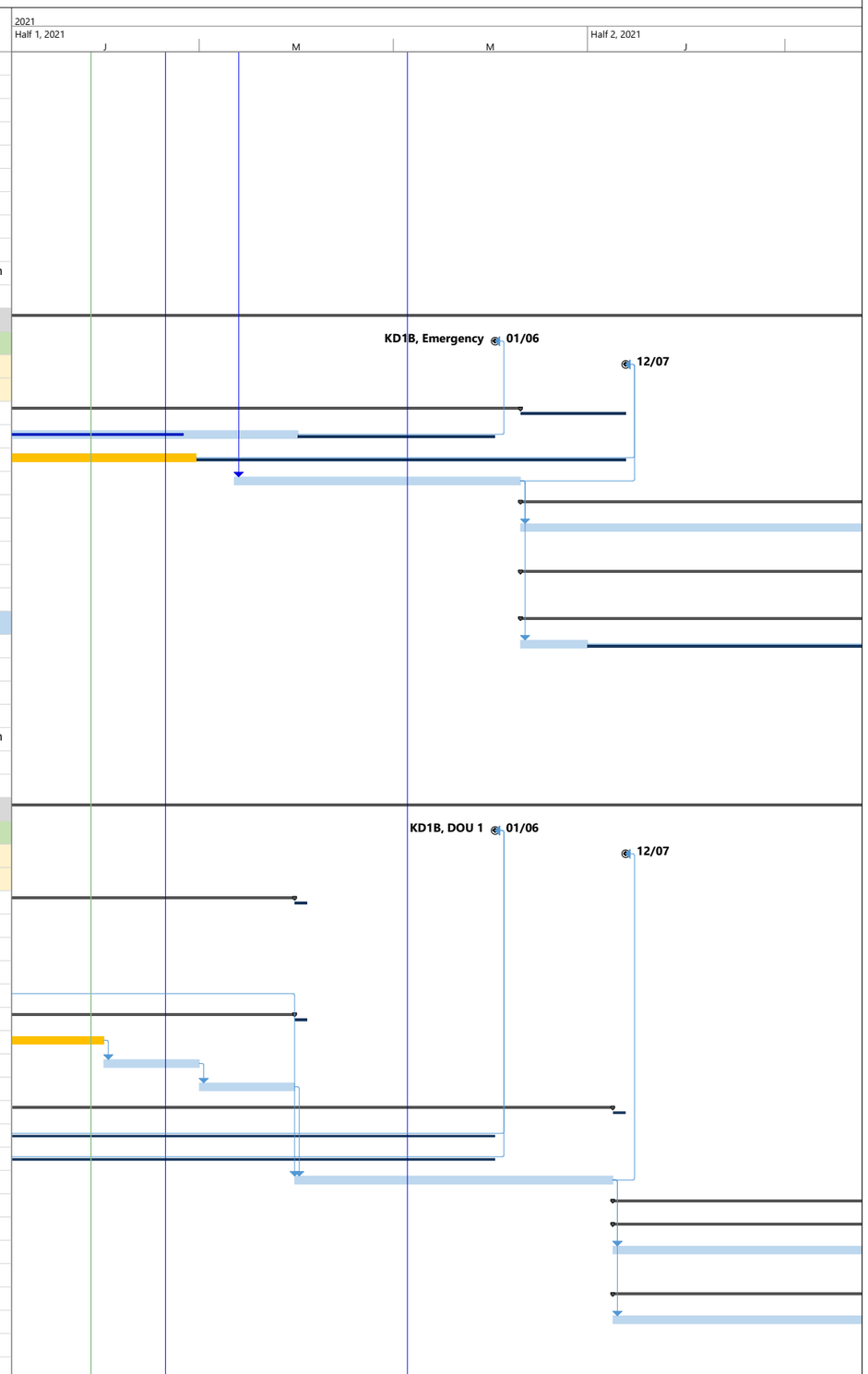
ID	ID	WBS	Task Name	Duration between Task Start and Finish	Start	Finish	Float Time	Predecessors	Successors	Resource Names
742	742	5.20.8.4.3.3	Installation of instrumentations, EQT035-1	60 days	Sun 02/10/22	Wed 30/11/22	357 days	52		ME - D x 2~4 men
743	743	5.20.8.4.3.4	Site Acceptance Tests - mechanical aspects including alignment and levels checks, leal	180 days	Mon 17/04/23	Fri 13/10/23	40 days	740		ME - D x 2~4 men
744	**744**	**5.20.8.4.4**	**Electrical Installations for E&M Equip. at MFB No. 2 Upper Part**	**300 days**	**Wed 16/11/22**	**Mon 11/09/23**	**32 days**	**739SS+45 edays**	**760**	
745	745	5.20.8.4.4.1	Installation of LV Switchboards, BR2	90 days	Wed 16/11/22	Mon 13/02/23	0 days	685	752	LV - B x 4~6 men
746	746	5.20.8.4.4.2	Installation of LV Switchboards, MFB No. 2	90 days	Wed 16/11/22	Mon 13/02/23	0 days	688	752	LV - A x 4~6 men
747	747	5.20.8.4.4.3	Installation of PLC Panels, BR2	90 days	Wed 16/11/22	Mon 13/02/23	0 days	699	752,756	
748	748	5.20.8.4.4.4	Installation of PLC Panels, MFB No. 2	90 days	Wed 16/11/22	Mon 13/02/23	282 days	702		PLC - B x 1 man
749	749	5.20.8.4.4.5	Installation of HV Switchboards, MFB No. 2	60 days	Wed 16/11/22	Sat 14/01/23	30 days	692	752	HV - A x 4~6 men
750	750	5.20.8.4.4.6	Installation of transformer, MFB No. 2, EQT032	45 days	Wed 16/11/22	Fri 30/12/22	327 days	695		
751	751	5.20.8.4.4.7	Installation of cable trays and cable containments	180 days	Wed 16/11/22	Sun 14/05/23	192 days	726		
752	752	5.20.8.4.4.8	Cables laying and terminations	150 days	Tue 14/02/23	Thu 13/07/23	0 days	745,746,747,749	757,754	
753	753	5.20.8.4.4.9	Energisation of LV Switchboards, MFB	1 day	Wed 30/08/23	Wed 30/08/23	84 days			LA - A x 4~6 men
754	754	5.20.8.4.4.10	Site Acceptance Tests - Electrical aspects including voltage and current tests, equipme	60 days	Fri 14/07/23	Mon 11/09/23	32 days	752	760	LV - A x 4~6 men
755	**755**	**5.20.8.4.5**	**SCADA Systems, BR No. 1 & No 2, MFB No. 2**	**131 days**	**Fri 14/07/23**	**Tue 21/11/23**	**31 days**			
756	756	5.20.8.4.5.1	Configuration of PLC System for BR No. 1 & No. 2	30 days	Mon 02/10/23	Tue 31/10/23	0 days	747,583	758	PLC - A x 1 man
757	757	5.20.8.4.5.2	Configuration of PLC System for MFB No. 2	30 days	Fri 14/07/23	Sat 12/08/23	0 days	752	759	
758	758	5.20.8.4.5.3	Site Acceptance Test for PLC System at BR No. 1 and No. 2	21 days	Wed 01/11/23	Tue 21/11/23	19 days	756	761,587,1262	
759	759	5.20.8.4.5.4	Site Acceptance Test for PLC System at MFB No. 2	21 days	Sun 13/08/23	Sat 02/09/23	99 days	757	761,1262	
760	**760**	**5.20.8.4.6**	**Site Acceptance Test for E&M Equip at MFB No. 2**	**30 edays**	**Fri 13/10/23**	**Sun 12/11/23**	**28.63 edays**	**739,744,754,724**	**761**	
761	**761**	**5.20.8.4.7**	**System Commissioning for E&M Equip at MFB No. 2**	**45 days**	**Mon 11/12/23**	**Wed 24/01/24**	**0 days**	**758,760,770,759,7**	**762**	
762	762	5.20.8.4.8	Risk Allowances for Completion of Processing Plant at MFB No. 2	7 edays	Wed 24/01/24	Wed 31/01/24	7.63 edays	761	1258	
763	**763**	**5.20.8.4.9**	**Building Services Installations for MFB No. 2**	**330 days**	**Sun 15/01/23**	**Sun 10/12/23**	**12 days**	**727FS+150 edays,6**		
764	764	5.20.8.4.9.1	Mechanical Ventilation and Air Conditioning System, MFB No. 2	120 days	Sun 15/01/23	Sun 14/05/23	90 days		770	MVAC - A x 4~6 men
765	765	5.20.8.4.9.2	Lighting and Power Distribution System, MFB No. 2	210 days	Sun 15/01/23	Sat 12/08/23	0 days		770	BS - A x 4~6 men
766	766	5.20.8.4.9.3	Plumbing Installation, MFB No. 2	180 days	Sun 15/01/23	Thu 13/07/23	30 days	1229	1231,770	Pb - B x 4~6 men
767	767	5.20.8.4.9.4	CCTV Installation (10 indoor + 3 outdoor Cameras), MFB No. 2	90 days	Sun 15/01/23	Fri 14/04/23	120 days	727FS+120 days	770,1261	BS - B x 4~6 men
768	768	5.20.8.4.9.5	Fire Services Installation, MFB No. 2	120 days	Sun 15/01/23	Sun 14/05/23	90 days		1182,1194,1195,77	FS - B x 4~6 men
769	769	5.20.8.4.9.6	Earthing and Lightning Protection System, MFB No. 2	60 days	Sun 15/01/23	Wed 15/03/23	315 days		761FF	BS - C x 2~4 men
770	770	5.20.8.4.9.7	Testing and Commissioning of Building Services Installations, MFB No. 2	120 days	Sun 13/08/23	Sun 10/12/23	0 days	764,765,766,767,7	761	BS - C x 2~4 men
771	771	5.21	Chemical System No. 1 and No. 2, Portion B-7 & B-7B (PS 6B.2.3)	1351 days	Tue 21/07/20	Mon 01/04/24	0 days			
772	772	5.21.1	Planned Key Date Completion Date - KD1B, Chem Sys No. 1 & 2	0 days	Tue 01/06/21	Tue 01/06/21	0 days	789FF,790FF		
773	773	5.21.2	Planned Sectional Completion Date - Section 1, Chem Sys No. 1 & 2	0 days	Mon 12/07/21	Mon 12/07/21	0 days	791FF,792FF,793FF		
774	774	5.21.3	Planned Sectional Completion Date - Section 2, Chem Sys No. 1 & 2	0 days	Mon 01/04/24	Mon 01/04/24	0 days	820FF		
775	**775**	**5.21.4**	**Selection of Suppliers for major plant and materials for Chemical Systems**	**240 days**	**Thu 01/10/20**	**Fri 28/05/21**	**0 days**			
776	**776**	**5.21.4.1**	**Chemical Storage and Dosing - chemical storage tanks, C11, ref. EQT025**	**240 days**	**Thu 01/10/20**	**Fri 28/05/21**	**0 days**			
777	777	5.21.4.1.1	Submission for acceptance of purchasing package	60 days	Thu 01/10/20	Sun 29/11/20	0 days		778	
778	778	5.21.4.1.2	Invitation of quotations for purchasing package	30 days	Mon 30/11/20	Tue 29/12/20	0 days	777	779	
779	779	5.21.4.1.3	Acceptance of conforming quotation	30 days	Wed 30/12/20	Thu 28/01/21	30 days	778	791	
780	**780**	**5.21.4.2**	**Chemical Storage and Dosing - chemical dosing pumps, C11, ref. EQT027**	**150 days**	**Thu 01/10/20**	**Sat 27/02/21**	**45 days**			
781	781	5.21.4.2.1	Submission for acceptance of purchasing package	60 days	Thu 01/10/20	Sun 29/11/20	0 days		782	
782	782	5.21.4.2.2	Invitation of quotations for purchasing package	60 days	Mon 30/11/20	Thu 28/01/21	0 days	781	783	
783	783	5.21.4.2.3	Acceptance of conforming quotation	30 days	Fri 29/01/21	Sat 27/02/21	0 days	782	791,792,793	
784	**784**	**5.21.4.3**	**Chemical Storage and Dosing - transfer pumps, C11, ref. EQT026**	**120 days**	**Thu 01/10/20**	**Thu 28/01/21**	**75 days**			
785	785	5.21.4.3.1	Submission for acceptance of purchasing package	60 days	Thu 01/10/20	Sun 29/11/20	0 days		786	
786	786	5.21.4.3.2	Invitation of quotations for purchasing package	30 days	Mon 30/11/20	Tue 29/12/20	0 days	785	787	
787	787	5.21.4.3.3	Acceptance of conforming quotation	30 days	Wed 30/12/20	Thu 28/01/21	30 days	786	791	
788	**788**	**5.21.5**	**Design Submissions for Chemical System No. 1 and No. 2**	**324 days**	**Tue 21/07/20**	**Thu 10/06/21**	**33 days**			
789	789	5.21.5.1	Electrical schematic drawings for Chemical Systems No. 1 and No. 2	60 days	Tue 21/07/20	Fri 18/09/20	256 days		772FF	
790	790	5.21.5.2	CDS081-5 - Civil and dimensional requirements drawings for Chemical Systems	70 days	Fri 28/08/20	Thu 05/11/20	0 days		772FF	
791	791	5.21.5.3	CDS006 - Detailed Design for Chemical Dosing System	90 edays	Sat 27/02/21	Fri 28/05/21	0.63 edays	779,783,787	797,800,803,773FF	
792	792	5.21.5.4	CDS027 - Detailed Design for Electrical Installations for Chemical System No. 1	90 edays	Sat 27/02/21	Fri 28/05/21	45 edays	783	810,773FF	
793	793	5.21.5.5	CDS028 - Detailed Design for Electrical Installations for Chemical System No. 2	90 edays	Sat 27/02/21	Fri 28/05/21	45 edays	783	810,773FF	
794	794	5.21.5.6	CDS034-5 - Detailed Design for Electrical Installations BS at Chemical Systems	90 edays	Fri 12/03/21	Thu 10/06/21	32.38 edays	133	810,773FF	
795	**795**	**5.21.6**	**Manufacturing and Delivery of Plant & Materials**	**296 days**	**Sat 29/05/21**	**Sun 20/03/22**	**417 days**			
796	**796**	**5.21.6.1**	**Chemical Storage Tanks, EQT025**	**225 days**	**Sat 29/05/21**	**Sat 08/01/22**	**488 days**			
797	797	5.21.6.1.1	Manufacturing and Factory Acceptance Test of Plant	180 days	Sat 29/05/21	Wed 24/11/21	0 days	791	798	
798	798	5.21.6.1.2	Shipping and Delivery of Plant to site	45 days	Thu 25/11/21	Sat 08/01/22	73 days	797	809	



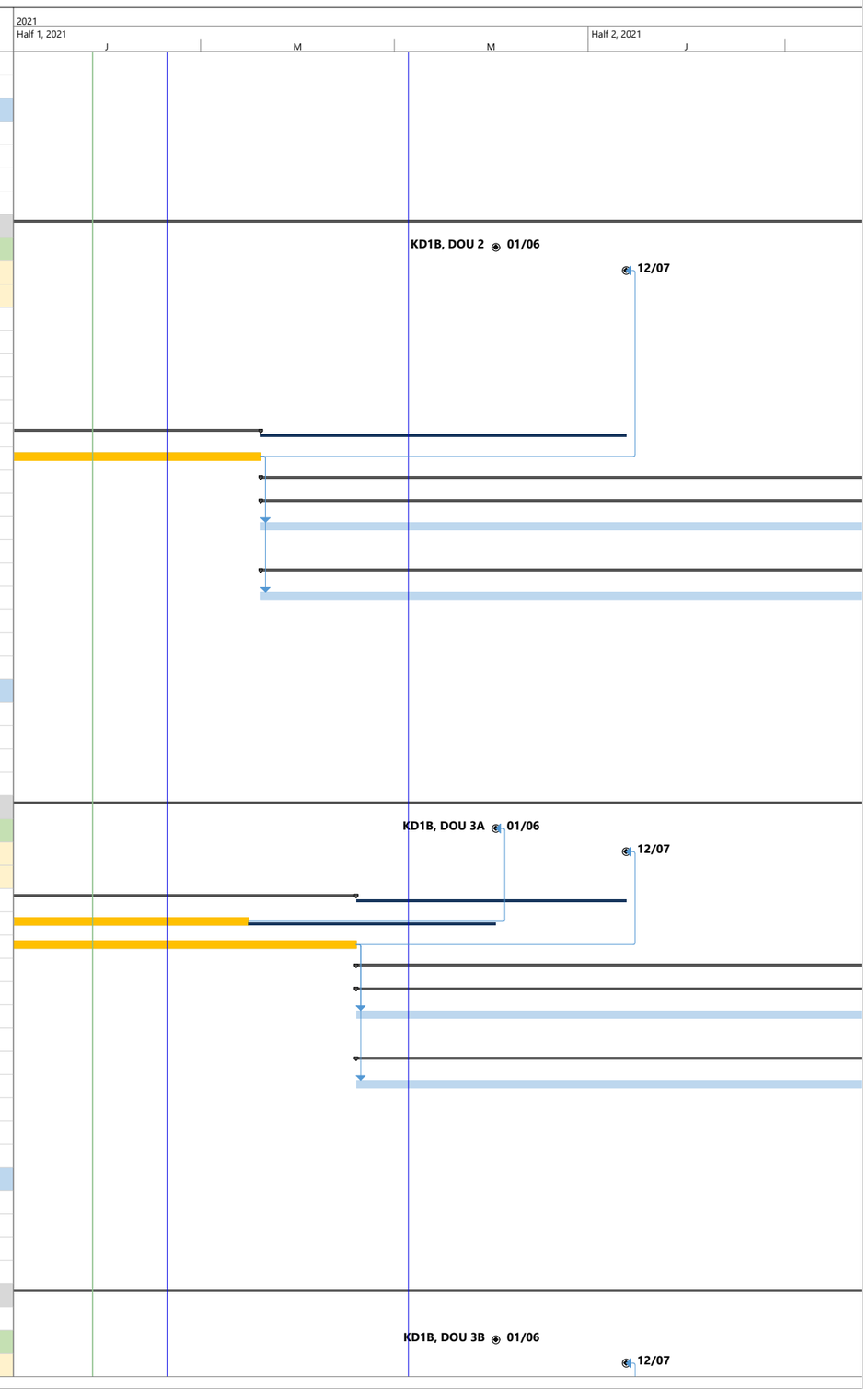
ID	ID	WBS	Task Name	Duration between Task Start and Finish	Start	Finish	Float Time	Predecessors	Successors	Resource Names
799	**799**	**5.21.6.2**	**Chemical Dosing Pumps, EQT027**	**296 days**	**Sat 29/05/21**	**Sun 20/03/22**	**417 days**			
800	800	5.21.6.2.1	Manufacturing and Factory Acceptance Test of Plant	180 days	Sat 29/05/21	Wed 24/11/21	71 days	791	801	
801	801	5.21.6.2.2	Shipping and Delivery of Plant to site	45 days	Fri 04/02/22	Sun 20/03/22	2 days	800,806FF-60 eday	809	
802	**802**	**5.21.6.3**	**Chemical Transfer Pumps, EQT026**	**296 days**	**Sat 29/05/21**	**Sun 20/03/22**	**417 days**			
803	803	5.21.6.3.1	Manufacturing and Factory Acceptance Test of Plant	180 days	Sat 29/05/21	Wed 24/11/21	71 days	791	804	
804	804	5.21.6.3.2	Shipping and Delivery of Plant to site	45 days	Fri 04/02/22	Sun 20/03/22	2 days	803,806FF-60 eday	809	
805	**805**	**5.21.7**	**Site Installation Work**	**307 days**	**Tue 22/03/22**	**Mon 23/01/23**	**415 days**			
806	806	5.21.7.1	Tentative Civil Handover Date, Portion B-7 & B-7B (Rev. 5)	1 day	Thu 19/05/22	Thu 19/05/22	0 days		804FF-60 edays,801	
807	807	5.21.7.2	Tentative Civil Handover Date, Chemical Pipe Trench (by others)	1 day	Sun 01/05/22	Sun 01/05/22	33 days		809FF+50 days	
