Quarterly EM&A Summary Report (July 2022 - September 2022)

0120/20/ED/0530 02

Contract No. SPW 07/2020 Environmental Team for Construction of Yuen Long Effluent Polishing Plant Stage 1

MOTT MACDONALD

AECOM Asia Co. Ltd.
12/F, Grand Central Plaza, Tower 2
138 Shatin Rural Committee Road
Shatin, Hong Kong

Attn: Mr. Simon H.M. YEUNG – CRE(C)

Your Reference

Our Reference
AFK/EC/TC/BW/bw/
T601100019/02/02/L016

Mott MacDonald
3/F Manulife Tower
348 Kwun Tong Road
Kwun Tong
Kowloon
Hong Kong

T +852 2828 5757
F +852 2827 1823
mottmac.hk

Contract No. SPW 03/2022

Independent Environmental Checker for Construction of Yuen Long Effluent Polishing Plant Stage 1 (2022-2023)

Environmental Permit No. EP-565/2019

EP Condition 3.5 – Quarterly EM&A Summary Report for July 2022 to September 2022

26 October 2022
By Hand and By Email

Dear Sir,

I refer to the captioned Quarterly EM&A Summary Report for July 2022 to September 2022 (Document No. 0120/20/ED/0530, Issue No. 02) which was certified by the Environmental Team Leader and received via e-mail on 26 October 2022.

I have no comment on the captioned report and hereby verify that this submission has complied with the requirements set out in the EM&A Manual for the captioned project, in accordance with Condition 3.5 of Environmental Permit No. EP-565/2019.

Should you have any queries regarding the captioned or require any further information, please contact the undersigned at 2828 5875.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED

Brandon WONG
Independent Environmental Checker
T +852 2828 5875
Brandon.Wong@mottmac.com

c.c.	DSD	Mr. Wallace CHENG – E/SP 16	By Email
	Fugro Technical Services Limited	Mr. YU Lap Bong – ETL	By Email

Document Control

Document Information

Project Title	Contract No. SPW 07/2020 Environmental Team for Construction of Yuen Long Effluent Polishing Plant Stage 1
Document Title	Quarterly EM&A Summary Report (July 2022 - September 2022)
Fugro Project No.	0120/20
Fugro Document No.	0120/20/ED/0530
Issue Number	02

Client Information

Client	Drainage Services Department
Client Address	45/F, Revenue Tower, 5 Gloucester Road, Wan Chai, Hong Kong
Client Contact	Mr. Wallace Cheng

Environmental Team

Initials	Name	Role	Signature
LB	**Alvin L.B. Yu**	**Environmental Team Leader**	
CY	**Cyrus C.Y. Lai**	**Senior Environmental Consultant**	
KH	**Toby K.H. Wan**	**Environmental Consultant**	

EXECUTIVE SUMMARY

i. This Quarterly Environmental Monitoring and Audit (EM&A) Summary Report is prepared for Contract No. SPW 07/2020 "Environmental Team for Construction of Yuen Long Effluent Polishing Plant Stage 1". Drainage Services Department (DSD) has appointed Fugro Technical Services Limited (FTS) to undertake the Environmental Team services for the project and implement the EM&A works.

ii. This is the 6th Quarterly EM&A Summary Report for the Contract which summaries findings of the EM&A programme during the reporting period from 1 July 2022 to 30 September 2022. As informed by the Contractor, major activities in the reporting period were shown in section 1.4.1.

iii. The EM&A methodology has been effective in monitoring the environmental impacts of the Project and the effectiveness of the mitigation measures. The data collected were useful in determining whether the Project had caused unacceptable impacts on the sensitive receivers. Analysis of all EM&A data collected throughout the baseline and the impact periods demonstrated the environmental acceptability of the Project.