808	**808**	**5.21.7.3**	**Commencement of E&M Installation at Chemical Dosing System 1 and System 2**	**307 days**	**Tue 22/03/22**	**Mon 23/01/23**	**415 days**			
809	809	5.21.7.3.1	Mechanical Installations for E&M Equip. for Chemical Dosing System	90 edays	Tue 22/03/22	Mon 20/06/22	0 edays	807FF+50 days,804	810	ME - D x 2~4 men
810	810	5.21.7.3.2	Electrical Installations for E&M Equip. for Chemical Dosing System	90 edays	Mon 20/06/22	Sun 18/09/22	0.63 edays	809,792,793,794	811,819	
811	**811**	**5.21.7.3.3**	**Site Acceptance Test for E&M Equip for Chemical Dosing System**	**45 days**	**Mon 19/09/22**	**Wed 02/11/22**	**0 days**	**810**	**812**	
812	**812**	**5.21.7.3.4**	**System Commissioning for E&M Equip for Chemical Dosing System**	**45 days**	**Thu 03/11/22**	**Sat 17/12/22**	**0 days**	**811**	**813**	
813	**813**	**5.21.7.3.5**	**Risk Allowances for Completion of Processing Plant at Chemical Dosing System**	**7 edays**	**Sat 17/12/22**	**Sat 24/12/22**	**410.63 edays**	**812**	**1258**	
814	**814**	**5.21.7.3.6**	**Building Services Installations at Chemical Dosing System areas**	**249 days**	**Fri 20/05/22**	**Mon 23/01/23**	**419 days**			
815	815	5.21.7.3.6.1	Lighting and Power Distribution System, Chem 1&2	120 days	Fri 20/05/22	Fri 16/09/22	9 days	806	820	BS - B x 4~6 men
816	816	5.21.7.3.6.2	Fire Services Installation, DG Stores	120 days	Fri 20/05/22	Fri 16/09/22	9 days	806	1194,1195,1185,821	FS - A x 4~6 men
817	817	5.21.7.3.6.3	Lightning Protection System, Chem 1&2	30 days	Fri 20/05/22	Sat 18/06/22	99 days	806	820	
818	818	5.21.7.3.6.4	Mechanical Ventilation System, Chem 2	14 days	Fri 20/05/22	Thu 02/06/22	115 days	806	820	MVAC - A x 4~6 men
819	819	5.21.7.3.6.5	Plumbing Installation, Chem 1	7 days	Mon 19/09/22	Sun 25/09/22	0 days	810	820	Pb - A x 4~6 men
820	820	5.21.7.3.6.6	Testing and Commissioning of Building Services Installations, Chem 1&2	120 days	Mon 26/09/22	Mon 23/01/23	434 days	815,816,819,818,8	774FF	BS - C x 2~4 men
821	**821**	**5.22**	**Temporary Chemical Dosing System, Portion B7 & B-7B (PS 6B.2.3)**	**1344 days**	**Tue 28/07/20**	**Mon 01/04/24**	**0 days**			
822	822	5.22.1	Planned Key Date Completion Date - KD1B, Temp. Chem Dosing Sys	0 days	Tue 01/06/21	Tue 01/06/21	0 days	839FF,840FF		
823	823	5.22.2	Planned Sectional Completion Date - Section 1, Temp. Chem Dosing Sys	0 days	Mon 12/07/21	Mon 12/07/21	0 days	841FF		
824	824	5.22.3	Planned Sectional Completion Date - Section 2, Temp. Chem Dosing Sys	0 days	Mon 01/04/24	Mon 01/04/24	0 days			
825	**825**	**5.22.4**	**Selection of Suppliers for major plant and materials for Temp. Chemical Dosing System**	**150 days**	**Thu 01/10/20**	**Sat 27/02/21**	**668 days**			
826	**826**	**5.22.4.1**	**Chemical Storage and Dosing - chemical storage tanks, C11, ref. EQT025**	**120 days**	**Thu 01/10/20**	**Thu 28/01/21**	**75 days**			
827	827	5.22.4.1.1	Submission for acceptance of purchasing package	60 days	Thu 01/10/20	Sun 29/11/20	0 days		828	
828	828	5.22.4.1.2	Invitation of quotations for purchasing package	30 days	Mon 30/11/20	Tue 29/12/20	0 days	827	829	
829	829	5.22.4.1.3	Acceptance of conforming quotation	30 days	Wed 30/12/20	Thu 28/01/21	0 days	828	841,844	
830	**830**	**5.22.4.2**	**Chemical Storage and Dosing - chemical dosing pumps, C11, ref. EQT027**	**150 days**	**Thu 01/10/20**	**Sat 27/02/21**	**668 days**			
831	831	5.22.4.2.1	Submission for acceptance of purchasing package	60 days	Thu 01/10/20	Sun 29/11/20	0 days		832	
832	832	5.22.4.2.2	Invitation of quotations for purchasing package	60 days	Mon 30/11/20	Thu 28/01/21	0 days	831	833	
833	833	5.22.4.2.3	Acceptance of conforming quotation	30 days	Fri 29/01/21	Sat 27/02/21	0 days	832	847	
834	**834**	**5.22.4.3**	**Chemical Storage and Dosing - transfer pumps, C11, ref. EQT026**	**120 days**	**Thu 01/10/20**	**Thu 28/01/21**	**698 days**			
835	835	5.22.4.3.1	Submission for acceptance of purchasing package	60 days	Thu 01/10/20	Sun 29/11/20	0 days		836	
836	836	5.22.4.3.2	Invitation of quotations for purchasing package	30 days	Mon 30/11/20	Tue 29/12/20	0 days	835	837	
837	837	5.22.4.3.3	Acceptance of conforming quotation	30 days	Wed 30/12/20	Thu 28/01/21	0 days	836	850	
838	**838**	**5.22.5**	**Design Submissions for Temporary Chemical Dosing System**	**275 days**	**Tue 28/07/20**	**Wed 28/04/21**	**75 days**			
839	839	5.22.5.1	Electrical schematic drawings for Temporary Chemical Dosing System	60 days	Tue 28/07/20	Fri 25/09/20	249 days		822FF	
840	840	5.22.5.2	CDS081-6 - Civil and dimensional requirements drawings for Temporary Chemical Dosing S	70 days	Fri 28/08/20	Thu 05/11/20	208 days		822FF	
841	841	5.22.5.3	CDS029 - Detailed Design for Electrical Installations for Temporary Chemical System	90 edays	Thu 28/01/21	Wed 28/04/21	75 edays	829	857,823FF	
842	**842**	**5.22.6**	**Manufacturing and Delivery of Plant & Materials**	**416 days**	**Fri 29/01/21**	**Sun 20/03/22**	**507 days**			
843	**843**	**5.22.6.1**	**Chemical Storage Tanks, EQT025**	**416 days**	**Fri 29/01/21**	**Sun 20/03/22**	**507 days**			
844	844	5.22.6.1.1	Manufacturing and Factory Acceptance Test of Plant	180 days	Fri 29/01/21	Tue 27/07/21	191 days	829	845	
845	845	5.22.6.1.2	Shipping and Delivery of Plant to site	45 days	Fri 04/02/22	Sun 20/03/22	20 days	844,853FF-60 eday	856	
846	**846**	**5.22.6.2**	**Chemical Dosing Pumps, EQT027**	**386 days**	**Sun 28/02/21**	**Sun 20/03/22**	**507 days**			
847	847	5.22.6.2.1	Manufacturing and Factory Acceptance Test of Plant	180 days	Sun 28/02/21	Thu 26/08/21	161 days	833	848	
848	848	5.22.6.2.2	Shipping and Delivery of Plant to site	45 days	Fri 04/02/22	Sun 20/03/22	20 days	847,853FF-60 eday	856	
849	**849**	**5.22.6.3**	**Chemical Transfer Pumps, EQT026**	**416 days**	**Fri 29/01/21**	**Sun 20/03/22**	**507 days**			
850	850	5.22.6.3.1	Manufacturing and Factory Acceptance Test of Plant	180 days	Fri 29/01/21	Tue 27/07/21	191 days	837	851	
851	851	5.22.6.3.2	Shipping and Delivery of Plant to site	45 days	Fri 04/02/22	Sun 20/03/22	20 days	850,853FF-60 eday	856	
852	**852**	**5.22.7**	**Site Installation Work**	**361 days**	**Sat 09/04/22**	**Wed 05/04/23**	**313 days**			
853	853	5.22.7.1	Tentative Civil Handover Date, Temporary Chemical Dosing (Rev. 5)	1 day	Thu 19/05/22	Thu 19/05/22	0 days		845FF-60 edays,848	
854	854	5.22.7.2	Tentative Civil Handover Date, Chemical Pipe Trench (by others)	1 day	Sun 01/05/22	Sun 01/05/22	51 days		856FF+50 days	
855	**855**	**5.22.7.3**	**Commencement of E&M Installation at Temporary Chemical Dosing System**	**361 days**	**Sat 09/04/22**	**Wed 05/04/23**	**313 days**			



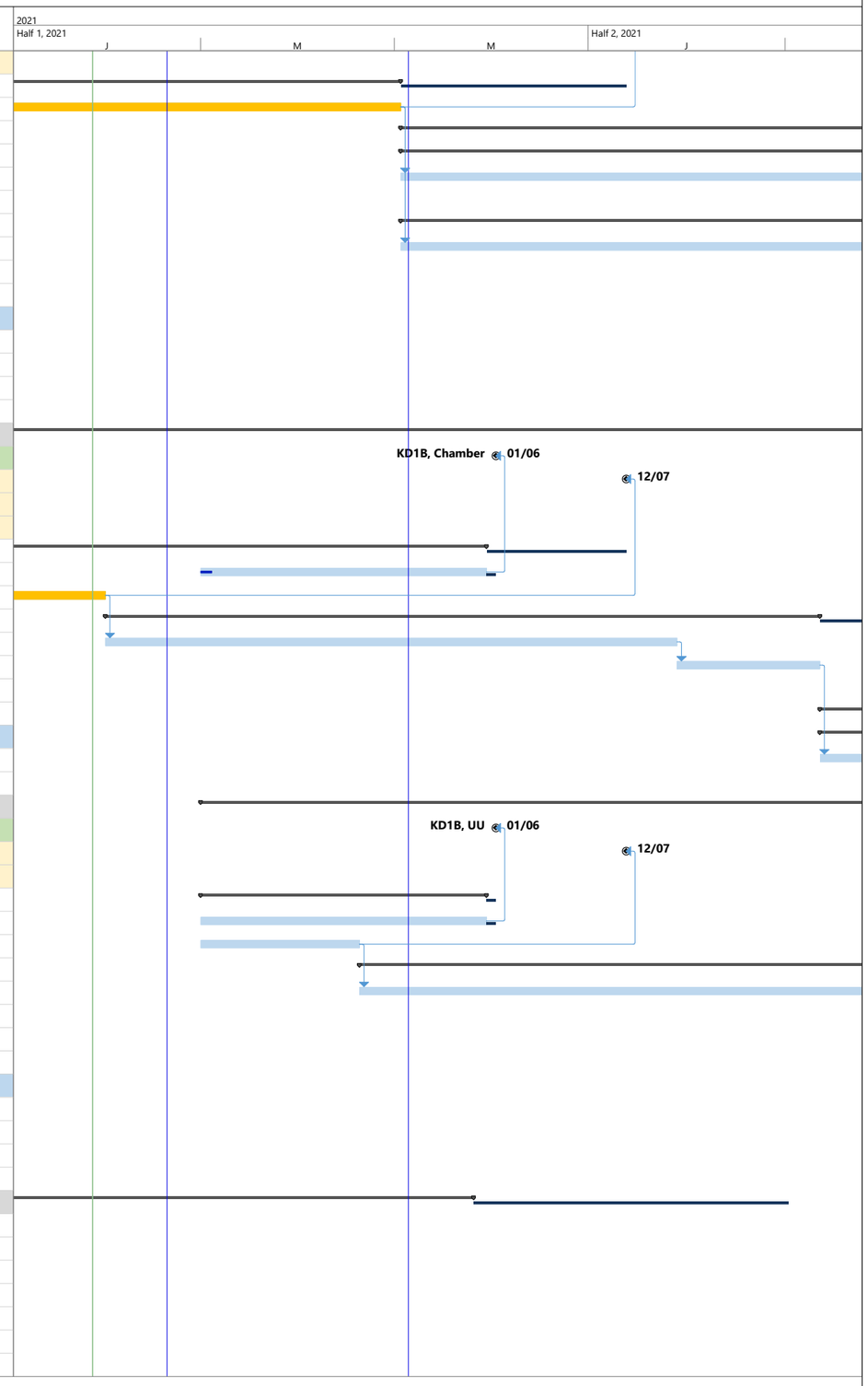
ID	ID	WBS	Task Name	Duration between Task Start and Finish	Start	Finish	Float Time	Predecessors	Successors	Resource Names
856	856	5.22.7.3.1	Mechanical Installations for E&M Equip. for Chemical Dosing System	90 edays	Sat 09/04/22	Fri 08/07/22	0 edays	854FF+50 days,12	857SS+30 edays,85	ME - D x 2~4 men
857	857	5.22.7.3.2	Electrical Installations for E&M Equip. for Chemical Dosing System	90 edays	Mon 09/05/22	Sun 07/08/22	0 edays	856SS+30 edays,8	858	
858	**858**	**5.22.7.3.3**	**Site Acceptance Test for E&M Equip for Chemical Dosing System**	**30 edays**	**Sun 07/08/22**	**Tue 06/09/22**	**174 edays**	**856,857**	**859**	
859	**859**	**5.22.7.3.4**	**System Commissioning for E&M Equip for Chemical Dosing System**	**30 edays**	**Mon 27/02/23**	**Wed 29/03/23**	**0 edays**	**858,866FF**	**860**	
860	860	5.22.7.3.5	Risk Allowances for Completion of Processing Plant at Chemical Dosing System	7 edays	Wed 29/03/23	Wed 05/04/23	308.63 edays	859	1258	
861	**861**	**5.22.7.3.6**	**Building Services Installations at Temp. Chemical Dosing System areas**	**314 days**	**Fri 20/05/22**	**Wed 29/03/23**	**313 days**			
862	862	5.22.7.3.6.1	Lighting and Power Distribution System, Temp. Chem	90 days	Fri 20/05/22	Wed 17/08/22	0 days	853	866,863	BS - A x 4~6 men
863	863	5.22.7.3.6.2	Fire Services Installation, DG Stores, Temp. Chem	90 days	Thu 18/08/22	Tue 15/11/22	0 days	862	1194,1195,866,864	FS - A x 4~6 men
864	864	5.22.7.3.6.3	Lightning Protection System, Temp. Chem	30 days	Wed 16/11/22	Thu 15/12/22	0 days	863	865	
865	865	5.22.7.3.6.4	Mechanical Ventilation System, Temp. Chem	14 days	Fri 16/12/22	Thu 29/12/22	0 days	864	866	MVAC - A x 4~6 men
866	866	5.22.7.3.6.5	Testing and Commissioning of Building Services Installations, Temp. Chem	90 days	Fri 30/12/22	Wed 29/03/23	0 days	862,863,865	859FF	BS - C x 2~4 men
867	**867**	**5.23**	**Emergency Generator House, Portion B7 & B-7B (PS 6B.6.6)**	**1279 days**	**Thu 01/10/20**	**Mon 01/04/24**	**0 days**			
868	868	5.23.1	Planned Key Date Completion Date - KD1B, Emergency Generator House	0 days	Tue 01/06/21	Tue 01/06/21	0 days	872FF		
869	869	5.23.2	Planned Sectional Completion Date - Section 1, Emergency Generator House	0 days	Mon 12/07/21	Mon 12/07/21	0 days	873FF,874FF		
870	870	5.23.3	Planned Sectional Completion Date - Section 2, Emergency Generator House	0 days	Mon 01/04/24	Mon 01/04/24	0 days	887FF		
871	**871**	**5.23.4**	**Design Submissions for Emergency Generator Set**	**252 days**	**Thu 01/10/20**	**Thu 10/06/21**	**33 days**			
872	872	5.23.4.1	CDS081-10 - Civil and dimensional requirements drawings for Emergency Generator House	90 days	Fri 01/01/21	Wed 31/03/21	62 days		868FF	
873	873	5.23.4.2	CDS061 - Detailed Design for Emergency Generator Set	150 edays	Thu 01/10/20	Sun 28/02/21	134.38 edays		869FF	
874	874	5.23.4.3	CDS034-6 - Detailed Design for Electrical Installations BS at Emergency Generator House, F	90 edays	Fri 12/03/21	Thu 10/06/21	0 edays	133	876,881,869FF	
875	**875**	**5.23.5**	**Manufacturing and Delivery of Plant & Materials**	**285 days**	**Thu 10/06/21**	**Mon 21/03/22**	**616 days**			
876	876	5.23.5.1	Manufacturing and Factory Acceptance Test of Plant	240 days	Thu 10/06/21	Fri 04/02/22	0 days	874	877	
877	877	5.23.5.2	Shipping and Delivery of Plant to Site	45 days	Sat 05/02/22	Mon 21/03/22	589 days	876,879FF-60 eday	882	
878	**878**	**5.23.6**	**Site Installation Work**	**1000 days**	**Thu 10/06/21**	**Tue 05/03/24**	**27 days**			
879	879	5.23.6.1	Tentative Civil Handover Date, Emergency Generator House (Rev. 5)	1 day	Thu 19/05/22	Thu 19/05/22	1 day		856FF+50 days,877F	
880	**880**	**5.23.6.2**	**Commencement of E&M Installation at Emergency Generator House**	**1000 days**	**Thu 10/06/21**	**Tue 05/03/24**	**27 days**			
881	881	5.23.6.2.1	Application for EPD's Approval for Installation of Diesel Engine Generator	21 days	Thu 10/06/21	Wed 30/06/21	853 days	874	882	
882	882	5.23.6.2.2	Installation and SAT of Emergency Power Generator and associated work, GH	60 days	Wed 01/11/23	Sat 30/12/23	0 days	881,877	884	GS - A x 4 men
883	**883**	**5.23.6.2.3**	**Building Services Installation at Emergency Generator House**	**66 days**	**Sun 31/12/23**	**Tue 05/03/24**	**27 days**			
884	884	5.23.6.2.3.1	Fire Services Installation, GH	30 days	Sun 31/12/23	Mon 29/01/24	0 days	882	885	FS - A x 4~6 men
885	885	5.23.6.2.3.2	Mechanical Ventilation System, GH	14 days	Tue 30/01/24	Mon 12/02/24	0 days	884	886	MVAC - A x 4~6 men
886	886	5.23.6.2.3.3	Lightning Protection System, GH	15 days	Tue 13/02/24	Tue 27/02/24	0 days	885	887	
887	887	5.23.6.2.3.4	Testing and Commissioning of Building Services Installation, GH	7 days	Wed 28/02/24	Tue 05/03/24	27 days	886	870FF	BS - A x 4~6 men
888	**888**	**5.24**	**Deodorization System, DOU 1, Portion B7 & B-7B (PS 6B.2.6)**	**1583 days**	**Mon 02/12/19**	**Mon 01/04/24**	**0 days**			
889	889	5.24.1	Planned Key Date Completion Date - KD1B, DOU 1	0 days	Tue 01/06/21	Tue 01/06/21	0 days	902FF,903FF		
890	890	5.24.2	Planned Sectional Completion Date - Section 1, DOU 1	0 days	Mon 12/07/21	Mon 12/07/21	0 days	904FF		
891	891	5.24.3	Planned Sectional Completion Date - Section 2, DOU 1	0 days	Mon 01/04/24	Mon 01/04/24	0 days			
892	**892**	**5.24.4**	**Selection of Plant and Materials**	**485 days**	**Mon 02/12/19**	**Tue 30/03/21**	**4 days**			
893	**893**	**5.24.4.1**	**DOU - biotrickling filter (DOU No. 1), C11, ref. EQT001**	**194 days**	**Mon 02/12/19**	**Fri 12/06/20**	**0 days**			
894	894	5.24.4.1.1	Submission for acceptance of purchasing package	120 days	Mon 02/12/19	Mon 30/03/20	0 days		895	
895	895	5.24.4.1.2	Invitation of quotations for purchasing package	60 days	Tue 31/03/20	Fri 29/05/20	0 days	894	896	
896	896	5.24.4.1.3	Acceptance of conforming quotation (Completed)	14 days	Sat 30/05/20	Fri 12/06/20	0 days	895	904	
897	**897**	**5.24.4.2**	**DOU - FRP air ductwork, C11, EQT047**	**120 days**	**Tue 01/12/20**	**Tue 30/03/21**	**4 days**			
898	898	5.24.4.2.1	Submission for acceptance of purchasing package	60 days	Tue 01/12/20	Fri 29/01/21	0 days		899	
899	899	5.24.4.2.2	Invitation of quotations for purchasing package	30 days	Sat 30/01/21	Sun 28/02/21	0 days	898	900	
900	900	5.24.4.2.3	Acceptance of conforming quotation	30 days	Mon 01/03/21	Tue 30/03/21	0 days	899	904	
901	**901**	**5.24.5**	**Design Submissions for DOU No. 1**	**359 days**	**Wed 15/07/20**	**Thu 08/07/21**	**4 days**			
902	902	5.24.5.1	Electrical schematic drawings for Deodorisation Systems	90 days	Wed 15/07/20	Mon 12/10/20	232 days		889FF	
903	903	5.24.5.2	CDS081-7 - Civil and dimensional requirements drawings for DOU No. 1	70 days	Fri 28/08/20	Thu 05/11/20	208 days		889FF	
904	904	5.24.5.3	CDS007-1 - Detailed Design for Deodorisation System, DOU No. 1	100 edays	Tue 30/03/21	Thu 08/07/21	0.63 edays	896,900	907,910,890FF	
905	**905**	**5.24.6**	**Manufacturing and Delivery of Plant & Materials**	**299 days**	**Fri 09/07/21**	**Tue 03/05/22**	**479 days**			
906	**906**	**5.24.6.1**	**DOU 1**	**299 days**	**Fri 09/07/21**	**Tue 03/05/22**	**479 days**			
907	907	5.24.6.1.1	Manufacturing and Factory Acceptance Test of Plant	240 days	Fri 09/07/21	Sat 05/03/22	14 days	904	908	
908	908	5.24.6.1.2	Shipping and Delivery of Plant to site	45 days	Sun 20/03/22	Tue 03/05/22	45 days	907,913SS-60 eday	916	
909	**909**	**5.24.6.2**	**FRP Air Ductwork**	**299 days**	**Fri 09/07/21**	**Tue 03/05/22**	**479 days**			
910	910	5.24.6.2.1	Manufacturing and Factory Acceptance Test of Plant	200 days	Fri 09/07/21	Mon 24/01/22	54 days	904	911	
911	911	5.24.6.2.2	Shipping and Delivery of Plant to Site	45 days	Sun 20/03/22	Tue 03/05/22	45 days	910,913SS-60 eday	916	
912	**912**	**5.24.7**	**Site Installation Work**	**201 days**	**Thu 19/05/22**	**Mon 05/12/22**	**434 days**			



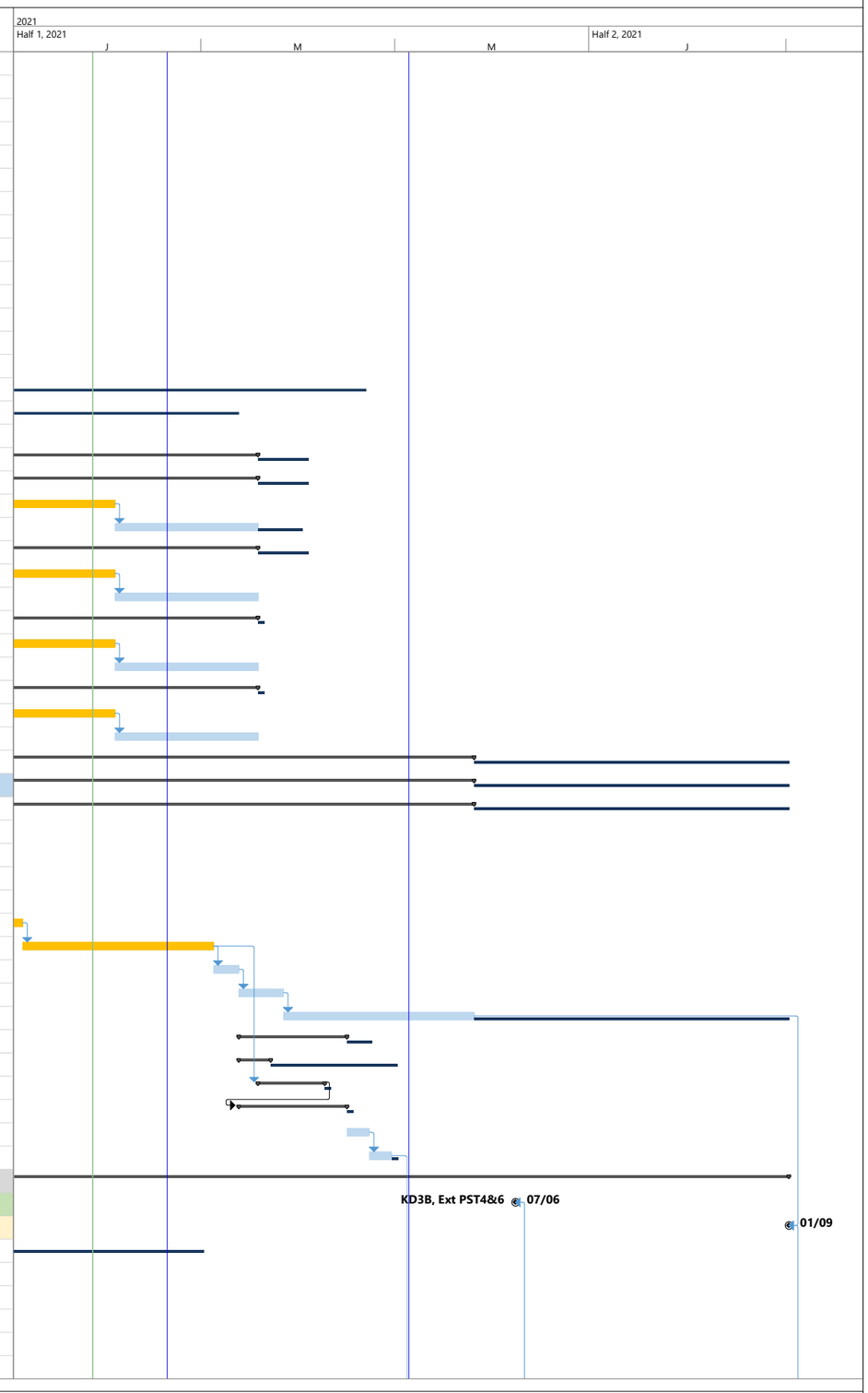
ID	ID	WBS	Task Name	Duration between Task Start and Finish	Start	Finish	Float Time	Predecessors	Successors	Resource Names
913	913	5.24.7.1	Tentative Civil Handover, DOU 1 (Rev. 5)	1 day	Thu 19/05/22	Thu 19/05/22	0 days		916FF+45 days,908S	
914	914	5.24.7.2	Tentative Civil Handover Date, underground air pipework for DOU 1 (by others)	1 day	Mon 01/08/22	Mon 01/08/22	30 days		916FF+45 days	
915	**915**	**5.24.7.3**	**Commencement of E&M Installation at DOU 1**	**171 days**	**Fri 17/06/22**	**Mon 05/12/2**	**434 days**			
916	916	5.24.7.3.1	Mechanical Installations for DOU 1	90 edays	Fri 17/06/22	Thu 15/09/22	0 edays	914FF+45 days,913	917SS+30 edays,91	ME - F x 4~6 men
917	917	5.24.7.3.2	Electrical Installations for DOU 1	90 edays	Sun 17/07/22	Sat 15/10/22	0 edays	916SS+30 edays	918	
918	918	5.24.7.3.3	Site Acceptance Test for DOU1	30 edays	Sat 15/10/22	Mon 14/11/22	0 edays	916,917	919	
919	919	5.24.7.3.4	System Commissioning for DOU 1	21 edays	Mon 14/11/22	Mon 05/12/22	429.63 edays	918	1258	
920	**920**	**5.25**	**Deodorization System, DOU 2A, Portion B-4 (PS 6B.2.6)**	**1583 days**	**Mon 02/12/19**	**Mon 01/04/2**	**0 days**			
921	921	5.25.1	Planned Key Date Completion Date - KD1B, DOU 2A	0 days	Tue 01/06/21	Tue 01/06/21	0 days			
922	922	5.25.2	Planned Sectional Completion Date - Section 1, DOU 2A	0 days	Mon 12/07/21	Mon 12/07/21	0 days	930FF		
923	923	5.25.3	Planned Sectional Completion Date - Section 2, DOU 2A	0 days	Mon 01/04/24	Mon 01/04/24	0 days			
924	**924**	**5.25.4**	**Selection of Plant and Materials**	**194 days**	**Mon 02/12/19**	**Fri 12/06/20**	**0 days**			
925	**925**	**5.25.4.1**	**DOU - activated carbon filter (DOU No. 2A, No. 3A, No. 3B), C11, ref. EQT028**	**194 days**	**Mon 02/12/19**	**Fri 12/06/20**	**0 days**			
926	926	5.25.4.1.1	Submission for acceptance of purchasing package	120 days	Mon 02/12/19	Mon 30/03/20	0 days		927	
927	927	5.25.4.1.2	Invitation of quotations for purchasing package	60 days	Tue 31/03/20	Fri 29/05/20	0 days	926	928	
928	928	5.25.4.1.3	Acceptance of conforming quotation (Completed)	14 days	Sat 30/05/20	Fri 12/06/20	0 days	927	930,951,972	
929	**929**	**5.25.5**	**Design Submissions for DOU No. 2A**	**200 days**	**Tue 01/09/20**	**Sat 20/03/21**	**115 days**			
930	930	5.25.5.1	CDS007-2 - Detailed Design for Deodorisation System, DOU No. 2A	200 edays	Tue 01/09/20	Sat 20/03/21	0 edays	928	933,936,922FF	
931	**931**	**5.25.6**	**Manufacturing and Delivery of Plant & Materials**	**345 days**	**Sat 20/03/21**	**Sun 27/02/22**	**484 days**			
932	**932**	**5.25.6.1**	**DOU 2A**	**345 days**	**Sat 20/03/21**	**Sun 27/02/22**	**484 days**			
933	933	5.25.6.1.1	Manufacturing and Factory Acceptance Test of Plant	300 days	Sat 20/03/21	Thu 13/01/22	0 days	930	934	
934	934	5.25.6.1.2	Shipping and Delivery of Plant to site	45 days	Fri 14/01/22	Sun 27/02/22	361 days	933	941	
935	**935**	**5.25.6.2**	**FRP Air Ductwork**	**345 days**	**Sat 20/03/21**	**Sun 27/02/22**	**484 days**			
936	936	5.25.6.2.1	Manufacturing and Factory Acceptance Test of Plant	300 days	Sat 20/03/21	Thu 13/01/22	0 days	930	937	
937	937	5.25.6.2.2	Shipping and Delivery of Plant to site	45 days	Fri 14/01/22	Sun 27/02/22	361 days	936	941	
938	938	5.25.7	Tentative Civil Handover, DOU 2A (Rev. 5)	1 day	Thu 23/02/23	Thu 23/02/23	0 days			
939	**939**	**5.25.8**	**Site Installation Work**	**231 days**	**Thu 23/02/23**	**Thu 12/10/23**	**123 days**			
940	**940**	**5.25.8.1**	**Commencement of E&M Installation at DOU 2A**	**231 days**	**Thu 23/02/23**	**Thu 12/10/23**	**123 days**	**560**		
941	941	5.25.8.1.1	Mechanical Installations for DOU 2A	90 edays	Thu 23/02/23	Wed 24/05/23	0 edays	934,937	942	ME - F x 4~6 men
942	942	5.25.8.1.2	Electrical Installations for DOU 2A	90 edays	Wed 24/05/23	Tue 22/08/23	0 edays	941	943	
943	943	5.25.8.1.3	Site Acceptance Test for E&M Equip for DOU 2A	30 edays	Tue 22/08/23	Thu 21/09/23	0 edays	962,963,942	944	
944	944	5.25.8.1.4	System Commissioning Test for DOU 2A	21 edays	Thu 21/09/23	Thu 12/10/23	118.63 edays	943	1258	
945	**945**	**5.26**	**Deodorization System, DOU 3A, Portion B7 & B-7B (PS 6B.2.6)**	**1313 days**	**Fri 28/08/20**	**Mon 01/04/2**	**0 days**			