Breaches of Environmental Quality Performance Limits (AL levels)

iv. No Action and Limit Level exceedance was recorded for air quality monitoring and construction noise monitoring in the reporting period.

v. One Action Level exceedance was recorded for water quality in the reporting period. It was found that this exceedance was not project-related.

vi. No Action / Limit Level exceedance was recorded for noise levels at stations (NMS1 and NMS2) in close proximity to the active ardeid night roosts during the reporting period.

vii. No Action / Limit Level exceedance was recorded for the ecological monitoring of birds during the reporting period.

viii. No corrective actions were required according to the Event and Action Plans for the Monitoring Parameters.

Land Contamination

ix. Regular site inspection was carried out to ensure the recommended mitigation measures are properly implemented. The signed final Contamination Assessment Report (CAR) for "Main Storeroom & Workshops", "Mechanical Workshop", "Waste Storage Area" and "SAS Thickener House-1" were submitted to EPD respectively on 1st November 2021, 23rd November 2021, 29th April 2022 and 6th July 2022. No contaminated soil and ground water was found within the Main Storeroom & Workshop, Mechanical Workshop, Waste Storage Area and SAS Thickener House-1 and no remedial action is required for both locations.

Complaint Log

x. No complaints were received in the reporting period.

Notifications of Summons and Successful Prosecutions

xi. No notifications of summons and successful prosecutions were received in the reporting period.

Reporting Change

xii. There were no reporting changes during the reporting period.

Contents

Tables

Figures

Appendices

1. INTRODUCTION

1.1 Background

1.1.1 The existing Yuen Long Sewage Treatment Works (YLSTW) is a secondary sewage treatment works, located at Yuen Long Industrial Estate serves Yuen Long Town, Yuen Long Industrial Estate and Kam Tin areas with a design capacity of 70,000 m^3 per day. Based on the latest planning data, the volume of sewage generation from the YLSTW catchment is estimated to increase to 150,000 m^3 per day after 20 years. In addition, since YLSTW has been operating for over 30 years and most of its facilities are of out-dated design and reaching the end of their design life, the environmental facilities of the plant will also be upgraded and hence improving the adjacent environment through upgrading the YLSTW to Yuen Long Effluent Polishing Plant (YLEPP). The Location of Proposed Yuen Long Effluent Polishing Plant is given in **Figure 1**.

1.1.2 YLSTW will be reconstructed in two stages to increase its capacity to 150,000 m^3 per day. The proposed works, as Stage 1 of the project, will firstly increase the treatment capacity to 100,000 m^3 per day. In the course of Stage 1 construction, about half of the existing facilities of YLSTW would be demolished, while the other half would be kept in operation to maintain the sewage treatment service for Yuen Long area. This 72-month works contract commenced on 9 November 2020. Demolition of existing YLSTW for construction of new treatment facilities are in progress.

1.1.3 The Project is a designated project under Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO) (Cap. 499) for which Environmental Impact Assessment (EIA) report and Environmental Monitoring and Audit (EM&A) Manual was approved by EPD (Register No.: AEIAR-220/2019) on 25 April 2019. The Environmental Permit (EP) (EP No. EP-565/2019) to construct and operate was issued by EPD on 26 April 2019.

1.1.4 Fugro Technical Services Limited (FTS) has been appointed as the Environmental Team (ET) by Drainage Services Department (DSD) to undertake the Environmental Team services for the Project and implement the EM&A works under the Contract No. DC/2019/10 Yuen Long Effluent Polishing Plant -Main Works for Stage 1 (hereinafter referred as "the Contract").

1.1.5 This is the 6th Quarterly EM&A Summary Report to document the findings of site inspection activities and EM&A programme for this project from 1 July 2022 to 30 September 2022 (reporting period) and is submitted to fulfil Condition 3.5 of the EP and Section 12.4.5 of the EM&A Manual. According to Condition 4 of the EP, electronic reporting is provided on the internet website to facilitate public inspection of the report.

1.2 Project Organization

1.2.1 The Project Organization structure is shown in **Appendix B**. The key personnel contact names and numbers are summarized in **Table 1.1**.