946	946	5.26.1	Planned Key Date Completion Date - KD1B, DOU 3A	0 days	Tue 01/06/21	Tue 01/06/21	0 days	950FF		
947	947	5.26.2	Planned Sectional Completion Date - Section 1, DOU 3A	0 days	Mon 12/07/21	Mon 12/07/21	0 days	951FF		
948	948	5.26.3	Planned Sectional Completion Date - Section 2, DOU 3A	0 days	Mon 01/04/24	Mon 01/04/24	0 days			
949	**949**	**5.26.4**	**Design Submissions for DOU No. 3A**	**234 days**	**Fri 28/08/20**	**Mon 19/04/2**	**85 days**			
950	950	5.26.4.1	CDS081-8 - Civil and dimensional requirements drawings for DOU No. 3A	200 days	Fri 28/08/20	Mon 15/03/21	78 days		946FF	
951	951	5.26.4.2	CDS007-3 - Detailed Design for Deodorisation System, DOU No. 3A	200 edays	Thu 01/10/20	Mon 19/04/21	0 edays	928	954,957,947FF	
952	**952**	**5.26.5**	**Manufacturing and Delivery of Plant & Materials**	**225 days**	**Mon 19/04/21**	**Tue 30/11/21**	**634 days**			
953	**953**	**5.26.5.1**	**DOU 3A**	**225 days**	**Mon 19/04/21**	**Tue 30/11/21**	**634 days**			
954	954	5.26.5.1.1	Manufacturing and Factory Acceptance Test of Plant	180 edays	Mon 19/04/21	Sat 16/10/21	0 edays	951	955	
955	955	5.26.5.1.2	Shipping and Delivery of Plant to Site	45 edays	Sat 16/10/21	Tue 30/11/21	0 edays	954	962	
956	**956**	**5.26.5.2**	**FRP Air Ductwork**	**225 days**	**Mon 19/04/21**	**Tue 30/11/21**	**634 days**			
957	957	5.26.5.2.1	Manufacturing and Factory Acceptance Test of Plant	180 edays	Mon 19/04/21	Sat 16/10/21	0 edays	951	958	
958	958	5.26.5.2.2	Shipping and Delivery of Plant to Site	45 edays	Sat 16/10/21	Tue 30/11/21	0 edays	957	962	
959	959	5.26.6	Tentative Civil Handover, DOU 3A (Rev. 5)	1 day	Thu 19/05/22	Thu 19/05/22	0 days			
960	**960**	**5.26.7**	**Site Installation Work**	**171 days**	**Tue 30/11/21**	**Fri 20/05/22**	**634 days**			
961	**961**	**5.26.7.1**	**Commencement of E&M Installation at DOU 3A**	**171 days**	**Tue 30/11/21**	**Fri 20/05/22**	**634 days**			
962	962	5.26.7.1.1	Mechanical Installations for DOU 3A	120 edays	Tue 30/11/21	Wed 30/03/22	0 edays	958,955	963SS+30 edays,964	ME - F x 4~6 men
963	963	5.26.7.1.2	Electrical Installations for DOU 3A	90 edays	Thu 30/12/21	Wed 30/03/22	0 edays	962SS+30 edays	964,943	
964	964	5.26.7.1.3	Site Acceptance Test for E&M Equip for DOU 3A	30 edays	Wed 30/03/22	Fri 29/04/22	0 edays	962,963	965	
965	965	5.26.7.1.4	System Commissioning Test for DOU 3A	21 edays	Fri 29/04/22	Fri 20/05/22	629 edays	964	1258	
966	**966**	**5.27**	**Deodorization System, DOU 3B, Portion B-5B (PS 6B.2.6)**	**1265 days**	**Thu 15/10/20**	**Mon 01/04/2**	**0 days**			
967	967	5.27.1	Tentative Civil Handover Date, underground air pipework for DOU 3B (by others) (Rev. 5)	1 day	Wed 17/08/22	Wed 17/08/22	0 days		982FF+30 days,976S	
968	968	5.27.2	Planned Key Date Completion Date - KD1B, DOU 3B	0 days	Tue 01/06/21	Tue 01/06/21	0 days			
969	969	5.27.3	Planned Sectional Completion Date - Section 1, DOU 3B	0 days	Mon 12/07/21	Mon 12/07/21	0 days	972FF		



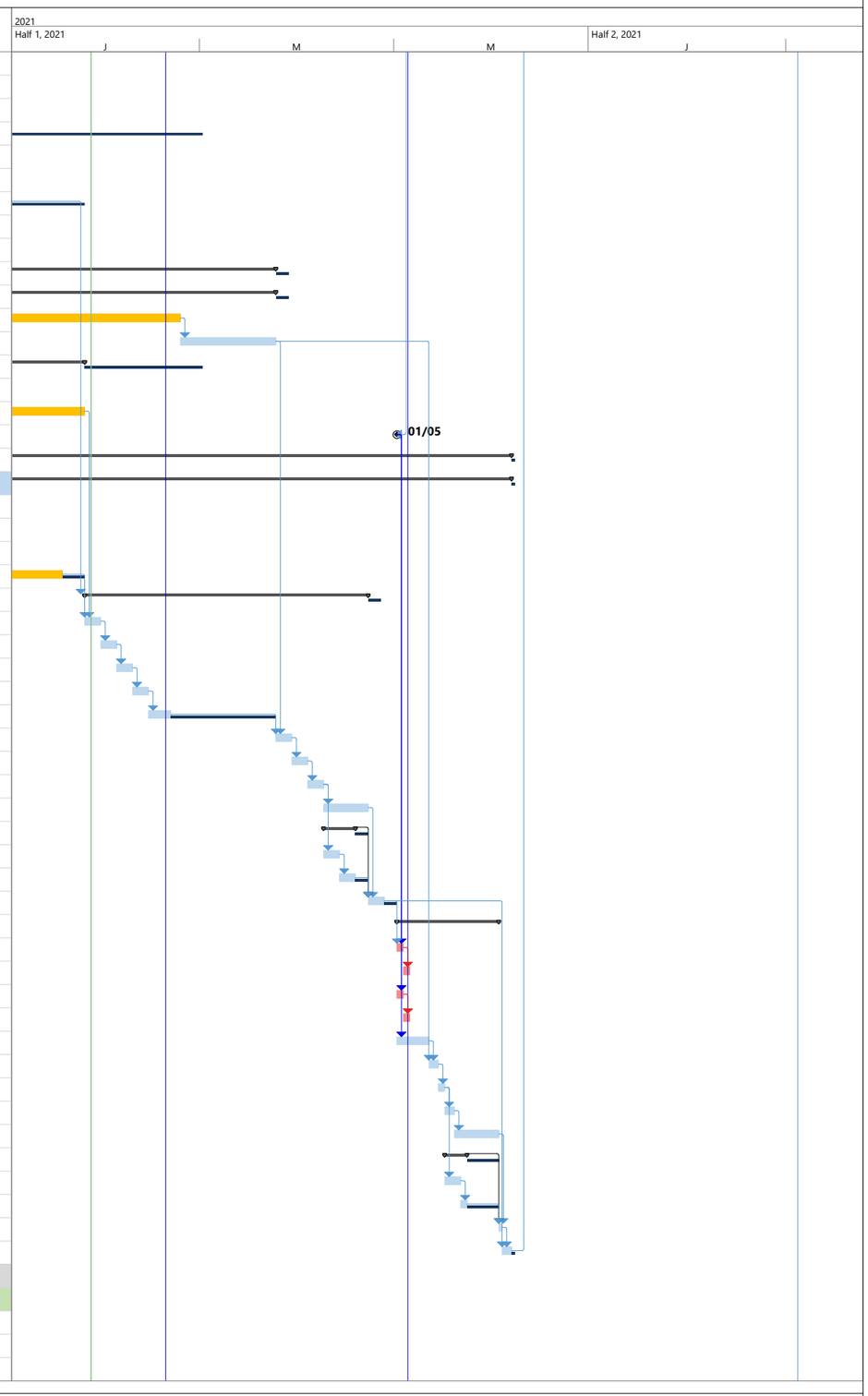
ID	ID	WBS	Task Name	Duration between Task Start and Finish	Start	Finish	Float Time	Predecessors	Successors	Resource Names
970	970	5.27.4	Planned Sectional Completion Date - Section 2, DOU 3B	0 days	Mon 01/04/24	Mon 01/04/24	0 days			
971	**971**	**5.27.5**	**Design Submissions for DOU No. 3B**	**200 days**	**Thu 15/10/20**	**Mon 03/05/21**	**71 days**			
972	972	5.27.5.1	CDS007-4 - Detailed Design for Deodorisation System, DOU No. 3B	200 edays	Thu 15/10/20	Mon 03/05/21	0 edays	928	975,978,969FF	
973	**973**	**5.27.6**	**Manufacturing and Delivery of Plant & Materials**	**471 days**	**Mon 03/05/21**	**Wed 17/08/22**	**374 days**			
974	**974**	**5.27.6.1**	**DOU 3B**	**471 days**	**Mon 03/05/21**	**Wed 17/08/22**	**374 days**			
975	975	5.27.6.1.1	Manufacturing and Factory Acceptance Test of Plant	180 edays	Mon 03/05/21	Sat 30/10/21	231 edays	972	976	
976	976	5.27.6.1.2	Shipping and Delivery of Plant to Site	60 edays	Sat 18/06/22	Wed 17/08/22	0 edays	975,967SS-60 eday	982	
977	**977**	**5.27.6.2**	**FRP Air Ductwork**	**456 days**	**Mon 03/05/21**	**Tue 02/08/22**	**389 days**			
978	978	5.27.6.2.1	Manufacturing and Factory Acceptance Test of Plant	180 edays	Mon 03/05/21	Sat 30/10/21	231 edays	972	979	
979	979	5.27.6.2.2	Shipping and Delivery of Plant to Site	45 edays	Sat 18/06/22	Tue 02/08/22	15 edays	978,967SS-60 eday	982	
980	**980**	**5.27.7**	**Site Installation Work**	**171 days**	**Wed 17/08/22**	**Sat 04/02/23**	**374 days**			
981	**981**	**5.27.7.1**	**Commencement of E&M Installation at DOU 3B**	**171 days**	**Wed 17/08/22**	**Sat 04/02/23**	**374 days**			
982	982	5.27.7.1.1	Mechanical Installations for DOU 3B	120 edays	Wed 17/08/22	Thu 15/12/22	0 edays	967FF+30 days,97(	983SS+30 edays,98(	ME - F x 4~6 men
983	983	5.27.7.1.2	Electrical Installations for DOU 3B	90 edays	Fri 16/09/22	Thu 15/12/22	0 edays	982SS+30 edays	984	
984	984	5.27.7.1.3	Site Acceptance Test for E&M Equip for DOU 3B	30 edays	Thu 15/12/22	Sat 14/01/23	0 edays	982,983	985	
985	985	5.27.7.1.4	System Commissioning Test for DOU 3B	21 edays	Sat 14/01/23	Sat 04/02/23	369 edays	984	1258	
986	**986**	**5.28**	**Flowmeter and Valve Chambers, Portion B7 & B-7B (PS 6B.2.13)**	**1278 days**	**Sun 01/11/20**	**Wed 01/05/24**	**0 days**			
987	987	5.28.1	Planned Key Date Completion Date - KD1B, Chambers	0 days	Tue 01/06/21	Tue 01/06/21	0 days	992FF		
988	988	5.28.2	Planned Sectional Completion Date - Section 1, Chambers	0 days	Mon 12/07/21	Mon 12/07/21	0 days	993FF		
989	989	5.28.3	Planned Sectional Completion Date - Section 2, Chambers	0 days	Mon 01/04/24	Mon 01/04/24	0 days			
990	990	5.28.4	Planned Sectional Completion Date - Section 4, Chambers	0 days	Wed 01/05/24	Wed 01/05/24	0 days			
991	**991**	**5.28.5**	**Design Submissions for Valve and Flowmeter Chambers**	**210 days**	**Sun 01/11/20**	**Sat 29/05/21**	**44 days**			
992	992	5.28.5.1	CDS081-9 - Civil and dimensional requirements drawings for Valve and Flowmeter Chambe	90 days	Mon 01/03/21	Sat 29/05/21	3 days		987FF	
993	993	5.28.5.2	CDS018 - Detailed Design for Flowmeter and Valve Chambers	90 edays	Sun 01/11/20	Sat 30/01/21	0 edays		995,988FF	
994	**994**	**5.28.6**	**Manufacturing and Delivery of Plant & Materials**	**225 days**	**Sat 30/01/21**	**Sat 11/09/21**	**734 days**			
995	995	5.28.6.1	Manufacturing and Factory Acceptance Test of Plant	180 days	Sat 30/01/21	Wed 28/07/21	0 days	993	996	
996	996	5.28.6.2	Shipping and Delivery of Plant to Site	45 days	Thu 29/07/21	Sat 11/09/21	0 days	995	1000	
997	997	5.28.7	Tentative Civil Handover, Chambers (Rev. 5)	1 day	Thu 19/05/22	Thu 19/05/22	0 days			
998	**998**	**5.28.8**	**Site Installation Work**	**150 days**	**Sun 12/09/21**	**Tue 08/02/22**	**734 days**			
999	**999**	**5.28.8.1**	**Commencement of Valves and Flowmeters Installation at Chambers**	**150 days**	**Sun 12/09/21**	**Tue 08/02/22**	**734 days**			
1000	1000	5.28.8.1.1	Installation of valves and flowmeters	90 days	Sun 12/09/21	Fri 10/12/21	0 days	996	1001	ME - C x 4~6 men
1001	1001	5.28.8.1.2	cables laying and terminations	60 days	Sat 11/12/21	Tue 08/02/22	729 days	1000	1258	EE - A x 4~6 men
1002	**1002**	**5.29**	**Underground Pipework, Modification and Connection Works, Portion B-9B (PS 6B.2.22)**	**1161 days**	**Mon 01/03/21**	**Sat 04/05/24**	**0 days**			
1003	1003	5.29.1	Planned Key Date Completion Date - KD1B, UU	0 days	Tue 01/06/21	Tue 01/06/21	0 days	1007FF		
1004	1004	5.29.2	Planned Sectional Completion Date - Section 1, Underground Pipework	0 days	Mon 12/07/21	Mon 12/07/21	0 days	1008FF		
1005	1005	5.29.3	Planned Sectional Completion Date - Section 4, Underground Pipework	0 days	Wed 01/05/24	Wed 01/05/24	0 days	1018FF		
1006	**1006**	**5.29.4**	**Design Submissions**	**90 days**	**Mon 01/03/21**	**Sun 30/05/21**	**3 days**			
1007	1007	5.29.4.1	CDS015 - Detailed Design for Underground Pipework Modification and Connection with th	90 edays	Mon 01/03/21	Sun 30/05/21	2.38 edays		1003FF	
1008	1008	5.29.4.2	CDS016 - Detailed Design for Temporary Pumping System for maintaining the existing bior	50 edays	Mon 01/03/21	Tue 20/04/21	0 edays		1010,1004FF	
1009	**1009**	**5.29.5**	**Manufacturing and Delivery of Plant & Materials**	**1079 days**	**Tue 20/04/21**	**Tue 02/04/24**	**16 days**			
1010	1010	5.29.5.1	Manufacturing and Factory Acceptance Test of Plant	180 days	Tue 20/04/21	Sat 16/10/21	854 days	1008	1011	
1011	1011	5.29.5.2	Shipping and Delivery of Plant to Site	45 days	Sun 18/02/24	Tue 02/04/24	16 days	1010,1012SS-60 ec	1016	
1012	1012	5.29.6	Tentative Civil Handover, Road (Rev. 5)	1 day	Thu 18/04/24	Thu 18/04/24	0 days		1011SS-60 edays,10	
1013	**1013**	**5.29.7**	**Site Installation**	**16 days**	**Fri 19/04/24**	**Sat 04/05/24**	**0 days**			
1014	**1014**	**5.29.7.1**	**Commencement of underground pipework modification and connection works**	**16 days**	**Fri 19/04/24**	**Sat 04/05/24**	**0 days**			
1015	1015	5.29.7.1.1	Temporary Flow Diversion and Road Excavation Work	3 days	Fri 19/04/24	Sun 21/04/24	0 days	1012	1016	
1016	1016	5.29.7.1.2	Pipe Laying and connection works	7 days	Mon 22/04/24	Sun 28/04/24	0 days	1015,1011	1017	
1017	1017	5.29.7.1.3	Pressure Tests	3 days	Mon 29/04/24	Wed 01/05/24	0 days	1016	1018	
1018	1018	5.29.7.1.4	Make Good	3 days	Thu 02/05/24	Sat 04/05/24	0 days	1017	1005FF	
1019	**1019**	**5.30**	**Temporary Filtrate Lifting Well and Eq. Tank, Portion B-3B (PS 6B.2.16)**	**450 days**	**Mon 02/03/20**	**Tue 25/05/21**	**99 days**			
1020	**1020**	**5.30.1**	**Selection of Suppliers for major plant and materials and Civil Subcontractor for Temporary**	**196 days**	**Mon 02/03/20**	**Sun 13/09/20**	**0 days**			
1021	**1021**	**5.30.1.1**	**Mis - filtrate lift pumps and filtrate transfer pumps, C11, ref. EQT011**	**73 days**	**Mon 02/03/20**	**Wed 13/05/20**	**0 days**			
1022	1022	5.30.1.1.1	Submission for acceptance of purchasing package	29 days	Mon 02/03/20	Mon 30/03/20	0 days		1023	
1023	1023	5.30.1.1.2	Invitation of quotations for purchasing package	30 days	Tue 31/03/20	Wed 29/04/20	0 days	1022	1024	
1024	1024	5.30.1.1.3	Acceptance of conforming quotation and acceptance for Manufacture (Completed)	14 days	Thu 30/04/20	Wed 13/05/20	0 days	1023	1043,1046	
1025	**1025**	**5.30.1.2**	**Mis - Instrumentations**	**73 days**	**Mon 02/03/20**	**Wed 13/05/20**	**0 days**			
1026	1026	5.30.1.2.1	Submission for acceptance of purchasing package	29 days	Mon 02/03/20	Mon 30/03/20	0 days		1027	



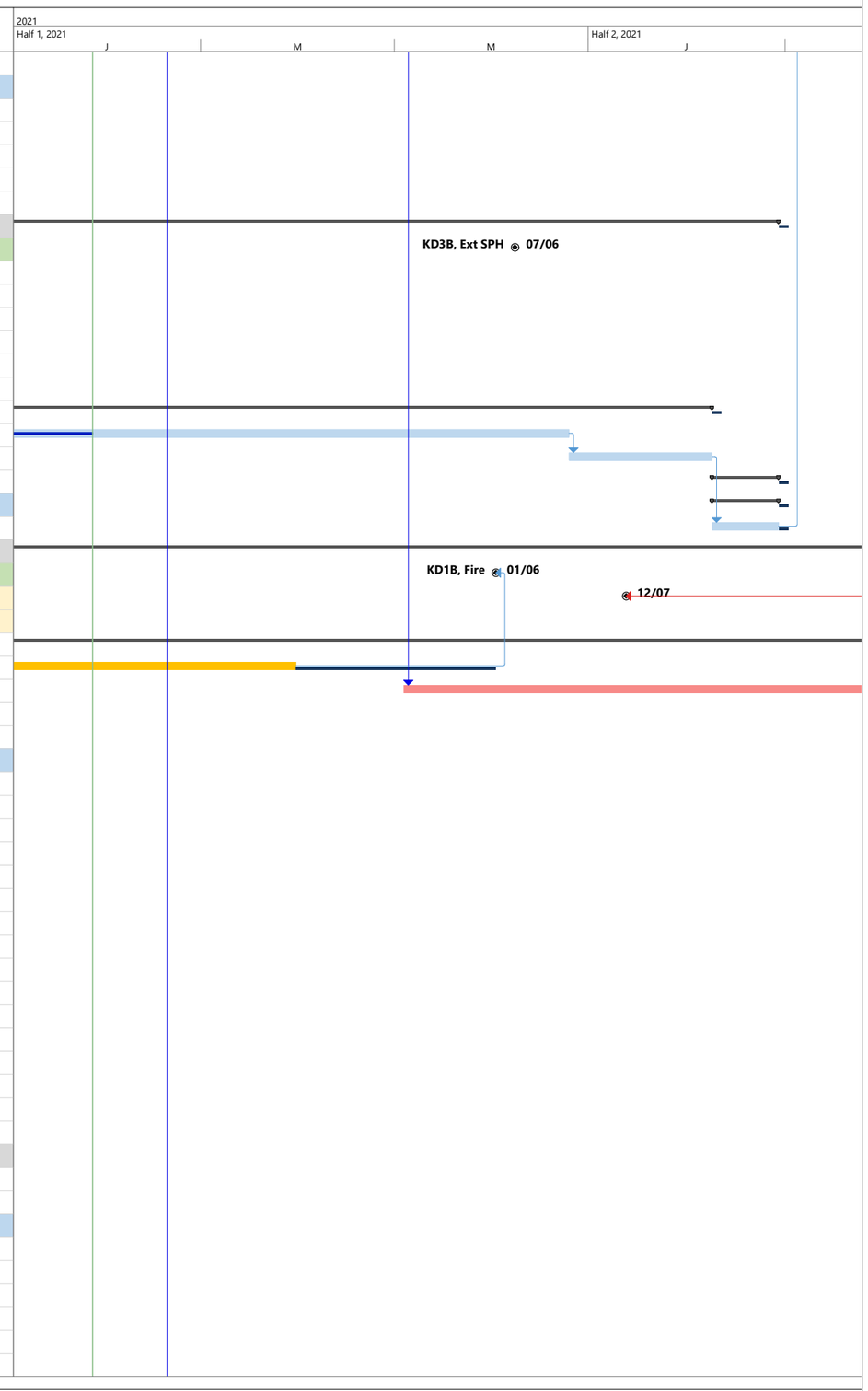
ID	ID	WBS	Task Name	Duration between Task Start and Finish	Start	Finish	Float Time	Predecessors	Successors	Resource Names
1027	1027	5.30.1.2.2	Invitation of quotations for purchasing package	30 days	Tue 31/03/20	Wed 29/04/20	0 days	1026	1028	
1028	1028	5.30.1.2.3	Acceptance of conforming quotation and acceptance for Manufacture (Completed)	14 days	Thu 30/04/20	Wed 13/05/20	0 days	1027	1043,1049	
1029	**1029**	**5.30.1.3**	**Mis - Pipework (To be provided by Mechanical Sub-Contactor)**	**42 days**	**Mon 03/08/20**	**Sun 13/09/20**	**0 days**			
1030	1030	5.30.1.3.1	Submission for acceptance of purchasing package	7 days	Mon 03/08/20	Sun 09/08/20	0 days		1031	
1031	1031	5.30.1.3.2	Invitation of quotations for purchasing package	14 days	Mon 10/08/20	Sun 23/08/20	0 days	1030	1032	
1032	1032	5.30.1.3.3	Acceptance of conforming quotation and acceptance for Manufacture	21 days	Mon 24/08/20	Sun 13/09/20	0 days	1031	1043,1052	
1033	**1033**	**5.30.1.4**	**Mis - Valve (To be provided by Mechanical Sub-Contractor)**	**42 days**	**Mon 03/08/20**	**Sun 13/09/20**	**0 days**			
1034	1034	5.30.1.4.1	Submission for acceptance of purchasing package	7 days	Mon 03/08/20	Sun 09/08/20	0 days		1035	
1035	1035	5.30.1.4.2	Invitation of quotations for purchasing package	14 days	Mon 10/08/20	Sun 23/08/20	0 days	1034	1036	
1036	1036	5.30.1.4.3	Acceptance of conforming quotation and acceptance for Manufacture	21 days	Mon 24/08/20	Sun 13/09/20	0 days	1035	1043,1055	
1037	**1037**	**5.30.1.5**	**Civil Work Subletting Package (Repeated WBS 5.13.17)**	**19 days**	**Tue 14/07/20**	**Sat 01/08/20**	**0 days**			
1038	1038	5.30.1.5.1	Submission for acceptance of subletting package	3 days	Tue 14/07/20	Thu 16/07/20	0 days		1039	
1039	1039	5.30.1.5.2	Invitation of tender for subletting package	14 days	Fri 17/07/20	Thu 30/07/20	0 days	1038	1040	
1040	1040	5.30.1.5.3	Acceptance of conforming quotation and acceptance for Manufacture	2 days	Fri 31/07/20	Sat 01/08/20	0 days	1039	1046,1049,1052,10	
1041	**1041**	**5.30.2**	**Design Submissions for Temporary Filtrate Lifting Well and Eq. Tank**	**34 days**	**Tue 01/09/20**	**Sun 04/10/20**	**199 days**			
1042	1042	5.30.2.1	CDS050-5 - Detailed Design for Lifting Appliances - Temp. Filtrate Eq. System, Existing Slud	30 edays	Tue 01/09/20	Thu 01/10/20	163 edays	113	1071	
1043	1043	5.30.2.2	Design submission for E&M Installation works for temp. filtrate eq. system	21 days	Mon 14/09/20	Sun 04/10/20	0 days	1024,1028,1032,1	1045,1051,1048,10	
1044	**1044**	**5.30.3**	**Manufacturing and Delivery of Plant & Materials**	**165 days**	**Mon 05/10/20**	**Thu 18/03/21**	**16 days**			
1045	**1045**	**5.30.3.1**	**Filtrate Lift Pumps and Filtrate Transfer Pump, EQT011**	**165 days**	**Mon 05/10/20**	**Thu 18/03/21**	**16 days**	**1043**		
1046	1046	5.30.3.1.1	Manufacturing and Factory Acceptance Test of Plant	120 days	Mon 05/10/20	Mon 01/02/21	0 days	1040,1024	1047	
1047	1047	5.30.3.1.2	Shipping and Delivery of Plant to site	45 days	Tue 02/02/21	Thu 18/03/21	14 days	1046	1076	
1048	**1048**	**5.30.3.2**	**Instrumentations**	**165 days**	**Mon 05/10/20**	**Thu 18/03/21**	**16 days**	**1043**		
1049	1049	5.30.3.2.1	Manufacturing and Factory Acceptance Test of Plant	120 days	Mon 05/10/20	Mon 01/02/21	0 days	1040,1028	1050	
1050	1050	5.30.3.2.2	Shipping and Delivery of Plant to site	45 days	Tue 02/02/21	Thu 18/03/21	0 days	1049	1077	
1051	**1051**	**5.30.3.3**	**Pipework**	**165 days**	**Mon 05/10/20**	**Thu 18/03/21**	**2 days**	**1043**		
1052	1052	5.30.3.3.1	Manufacturing and Factory Acceptance Test of Plant	120 days	Mon 05/10/20	Mon 01/02/21	0 days	1040,1032	1053	
1053	1053	5.30.3.3.2	Shipping and Delivery of Plant to site	45 days	Tue 02/02/21	Thu 18/03/21	0 days	1052	1075	
1054	**1054**	**5.30.3.4**	**Valve**	**165 days**	**Mon 05/10/20**	**Thu 18/03/21**	**2 days**	**1043**		
1055	1055	5.30.3.4.1	Manufacturing and Factory Acceptance Test of Plant	120 days	Mon 05/10/20	Mon 01/02/21	0 days	1040,1036	1056	
1056	1056	5.30.3.4.2	Shipping and Delivery of Plant to site	45 days	Tue 02/02/21	Thu 18/03/21	0 days	1055	1075	
1057	**1057**	**5.30.4**	**Site Installation Work**	**297 days**	**Sat 01/08/20**	**Tue 25/05/21**	**99 days**			
1058	**1058**	**5.30.4.1**	**Commencement of Civil Construction and E&M Installation at Temp. Filtrate Lifting Well**	**297 days**	**Sat 01/08/20**	**Tue 25/05/21**	**99 days**			
1059	**1059**	**5.30.4.1.1**	**Civil Construction Work**	**297 days**	**Sat 01/08/20**	**Tue 25/05/21**	**99 days**			
1060	1060	5.30.4.1.1.1	Civil on-site survey and report submission for acceptance	5 edays	Sat 01/08/20	Thu 06/08/20	0 edays	1040	1061,1062	
1061	1061	5.30.4.1.1.2	Civil structural design and drawing submission for acceptance	30 days	Fri 07/08/20	Sat 05/09/20	0 days	1060	1063	
1062	1062	5.30.4.1.1.3	Site Clearance, UU diversion and construction of U-channel	21 days	Fri 07/08/20	Thu 27/08/20	0 days	1060	1063	
1063	1063	5.30.4.1.1.4	ELS (Sheeting and Excavation)	60 days	Sun 06/09/20	Wed 04/11/20	0 days	1062,1061	1064	
1064	1064	5.30.4.1.1.5	Grouting Works	60 days	Thu 05/11/20	Sun 03/01/21	0 days	1063	1065	
1065	1065	5.30.4.1.1.6	RC structure works including cast-in items	60 days	Mon 04/01/21	Thu 04/03/21	0 days	1064	1074,1071,1066	
1066	1066	5.30.4.1.1.7	Removal Formwork and Flasework	8 days	Fri 05/03/21	Fri 12/03/21	0 days	1065	1071,1072,1075,10	
1067	1067	5.30.4.1.1.8	Waterproofing	14 days	Sat 13/03/21	Fri 26/03/21	0 days	1066	1068	
1068	1068	5.30.4.1.1.9	Other architectual works and finishing works	60 days	Sat 27/03/21	Tue 25/05/21	99 days	1067	1085FF	
1069	**1069**	**5.30.4.1.2**	**E&M Installation Work**	**34 days**	**Sat 13/03/21**	**Thu 15/04/21**	**8 days**			
1070	**1070**	**5.30.4.1.2.1**	**Installation of Lifting Appliances at Temporary Filtrate Lifting Well and Eq. Tank**	**10 days**	**Sat 13/03/21**	**Mon 22/03/21**	**40 days**			
1074	**1074**	**5.30.4.1.2.2**	**Mechanical Installations for Temp. Filtrate Lifting Well and Eq. Tank**	**21 days**	**Fri 19/03/21**	**Thu 08/04/21**	**2 days**	**1065**	**1078FS-30 days**	
1078	**1078**	**5.30.4.1.2.3**	**Electrical Installations for Temp. Filtrate Lifting Well and Eq. Tank**	**34 days**	**Sat 13/03/21**	**Thu 15/04/21**	**2 days**	**1074FS-30 days**		
1081	**1081**	**5.30.4.1.3**	**Site Acceptance Test for E&M Equip at Filtrate Lifting Well and Eq. Tank**	**7 days**	**Fri 16/04/21**	**Thu 22/04/21**	**0 days**	**1080**	**1082**	
1082	**1082**	**5.30.4.1.4**	**System Commissioning for E&M Equip at Temp. Filtrate Lifting Well and Eq. Tank**	**7 days**	**Fri 23/04/21**	**Thu 29/04/21**	**2 days**	**1081**	**1108FF**	
1083	**1083**	**5.31**	**Existing PST No. 4 and No. 6, Portion B-3A (PS 6B.2.15)**	**397 days**	**Sat 01/08/20**	**Wed 01/09/21**	**0 days**			
1084	1084	5.31.1	Planned Key Date Completion Date - KD3B	0 days	Mon 07/06/21	Mon 07/06/21	0 days	1143FF		
1085	1085	5.31.2	Planned Sectional Completion Date - Section 3, PST No. 4 and No. 6	0 days	Wed 01/09/21	Wed 01/09/21	0 days	1068FF,1169FF		
1086	**1086**	**5.31.3**	**Selection of Suppliers for major plant and materials and Subcontractor for PST No. 4 and N**	**137 days**	**Sat 01/08/20**	**Tue 15/12/20**	**76 days**			
1087	**1087**	**5.31.3.1**	**Mis - Rotating Bridge Scrapers and associated materials, C11, ref. EQT037-1**	**42 days**	**Sat 01/08/20**	**Fri 11/09/20**	**0 days**			
1088	1088	5.31.3.1.1	Submission for acceptance of purchasing package	7 days	Sat 01/08/20	Fri 07/08/20	0 days		1089	
1089	1089	5.31.3.1.2	Invitation of quotations for purchasing package	14 days	Sat 08/08/20	Fri 21/08/20	0 days	1088	1090	
1090	1090	5.31.3.1.3	Acceptance of conforming quotation (Completed)	21 days	Sat 22/08/20	Fri 11/09/20	0 days	1089	1100	
1091	**1091**	**5.31.3.2**	**Mis - Pipework, C11, ref. EQT037-2**	**42 days**	**Sat 01/08/20**	**Fri 11/09/20**	**0 days**			



ID	ID	WBS	Task Name	Duration between Task Start and Finish	Start	Finish	Float Time	Predecessors	Successors	Resource Names
1092	1092	5.31.3.2.1	Submission for acceptance of purchasing package	7 days	Sat 01/08/20	Fri 07/08/20	0 days		1093	
1093	1093	5.31.3.2.2	Invitation of quotations for purchasing package	14 days	Sat 08/08/20	Fri 21/08/20	0 days	1092	1094	