Table 1.1 – Contact Information of Key Personnel

Party	Position	Name	Telephone
Project Proponent (Drainage Services Department)	Engineer	Mr. Wallace Cheng	2594 7473
Engineer's Representative (AECOM Asia Co. Ltd.)	Chief Resident Engineer	Mr. Simon Yeung	9075 7172
	Senior Resident Engineer	Mr. Patrick Leung	6124 8838
Independent Environmental Checker (Ramboll Hong Kong Limited)	Independent Environmental Checker (IEC) until 7 July 2022	Mr. F.N. Wong	2531 0247
Independent Environmental Checker (Mott MacDonald Hong Kong Limited)	Independent Environmental Checker (IEC) From 8 July 2022	Mr. Brandon Wong	2828 5875
Contractor (Paul Y. - CREC Joint Venture)	Environmental Officer From 11 July 2022	Ms. Diana Lee	5490 5271
	Assistant Environmental Officer	Mr. Sam Tsang	4634 2581
Environmental Team (Fugro Technical Services Limited)	Environmental Team Leader (ETL)	Mr. Alvin Yu	3565 4373

1.3 Construction Programme and Activities

1.3.1 The construction programme of this project is shown in **Appendix A**.

1.4 Works Undertaken During the Period

1.4.1 The main construction works carried out in the reporting period were summarized in **Table 1.2**:

Table 1.2 – Main Construction Works Carried out in the Reporting Period

July 2022	August 2022	September 2022
• Piling work at PST; • Piling work at STB ; • ELS works at IW & PST; • Zone 3 Diversion works: a. Temp. Gravity thickening tank – Pipe laying and E&M installation work; b. Temp. Sludge Holding Tank – Pipe laying and E&M installation work; c. Temp. Water heater house – Pipe laying and E&M installation work; d. Temp. Primary Sludge Pumping Station – RC work; e. Temp. Digested sludge pump / Supernatant Pumping – RC Work; f. Digested Sludge Pumping Station house – Pipe laying and E&M installation work; g. Pipe laying for Zone 3 diversion; • Demolition of Sludge Holding Tank no. 1; • Backfilling work at Sludge Holding Tank no. 3 & 4; • Superstructure works at CLP substation; • Installation of MIC unit at MIC office; • Backfill work at A. Tank 6-8; • Construction of RC chamber at Zone 2B; • Disposal of Pond Sediment excavated from PST; and • Disposal of construction waste as indicated in **Appendix F**.	• Piling work at PST; • Piling work at STB; • ELS works at IW & PST; • Zone 3 Diversion works: a. Temp. Gravity thickening tank – Pipe laying and E&M installation work; b. Temp. Sludge Holding Tank – Pipe laying and E&M installation work; c. Temp. Water heater house – Pipe laying and E&M installation work; d. Temp. Primary Sludge Pumping Station – RC work; e. Temp. Digested sludge pump / Supernatant Pumping – RC Work; f. Digested Sludge Pumping Station house – Pipe laying and E&M installation work; g. Pipe laying for Zone 3 diversion; • Demolition of Sludge Holding Tank no. 1; • Installation of 813mm pipe pile at south of AGS; • Backfilling work at Sludge Holding Tank no. 1 & 3; • Superstructure works at CLP substation; • Installation of MIC unit at MIC office; • Backfill work at A. Tank 6-8; • Construction of RC chamber at Zone 2B; • Disposal of Pond Sediment excavated from PST-Zone E; and • Disposal of construction waste as indicated in **Appendix F**.	• Piling work at STB; • ELS works and RC structure works at IW & PST; • Zone 3 Diversion works: a. Temp. Gravity thickening tank – Pipe laying and E&M installation work; b. Temp. Sludge Holding Tank – Pipe laying and E&M installation work; c. Temp. Water heater house – Pipe laying and E&M installation work; d. Temp. Primary Sludge Pumping Station – Pipe laying and E&M installation work; e. Temp. Digested sludge pump / Supernatant Pumping – Pipe laying and E&M installation work; f. Digested Sludge Pumping Station house – Pipe laying and E&M installation work; • Installation of sheet piles at DS; • Installation of 813mm pipe pile at south of AGS; • Backfilling work at Sludge Holding Tank no. 1 & 3; • Superstructure works at CLP substation; • Installation of MIC unit at MIC office; • Backfill work at A. Tank 5-8; • E&M installation work for at Zone 2B chamber; • Pipe laying for Zone 2B; and • Disposal of construction waste as indicated in **Appendix F**.