1094	1094	5.31.3.2.3	Acceptance of conforming quotation (Completed)	21 days	Sat 22/08/20	Fri 11/09/20	0 days	1093	1100	
1095	**1095**	**5.31.3.3**	**Subletting of Electrical and Mechanical Installation Work w/ supply of LCP**	**81 days**	**Sat 26/09/20**	**Tue 15/12/20**	**76 days**			
1096	1096	5.31.3.3.1	Submission for Subletting Package	30 days	Sat 26/09/20	Sun 25/10/20	0 days	1100	1097	
1097	1097	5.31.3.3.2	Invitation to tender	21 days	Mon 26/10/20	Sun 15/11/20	0 days	1096	1098	
1098	1098	5.31.3.3.3	Acceptance of conforming tender	30 days	Mon 16/11/20	Tue 15/12/20	39 days	1097	1115	
1099	**1099**	**5.31.4**	**Design Submissions**	**14 days**	**Sat 12/09/20**	**Fri 25/09/20**	**24 days**			
1100	1100	5.31.4.1	Design submissions for retrofitting the existing PST No. 4 and No. 6	14 days	Sat 12/09/20	Fri 25/09/20	0 days	1090,1094	1103,1106,1096	
1101	**1101**	**5.31.5**	**Manufacturing and Delivery of Plant & Materials**	**180 days**	**Sat 26/09/20**	**Wed 24/03/21**	**4 days**			
1102	**1102**	**5.31.5.1**	**Rotating Bridge Scrapers and associated materials**	**180 days**	**Sat 26/09/20**	**Wed 24/03/21**	**4 days**			
1103	1103	5.31.5.1.1	Manufacturing and Factory Acceptance Test of Plant	150 days	Sat 26/09/20	Mon 22/02/21	0 days	1100	1104	
1104	1104	5.31.5.1.2	Shipping and Delivery of Plant to site	30 days	Tue 23/02/21	Wed 24/03/21	0 days	1103	1121,1135	
1105	**1105**	**5.31.5.2**	**Pipework**	**120 days**	**Sat 26/09/20**	**Sat 23/01/21**	**37 days**			
1106	1106	5.31.5.2.1	Manufacturing and Factory Acceptance Test of Plant	90 days	Sat 26/09/20	Thu 24/12/20	0 days	1100	1107	
1107	1107	5.31.5.2.2	Shipping and Delivery of Plant to site	30 days	Fri 25/12/20	Sat 23/01/21	0 days	1106	1116	
1108	1108	5.31.6	Tentative Civil Handover, Filtrate Lifting Well and Eq. Tank (Completion of work)	1 day	Sat 01/05/21	Sat 01/05/21	0 days	1082FF,1073FF	1130,1132,1134	
1109	**1109**	**5.31.7**	**Site Installation Work**	**249 days**	**Thu 01/10/20**	**Sun 06/06/21**	**1 day**			
1110	**1110**	**5.31.7.1**	**Commencement of retrofitting the existing PST No. 4 and No. 6**	**249 days**	**Thu 01/10/20**	**Sun 06/06/21**	**1 day**			
1111	1111	5.31.7.1.1	Temporary flow diversion of Filtrate from PST No. 4,	1 day	Thu 01/10/20	Thu 01/10/20	0 days		1112	
1112	1112	5.31.7.1.2	Dismantle and Removal of E&M Equipment at PST No. 6	60 days	Fri 02/10/20	Mon 30/11/20	0 days	1111	1113	
1113	1113	5.31.7.1.3	Temporary flow diversion of Filtrate from PST No. 6	7 days	Tue 01/12/20	Mon 07/12/20	0 days	1112	1114	
1114	1114	5.31.7.1.4	Dismantle and Removal of E&M Equipment at PST No. 4	40 days	Tue 08/12/20	Sat 16/01/21	7 days	1113	1116	
1115	**1115**	**5.31.7.1.5**	**Mechanical Installations of existing PSTs No. 4**	**89 days**	**Sun 24/01/21**	**Thu 22/04/21**	**4 days**	**1098**		
1116	1116	5.31.7.1.5.1	Installation of PST influent feed pipe	5 days	Sun 24/01/21	Thu 28/01/21	0 days	1114,1107	1117	ME - A x 4~6 men
1117	1117	5.31.7.1.5.2	Installation of circular baffle diffuser box	5 days	Fri 29/01/21	Tue 02/02/21	0 days	1116	1118	ME - A x 4~6 men
1118	1118	5.31.7.1.5.3	Installation of scum baffle plates	5 days	Wed 03/02/21	Sun 07/02/21	0 days	1117	1119	ME - A x 4~6 men
1119	1119	5.31.7.1.5.4	Installation of scum box with collection valve and pipework	5 days	Mon 08/02/21	Fri 12/02/21	0 days	1118	1120	ME - A x 4~6 men
1120	1120	5.31.7.1.5.5	Installation of v-notched weir plate	7 days	Sat 13/02/21	Fri 19/02/21	33 days	1119	1121	ME - A x 4~6 men
1121	1121	5.31.7.1.5.6	Installation of center bearing and slip ring assembly for rotating bridge	5 days	Thu 25/03/21	Mon 29/03/21	0 days	1120,1104	1122	ME - A x 4~6 men
1122	1122	5.31.7.1.5.7	Installation of motor and gearbox assembly for rotating bridge	5 days	Tue 30/03/21	Sat 03/04/21	0 days	1121	1123	ME - A x 4~6 men
1123	1123	5.31.7.1.5.8	Installation of rotating bridge sludge and scum scraper assembly	5 days	Sun 04/04/21	Thu 08/04/21	0 days	1122	1124,1126	ME - A x 4~6 men
1124	1124	5.31.7.1.5.9	installation of removable FRP covers for effluent channel	14 days	Fri 09/04/21	Thu 22/04/21	0 days	1123	1128	ME - A x 4~6 men
1125	**1125**	**5.31.7.1.6**	**Electrical Installations of existing PSTs No. 4**	**10 days**	**Fri 09/04/21**	**Sun 18/04/21**	**4 days**		**1128**	
1126	1126	5.31.7.1.6.1	Installation of local control panels	5 days	Fri 09/04/21	Tue 13/04/21	0 days	1123	1127	
1127	1127	5.31.7.1.6.2	cable laying and terminations	5 days	Wed 14/04/21	Sun 18/04/21	4 days	1126	1128	
1128	**1128**	**5.31.7.1.7**	**Site Acceptance Test for E&M Equip at existing PST No. 4**	**5 days**	**Fri 23/04/21**	**Tue 27/04/21**	**4 days**	**1125,1124,1127**	**1143,1130**	
1129	**1129**	**5.31.7.1.8**	**Mechanical Installations of existing PSTs No. 6**	**32 days**	**Sun 02/05/21**	**Wed 02/06/21**	**0 days**			
1130	1130	5.31.7.1.8.1	Installation of PST influent feed pipe	2 days	Sun 02/05/21	Mon 03/05/21	0 days	1128,1108	1131	ME - A x 4~6 men
1131	1131	5.31.7.1.8.2	Installation of circular baffle diffuser box	2 days	Tue 04/05/21	Wed 05/05/21	0 days	1130		ME - A x 4~6 men
1132	1132	5.31.7.1.8.3	Installation of scum baffle plates	2 days	Sun 02/05/21	Mon 03/05/21	0 days	1108	1133	ME - A x 4~6 men
1133	1133	5.31.7.1.8.4	Installation of scum box with collection valve and pipework	2 days	Tue 04/05/21	Wed 05/05/21	0 days	1132		ME - A x 4~6 men
1134	1134	5.31.7.1.8.5	Installation of v-notched weir plate	10 days	Sun 02/05/21	Tue 11/05/21	0 days	1108	1135	ME - A x 4~6 men
1135	1135	5.31.7.1.8.6	Installation of center bearing and slip ring assembly for rotating bridge	3 days	Wed 12/05/21	Fri 14/05/21	0 days	1134,1104	1136	ME - A x 4~6 men
1136	1136	5.31.7.1.8.7	Installation of motor and gearbox assembly for rotating bridge	2 days	Sat 15/05/21	Sun 16/05/21	0 days	1135	1137,1140	ME - A x 4~6 men
1137	1137	5.31.7.1.8.8	Installation of rotating bridge sludge and scum scraper assembly	3 days	Mon 17/05/21	Wed 19/05/21	0 days	1136	1138	ME - A x 4~6 men
1138	1138	5.31.7.1.8.9	installation of removable FRP covers for effluent channel	14 days	Thu 20/05/21	Wed 02/06/21	0 days	1137	1142	ME - A x 4~6 men
1139	**1139**	**5.31.7.1.9**	**Electrical Installations of existing PSTs No. 6**	**7 days**	**Mon 17/05/21**	**Sun 23/05/21**	**10 days**		**1142**	
1140	1140	5.31.7.1.9.1	Installation of local control panels	5 days	Mon 17/05/21	Fri 21/05/21	0 days	1136	1141	
1141	1141	5.31.7.1.9.2	cable laying and terminations	2 days	Sat 22/05/21	Sun 23/05/21	10 days	1140	1142	
1142	**1142**	**5.31.7.1.10**	**Site Acceptance Test for E&M Equip at existing PST No. 6**	**1 day**	**Thu 03/06/21**	**Thu 03/06/21**	**0 days**	**1138,1139,1141**	**1143**	
1143	**1143**	**5.31.7.1.11**	**System Commissioning for E&M Equip at existing PST No. 4 and No. 6**	**3 days**	**Fri 04/06/21**	**Sun 06/06/21**	**1 day**	**1128,1142**	**1084FF**	
1144	**1144**	**5.32**	**Existing Main Power House Electrical, Portion B-7A and B-7B (PS 6B.3.17)**	**42 days**	**Thu 11/06/20**	**Wed 22/07/20**	**0 days**			
1145	1145	5.32.1	Planned Key Date Completion Date - KD3A	0 days	Wed 22/07/20	Wed 22/07/20	0 days			
1146	**1146**	**5.32.2**	**Design Submissions for Existing Emergency Generator House**	**15 days**	**Fri 12/06/20**	**Fri 26/06/20**	**0 days**			
1147	1147	5.32.2.1	Design submissions for E&M installation works of existing power house	15 days	Fri 12/06/20	Fri 26/06/20	0 days	179	1151	
1148	**1148**	**5.32.3**	**Site Installation Work**	**39 days**	**Thu 11/06/20**	**Sun 19/07/20**	**0 days**			



ID	ID	WBS	Task Name	Duration between Task Start and Finish	Start	Finish	Float Time	Predecessors	Successors	Resource Names
1149	1149	5.32.3.1	Tentative Civil Handover Date, Portion B-7A & 7B area for modification of existing emerge	1 day	Thu 11/06/20	Thu 11/06/20	0 days			
1150	**1150**	**5.32.3.2**	**Commencement of Modification of existing emergency generator Electrical Works**	**23 days**	**Sat 27/06/20**	**Sun 19/07/20**	**0 days**			
1151	1151	5.32.3.2.1	Site survey and preparation work	1 day	Sat 27/06/20	Sat 27/06/20	0 days	1147	1152	
1152	1152	5.32.3.2.2	Modification of existing emergency generator electrical works	3 days	Sun 28/06/20	Tue 30/06/20	0 days	1151	1153	
1153	1153	5.32.3.2.3	Test the new switchboard for on-site mobile generator	2 days	Wed 01/07/20	Thu 02/07/20	0 days	1152	1154	
1154	1154	5.32.3.2.4	Dismantling and removal the existing power & control cables	14 days	Fri 03/07/20	Thu 16/07/20	0 days	1153	1155	
1155	1155	5.32.3.2.5	Take down existing generator to DSD (Completed)	3 days	Fri 17/07/20	Sun 19/07/20	0 days	1154		
1156	**1156**	**5.33**	**Existing Sludge Press House, Portion B-10 (PS 6B.2.11)**	**425 days**	**Wed 01/07/20**	**Sun 29/08/21**	**3 days**			
1157	1157	5.33.1	Planned Key Date Completion Date - KD3B	0 days	Mon 07/06/21	Mon 07/06/21	0 days			
1158	**1158**	**5.33.2**	**Selection of Suppliers for major plant and materials for Filter Presses**	**52 days**	**Wed 01/07/20**	**Fri 21/08/20**	**0 days**			
1159	**1159**	**5.33.2.1**	**Mis - new replacement filter plates and provision of filter cloths, C11, ref. EQT038**	**52 days**	**Wed 01/07/20**	**Fri 21/08/20**	**0 days**			
1160	1160	5.33.2.1.1	Submission for acceptance of purchasing package	21 days	Wed 01/07/20	Tue 21/07/20	0 days		1161	
1161	1161	5.33.2.1.2	Invitation of quotations for purchasing package	10 days	Wed 22/07/20	Fri 31/07/20	0 days	1160	1162	
1162	1162	5.33.2.1.3	Acceptance of conforming quotation (Completed)	21 days	Sat 01/08/20	Fri 21/08/20	0 days	1161	1163	
1163	**1163**	**5.33.3**	**Design submission for replacement of filter plates**	**7 edays**	**Fri 21/08/20**	**Fri 28/08/20**	**0 edays**	**1162**	**1165**	
1164	**1164**	**5.33.4**	**Manufacturing and Delivery of Plant & Materials**	**345 days**	**Sat 29/08/20**	**Sun 08/08/21**	**3 days**			
1165	1165	5.33.4.1	Manufacturing and Factory Acceptance Test of Plant	300 days	Sat 29/08/20	Thu 24/06/21	0 days	1163	1166	
1166	1166	5.33.4.2	Shipping and Delivery of Plant to site	45 days	Fri 25/06/21	Sun 08/08/21	0 days	1165	1169	
1167	**1167**	**5.33.5**	**Site Installation Work**	**21 days**	**Mon 09/08/21**	**Sun 29/08/21**	**3 days**			
1168	**1168**	**5.33.5.1**	**Commencement of replacement of filter plates**	**21 days**	**Mon 09/08/21**	**Sun 29/08/21**	**3 days**			
1169	1169	5.33.5.1.1	Replacement of filter plates	21 days	Mon 09/08/21	Sun 29/08/21	3 days	1166	1085FF	
1170	**1170**	**5.34**	**Fire Services Installation (PS 6B.6.9)**	**1248 days**	**Tue 01/12/20**	**Wed 01/05/24**	**0 days**			
1171	1171	5.34.1	Planned Key Date Completion Date - KD1B, Fire	0 days	Tue 01/06/21	Tue 01/06/21	0 days	1175FF		
1172	1172	5.34.2	Planned Sectional Completion Date - Section 1, FSI	0 days	Mon 12/07/21	Mon 12/07/21	0 days	1176FF		
1173	1173	5.34.3	Planned Sectional Completion Date - Section 4, FSI	0 days	Wed 01/05/24	Wed 01/05/24	0 days	1191FF		
1174	**1174**	**5.34.4**	**Design Submissions for FSI**	**334 days**	**Tue 01/12/20**	**Sat 30/10/21**	**0 days**			
1175	1175	5.34.4.1	CDS081-11 - Civil and dimensional requirements drawings for Fire Services Sprinkler Pump	120 days	Tue 01/12/20	Tue 30/03/21	63 days		1171FF	
1176	1176	5.34.4.2	CDS049 - Detailed Design for Fire Services include AFA, FS, FH, Sprinkler etc.	180 edays	Mon 03/05/21	Sat 30/10/21	0 edays	154	1180,1177,1172FF	
1177	1177	5.34.5	DG Stores Submissions to FSD for approval	120 days	Sun 31/10/21	Sun 27/02/22	690 days	1176	1186FF	
1178	**1178**	**5.34.6**	**Site Installation Work**	**910 days**	**Sun 31/10/21**	**Sat 27/04/24**	**4 days**			
1179	**1179**	**5.34.6.1**	**Commencement of Fire Services Installation**	**910 days**	**Sun 31/10/21**	**Sat 27/04/24**	**4 days**			
1180	1180	5.34.6.1.1	Design Review of Approved General Building Plan	126 days	Sun 31/10/21	Sat 05/03/22	0 days	1176	1181	
1181	1181	5.34.6.1.2	Submission of WWO542 for WSD's approval	270 days	Sun 06/03/22	Wed 30/11/22	310 days	1180	1182	
1182	1182	5.34.6.1.3	Submission of WWO46 for WSD's Inspection	30 days	Sat 07/10/23	Sun 05/11/23	0 days	1181,353,482,593,	1183	
1183	1183	5.34.6.1.4	Obtain WWO46 Part V	60 days	Mon 06/11/23	Thu 04/01/24	0 days	1182	1186,1184	
1184	1184	5.34.6.1.5	FSD Inspection and Approval for MVAC	21 days	Fri 05/01/24	Thu 25/01/24	0 days	1194,1195,1183	1187	
1185	1185	5.34.6.1.6	FSD Inspection and Approval for DG Stores	21 days	Wed 06/12/23	Tue 26/12/23	30 days	1194,1195,816	1187	
1186	1186	5.34.6.1.7	Submission of (FSI/314 & FSI/501) to FSD	14 days	Fri 05/01/24	Thu 18/01/24	7 days	1194,1195,1183,11	1187	
1187	1187	5.34.6.1.8	Pre-inspection meeting with FSD	5 days	Fri 26/01/24	Tue 30/01/24	0 days	1186,1184,1185	1188	
1188	1188	5.34.6.1.9	Initial Inspection with FSD	15 days	Wed 31/01/24	Wed 14/02/24	0 days	1187	1189	
1189	1189	5.34.6.1.10	Document Checking	45 days	Thu 15/02/24	Sat 30/03/24	0 days	1188	1190	
1190	1190	5.34.6.1.11	Re-inspections with FSD	14 days	Sun 31/03/24	Sat 13/04/24	0 days	1189	1191	
1191	1191	5.34.6.1.12	Issue of acceptance memo by FSD	14 days	Sun 14/04/24	Sat 27/04/24	4 days	1190	1173FF	
1192	1192	5.34.6.1.13	Installation of FS Pumps and Sprinkler Pumps	60 days	Mon 03/04/23	Thu 01/06/23	127 days		1195	FS - A x 4~6 men
1193	1193	5.34.6.1.14	Installation of Fire Hydrant and Booster Pumps	60 days	Mon 03/04/23	Thu 01/06/23	127 days		1195	FS - A x 4~6 men
1194	1194	5.34.6.1.15	SAT for Manual and automatic fire detection and alarm system	60 days	Sat 07/10/23	Tue 05/12/23	0 days	353,482,593,768,8	1186,1184,1185	
1195	1195	5.34.6.1.16	SAT for Fire hydrants, hose reels and street fire hydrant system	60 days	Sat 07/10/23	Tue 05/12/23	0 days	1192,1193,353,482	1186,1184,1185	
1196	**1196**	**5.35**	**Fire Services Sprinkler Pumping Room, Portion B-7 & B-7B (PS 6B.6.9)**	**421 days**	**Thu 19/05/22**	**Thu 13/07/23**	**200 days**			
1197	**1197**	**5.35.1**	**Site Installation Work**	**421 days**	**Thu 19/05/22**	**Thu 13/07/23**	**200 days**			
1198	1198	5.35.1.1	Tentative Civil Handover Date, FS Sprinkler Pump Room (Rev. 5)	1 day	Thu 19/05/22	Thu 19/05/22	0 days		1199,1204	
1199	**1199**	**5.35.1.2**	**Commencement of E&M Installation at FS & Sprinkler Pump Room**	**420 days**	**Thu 19/05/22**	**Thu 13/07/23**	**200 days**	**1198**		
1200	1200	5.35.1.2.1	Mechanical Installations for FS & Sprinkler Pumps	90 edays	Thu 19/05/22	Wed 17/08/22	0 edays		1201	
1201	1201	5.35.1.2.2	Electrical Installations for FS & Sprinkler Pumps	90 edays	Wed 17/08/22	Tue 15/11/22	0.63 edays	1200	1202,1205,1206,12	
1202	1202	5.35.1.2.3	Site Acceptance Test for FS & Sprinkler Pumps	45 days	Wed 16/11/22	Fri 30/12/22	0 days	1201	1203	
1203	1203	5.35.1.2.4	System Commissioning for FS & Sprinkler Pumps	45 days	Sat 31/12/22	Mon 13/02/23	325 days	1202	1186	
1204	**1204**	**5.35.1.2.5**	**Building Services Installations at FS & Sprinkler Pump Room**	**240 days**	**Wed 16/11/22**	**Thu 13/07/23**	**200 days**	**1198**		
1205	1205	5.35.1.2.5.1	Lighting and Power Distribution System, Chem 1&2	120 days	Wed 16/11/22	Wed 15/03/23	0 days	1201	1208	



ID	ID	WBS	Task Name	Duration between Task Start and Finish	Start	Finish	Float Time	Predecessors	Successors	Resource Names
1206	1206	5.35.1.2.5.2	Lightning Protection System, FS & Sprinkler Pump Room	30 days	Wed 16/11/22	Thu 15/12/22	90 days	1201	1208	
1207	1207	5.35.1.2.5.3	Mechanical Ventilation System, FS & Sprinkler PR	14 days	Wed 16/11/22	Tue 29/11/22	106 days	1201	1208	
1208	1208	5.35.1.2.5.4	Testing and Commissioning of Building Services Installations, FS & Sprinkler PR	120 days	Thu 16/03/23	Thu 13/07/23	189 days	1205,1206,1207	1186FF	
1209	**1209**	**5.36**	**Fire Hydrant and Booster Pumping Room, Portion B7 & B-7B (PS 6B.6.9)**	**465 days**	**Thu 19/05/22**	**Sat 26/08/23**	**156 days**			
1210	**1210**	**5.36.1**	**Site Installation Work**	**465 days**	**Thu 19/05/22**	**Sat 26/08/23**	**156 days**			
1211	1211	5.36.1.1	Tentative Civil Handover Date, Fire Hydrant and Booster Pumping Room (Rev. 5)	1 day	Thu 19/05/22	Thu 19/05/22	0 days		856FF+50 days,1213	
1212	**1212**	**5.36.1.2**	**Commencement of E&M Installation at Street FH Pump Room**	**464 days**	**Thu 19/05/22**	**Sat 26/08/23**	**156 days**			
1213	1213	5.36.1.2.1	Mechanical Installations for Street FH Pumps	90 edays	Thu 19/05/22	Wed 17/08/22	0 edays	1211	1214	
1214	1214	5.36.1.2.2	Electrical Installations for Street FH Pump	90 edays	Wed 17/08/22	Tue 15/11/22	0.63 edays	1213	1215,1218	
1215	1215	5.36.1.2.3	Site Acceptance Test for Street FH Pump	45 days	Wed 16/11/22	Fri 30/12/22	0 days	1214	1216	
1216	1216	5.36.1.2.4	System Commissioning for Street FH Pumps	45 days	Sat 31/12/22	Mon 13/02/23	339 days	1215	1186FF	
1217	**1217**	**5.36.1.2.5**	**Building Services Installations at Street FH Pump Room**	**284 days**	**Wed 16/11/22**	**Sat 26/08/23**	**156 days**			
1218	1218	5.36.1.2.5.1	Lighting and Power Distribution System, Street FH PR	120 days	Wed 16/11/22	Wed 15/03/23	0 days	1214	1221,1219	
1219	1219	5.36.1.2.5.2	Lightning Protection System, Street FH PR	30 days	Thu 16/03/23	Fri 14/04/23	0 days	1218	1220,1221	
1220	1220	5.36.1.2.5.3	Mechanical Ventilation System, Street FH PR	14 days	Sat 15/04/23	Fri 28/04/23	0 days	1219	1221	MVAC - A x 4~6 men
1221	1221	5.36.1.2.5.4	Testing and Commissioning of Building Services Installations, FH PR	120 days	Sat 29/04/23	Sat 26/08/23	145 days	1218,1219,1220	1186FF	
1222	**1222**	**5.37**	**Plumbing Installation (PS 6B.6.8)**	**1049 days**	**Tue 16/02/21**	**Tue 02/01/24**	**0 days**			
1223	1223	5.37.1	Planned Sectional Completion Date - Section 1, Plumbing	0 days	Thu 01/07/21	Thu 01/07/21	0 days	1225FF		
1224	**1224**	**5.37.2**	**Design Submissions for Plumbing**	**134 days**	**Tue 16/02/21**	**Wed 30/06/21**	**1 day**			
1225	1225	5.37.2.1	CDS033 - Detailed Design for Plumbing System	134 edays	Tue 16/02/21	Wed 30/06/21	0.63 edays	149	1228,1223FF	
1226	**1226**	**5.37.3**	**Site Installation Work**	**915 days**	**Thu 01/07/21**	**Tue 02/01/24**	**0 days**			
1227	**1227**	**5.37.3.1**	**Commencement of Plumbing Installation**	**915 days**	**Thu 01/07/21**	**Tue 02/01/24**	**0 days**			
1228	1228	5.37.3.1.1	Submission of detail design for acceptance	90 days	Thu 01/07/21	Tue 28/09/21	0 days	1225	1229	Pb - A x 4~6 men
1229	1229	5.37.3.1.2	Submission of WWO542 for WSD's approval	355 days	Wed 29/09/21	Sun 18/09/22	118 days	1228	351,480,591,766	Pb - B x 4~6 men
1230	1230	5.37.3.1.3	Connection of External Pumping System (By others)	0 days	Fri 15/09/23	Fri 15/09/23	17 days		1231	
1231	1231	5.37.3.1.4	Submission of WWO46 for WSD's Inspection	45 days	Mon 02/10/23	Wed 15/11/23	0 days	1230,351,480,591,	1232	
1232	1232	5.37.3.1.5	Obtain WWO46 Part V	45 days	Thu 16/11/23	Sat 30/12/23	2 days	1231	1233	
1233	1233	5.37.3.1.6	Tentative Date for connection of external water pipework (by others)	0 days	Tue 02/01/24	Tue 02/01/24	0 days	1232		
1234	**1234**	**5.38**	**Photovoltaic Power System (PS 6B.6.11)**	**1128 days**	**Mon 01/03/21**	**Mon 01/04/24**	**0 days**			
1235	1235	5.38.1	Planned Sectional Completion Date - Section 1, BR 2A & 2B	0 days	Mon 12/07/21	Mon 12/07/21	0 days	1245FF		
1236	1236	5.38.2	Planned Sectional Completion Date - Section 2, BR 2A & 2B	0 days	Mon 01/04/24	Mon 01/04/24	0 days	1253FF		
1237	**1237**	**5.38.3**	**Selection of Suppliers for major plant and materials for BR 2A & 2B**	**73 days**	**Mon 01/03/21**	**Wed 12/05/21**	**12 days**			
1238	**1238**	**5.38.3.1**	**PV System (EQT041)**	**73 days**	**Mon 01/03/21**	**Wed 12/05/21**	**12 days**			
1239	1239	5.38.3.1.1	Submission for acceptance of purchasing package	30 days	Mon 01/03/21	Tue 30/03/21	0 days		1240	
1240	1240	5.38.3.1.2	Invitation of quotations for purchasing package	21 days	Wed 31/03/21	Tue 20/04/21	0 days	1239	1241	
1241	1241	5.38.3.1.3	Acceptance of conforming quotation	21 days	Wed 21/04/21	Tue 11/05/21	0 days	1240	1242	
1242	1242	5.38.3.1.4	Commencement of Design Work	1 day	Wed 12/05/21	Wed 12/05/21	0 days	1241	1244	
1243	**1243**	**5.38.4**	**Design Submissions**	**49 days**	**Wed 12/05/21**	**Wed 30/06/21**	**12 days**			
1244	1244	5.38.4.1	CDS060 - Detailed Design for PV System	45 edays	Wed 12/05/21	Sat 26/06/21	0.63 edays	1242	1245	
1245	1245	5.38.4.2	Complete the CLP's Electronic Application Form and Upload Required Documents	4 days	Sun 27/06/21	Wed 30/06/21	0 days	1244	1235FF,1247	
1246	**1246**	**5.38.5**	**Material ordering and delivery to site**	**767 days**	**Thu 01/07/21**	**Sun 06/08/23**	**59 days**			
1247	1247	5.38.5.1	Manufacturing and Factory Acceptance Test of Plant	150 days	Thu 01/07/21	Sat 27/11/21	572 days	1245	1248	
1248	1248	5.38.5.2	Shipping and Delivery of Plant to site	45 days	Fri 23/06/23	Sun 06/08/23	0 days	1247,1250SS+120	1251	
1249	**1249**	**5.38.6**	**Site Installation Work**	**345 days**	**Thu 23/02/23**	**Fri 02/02/24**	**0 days**			
1250	1250	5.38.6.1	Tentative Civil Handover Date, Portion B-4, BR2A & 2B (Rev. 5)	1 day	Thu 23/02/23	Thu 23/02/23	0 days		1248SS+120 edays	
1251	1251	5.38.6.2	Commencement of Site Installation Work	90 days	Mon 07/08/23	Sat 04/11/23	0 days	1248	1252	PV - A x 4~6 men
1252	1252	5.38.6.3	Technical Assessment, System Test and Installation	60 days	Sun 05/11/23	Wed 03/01/24	0 days	1251	1253	PV - A x 4~6 men
1253	1253	5.38.6.4	CLP's smart meter installation and Final on-grid test with CLP	30 days	Thu 04/01/24	Fri 02/02/24	59 days	1252	1236FF	
1254	1254	5.39	Plant Commissioning	240 days	Tue 12/09/23	Wed 08/05/24	0 days		39FF	
1255	1255	5.39.1	Planned Sectional Completion Date - Section 4, Plant Commissioning	0 days	Wed 01/05/24	Wed 01/05/24	0 days			
1256	**1256**	**5.39.2**	**Design Submission for Treatment Process Plant Testing & Commissioning**	**90 days**	**Wed 01/11/23**	**Mon 29/01/24**	**105 days**			
1257	1257	5.39.2.1	Document Submission and Resubmission for T&C procedures	90 days	Wed 01/11/23	Mon 29/01/24	105 days	1258FF-120 days		
1258	1258	5.39.3	System Commissioning Tests of the E&M systems at IW, PST, BR 2A&2B, MFB No. 2, Chemica	7 days	Thu 08/02/24	Wed 14/02/24	0 days	919,965,985,347,4	1259,1257FF-120 da	
1259	1259	5.39.4	MBR System Process Startup	35 days	Thu 15/02/24	Wed 20/03/24	0 days	1258	1260	
1260	1260	5.39.5	Plant Commissioning	35 days	Thu 21/03/24	Wed 24/04/24	0 days	1259	1263	
1261	1261	5.39.6	Overall commissioning of CCTV system	30 days	Tue 12/09/23	Wed 11/10/23	196 days	352,481,592,767	1263	
1262	1262	5.39.7	Overall commissioning of Facility Computerized Systems (SCADA, CMMS, PMS, IDMS)	28 days	Mon 11/12/23	Sun 07/01/24	108 days	344,473,758,759	1263	

ID	ID	WBS	Task Name	Duration between Task Start and Finish	Start	Finish	Float Time	Predecessors	Successors	Resource Names
1263	1263	5.39.8	Overall Plant Commissioning and DSD pre-handover inspections	14 days	Thu 25/04/24	Wed 08/05/24	5 days	1260,1261,1262		
1264	**1264**	**5.40**	**CE No. 009 - Provision of an Additional Primary Sludge Thickening System**	**140 days**	**Tue 14/07/20**	**Mon 30/11/20**	**0 days**			
1265	1265	5.40.1	Detail Design Submission and Approval	77 days	Tue 14/07/20	Mon 28/09/20	18 days		1267	
1266	1266	5.40.2	Subletting, Procurement, Manufacturing and Delivery	120 days	Fri 31/07/20	Fri 27/11/20	0 days			
1267	1267	5.40.3	Site Installation	40 days	Sat 17/10/20	Wed 25/11/20	0 days	1265	1268	
1268	1268	5.40.4	Testing and Commissioning	5 days	Thu 26/11/20	Mon 30/11/20	0 days	1267	1269FF	
1269	1269	5.40.5	Planned Completion Date	1 day	Mon 30/11/20	Mon 30/11/20	0 days	1268FF		
1270	**1270**	**6**	**Beam Plus Submissions**	**1450 days**	**Fri 01/05/20**	**Fri 19/04/24**	**0 days**			
1271	1271	6.1	SA10 - Environmental Management Plan	1450 days	Fri 01/05/20	Fri 19/04/24	19 days		39	
1272	1272	6.2	SA11 - Air Pollution During Construction	1450 days	Fri 01/05/20	Fri 19/04/24	19 days		39	
1273	1273	6.3	SA12 - Noise During Construction	1450 days	Fri 01/05/20	Fri 19/04/24	19 days		39	
1274	1274	6.4	SA14 - Noise from Building Equipment	1450 days	Fri 01/05/20	Fri 19/04/24	19 days		39	
1275	1275	6.5	SA15 - Light Pollution	1450 days	Fri 01/05/20	Fri 19/04/24	19 days		39	
1276	1276	6.6	MAP1 - Timber used for Temporary Works	1450 days	Fri 01/05/20	Fri 19/04/24	19 days		39	
1277	1277	6.7	MAP2 - Use of Non-CFC Based Refrigerants	1450 days	Fri 01/05/20	Fri 19/04/24	19 days		39	
1278	1278	6.8	MAP3 - Waste Management Plan	1450 days	Fri 01/05/20	Fri 19/04/24	19 days		39	
1279	1279	6.9	MA2 - Modular and Standardized Design	1450 days	Fri 01/05/20	Fri 19/04/24	19 days		39	
1280	1280	6.10	MA8 - Ozone Depleting Substances	1450 days	Fri 01/05/20	Fri 19/04/24	19 days		39	
1281	1281	6.11	MA11 - Construction Waste Reduction	1450 days	Fri 01/05/20	Fri 19/04/24	19 days		39	
1282	1282	6.12	EUP1 - Minimum Energy Performance	1450 days	Fri 01/05/20	Fri 19/04/24	19 days		39	
1283	1283	6.13	EU1 - Reduction of CO2 Emissions	1450 days	Fri 01/05/20	Fri 19/04/24	19 days		39	
1284	1284	6.14	EU2 - Peak Electricity Demand Reduction	1450 days	Fri 01/05/20	Fri 19/04/24	19 days		39	
1285	1285	6.15	EU6 - Renewable Energy Systems	1450 days	Fri 01/05/20	Fri 19/04/24	19 days		39	
1286	1286	6.16	EU9 - Energy Efficient Appliances	1450 days	Fri 01/05/20	Fri 19/04/24	19 days		39	
1287	1287	6.17	EU10 - Testing and Commissioning	1450 days	Fri 01/05/20	Fri 19/04/24	19 days		39	
1288	1288	6.18	EU11 - Operation and Maintenance	1450 days	Fri 01/05/20	Fri 19/04/24	19 days		39	
1289	1289	6.19	EU12 - Meter and Monitoring	1450 days	Fri 01/05/20	Fri 19/04/24	19 days		39	
1290	1290	6.20	WUP1 - Water Quality Survey	1450 days	Fri 01/05/20	Fri 19/04/24	19 days		39	
1291	1291	6.21	WUP2 - Minimum Water Saving Performance	1450 days	Fri 01/05/20	Fri 19/04/24	19 days		39	
1292	1292	6.22	WU1 / WU6 - Annual Water Use / Effluent Discharge to Foul Sewers	1450 days	Fri 01/05/20	Fri 19/04/24	19 days		39	
1293	1293	6.23	IEQP1 - Minimum Ventilation Performance	1450 days	Fri 01/05/20	Fri 19/04/24	19 days		39	
1294	1294	6.24	IEQ1 - Security	1450 days	Fri 01/05/20	Fri 19/04/24	19 days		39	
1295	1295	6.25	IEQ2 - Plumbing and Drainage	1450 days	Fri 01/05/20	Fri 19/04/24	19 days		39	
1296	1296	6.26	IEQ3 - Biological Contamination	1450 days	Fri 01/05/20	Fri 19/04/24	19 days		39	
1297	1297	6.27	IEQ5 - Construction IAQ Management	1450 days	Fri 01/05/20	Fri 19/04/24	19 days		39	
1298	1298	6.28	IEQ6 / IEQ7 - IAQ	1450 days	Fri 01/05/20	Fri 19/04/24	19 days		39	
1299	1299	6.29	IEQ9 - Increased Ventilation	1450 days	Fri 01/05/20	Fri 19/04/24	19 days		39	
1300	1300	6.30	IEQ11 - Localised Ventilation	1450 days	Fri 01/05/20	Fri 19/04/24	19 days		39	
1301	1301	6.31	IEQ12 - Ventilation in Common Areas	1450 days	Fri 01/05/20	Fri 19/04/24	19 days		39	
1302	1302	6.32	IEQ13 - Thermal Comfort in Air - Conditioned Premises	1450 days	Fri 01/05/20	Fri 19/04/24	19 days		39	
1303	1303	6.33	IEQ16 / IEQ17 - Interior Lighting in Normally Occupied Area / Interior Lighting in Areas not Norr	1450 days	Fri 01/05/20	Fri 19/04/24	19 days		39	
1304	**1304**	**7**	**Summary of compensation events notified**	**126 days?**	**Wed 22/04/20**	**Tue 25/08/20**	**0 days?**			
1305	1305	7.1	Compensation Event (CE) No. 001, Special Arrangement in Reducing the Risk of the Spread of Novel Cor	1 day	Tue 25/08/20	Tue 25/08/20	0 days			
1306	1306	7.2	Compensation Event (CE) No. 002, the Contractor's Site Accommodation by Modular Integrated Constru	1 day	Mon 08/06/20	Mon 08/06/20	0 days			
1307	1307	7.3	Compensation Event (CE) No. 003, Designated Area for the Contractor's Site Accommodation in Works /	1 day	Wed 22/04/20	Wed 22/04/20	0 days			
1308	1308	7.4	Compensation Event (CE) No. 005, Designated Area for the Contractor's Storage Area in Works Area WA	1 day	Wed 22/04/20	Wed 22/04/20	0 days			
1309	1309	7.5	Compensation Event (CE) No. 007, Employment of Temporary Staff under Anti-Epidemic Fund	1 day	Fri 10/07/20	Fri 10/07/20	0 days			
1310	1310	7.6	Compensation Event (CE) No. 009, Provision of an Additional Primary Sludge Thickening System and Del	1 day	Tue 14/07/20	Tue 14/07/20	0 days			
1311	1311	7.7	Compensation Event (CE) No. 011, Dismantling, relocating, disconnecting and re-installing of the existin	1 day?	Fri 17/07/20	Fri 17/07/20	0 days?