1.4.2 The environmental mitigation measures corresponding to the main construction works implemented in the reporting period can be referred to **Appendix G**.

2. SUMMARY OF EM&A REQUIREMENTS AND MONITORING RESULTS

2.1 Monitoring Requirement

2.1.1 The EM&A programme was undertaken in accordance with the EM&A Manual. It should be noted that the air quality, noise, water quality and ecology monitoring works are covered by this contract.

Air quality Monitoring

2.1.2 1-hour Total Suspended Particulates (TSP) levels should be measured at the designated air quality monitoring stations to ensure that any deteriorating air quality could be readily detected and timely action shall be undertaken to rectify such situation. Impact 1-hour TSP monitoring was conducted for at least three times every 6 days when the highest dust impact occurs.

Noise Monitoring

2.1.3 Leq (30min) monitoring is conducted at least once a week when there are Project-related construction activities being undertaken within a radius of 300 m from the monitoring stations. The monitoring is conducted during the construction phase between 0700 and 1900 on normal weekdays at the designated monitoring locations.

Water quality Monitoring

2.1.4 Turbidity (in NTU), pH, DO (in mg/L and % of saturation), Temperature (in $^{\circ}$C), Salinity (in ppt) and Suspended Solids are conducted for three days per week at mid-flood and mid-ebb with sampling and measurement at the designated monitoring stations.

Ecology Monitoring

2.1.5 Ardeid night roost monitoring was conducted once a month in areas within 100 m from the Project boundary to monitor the effectiveness of proposed mitigation measures and detect any unpredicted indirect ecological impacts arising from the Project.

2.1.6 Ecological monitoring of birds was conducted monthly during the quarter at point count sites and transect routes along the wetland habitats in Fung Lok Wai and Nam Sang Wai as well as along Shan Pui River and Kam Tin River within 500 m from the Project boundary.

2.2 Monitoring Locations

2.2.1 The air quality and noise monitoring are summarized in **Table 2.1**. The locations of the air quality and noise monitoring stations shown in **Figure 2** and **Figure 3**, respectively.

Table 2.1 – Air Quality and Noise Monitoring Location

Environmental Monitoring	Monitoring Station	Location
Air Quality	AM1	Topfine Machinery (China) Co. Ltd
	AM2	Squatter house at the west of Yuen Long STW
Noise	CM1	Squatter house at the north of Yuen Long STW
	CM2	Squatter house at the west of Yuen Long STW
	CM3	Squatter house at the east of Yuen Long STW

2.2.2 The coordinates of water quality monitoring locations are summarized in **Table 2.2**. The locations of the water quality monitoring stations shown in **Figure 4**.

Table 2.2 – Coordinates of Water Quality Monitoring Locations

Sampling Location		Easting	Northing
M1	Serve as the control station at upstream location of construction site (Flood Tide) / Serve as the impact station at downstream location of construction site (Ebb Tide)	821 086	836 656
M2	Serve as the impact station at downstream location of construction site (Flood Tide)/ Serve as the control station at upstream location of construction site (Ebb Tide)	820 996	836 246
M3	Serve as the impact station at downstream location of construction site (Flood Tide) / Serve as the control station at upstream location of construction site (Ebb Tide)	820 645	836 335

2.3 Results and Observations

2.3.1 Graphical presentation of the environmental monitoring data in the reporting period is presented in **Appendix D**.

Air quality Monitoring

2.3.2 1-hour TSP impact monitoring at AM1 and AM2 were carried out in the reporting period, the air quality monitoring results are reported in the monthly EM&A Report prepared for this Contract.

2.3.3 No Action and Limit Level exceedance was recorded for air quality monitoring in the reporting period.

Noise Monitoring

2.3.4 Construction noise monitoring were carried out in the reporting period, the construction noise monitoring results for CM1, CM2 and CM3 are reported in the monthly EM&A Reports prepared for this Contract.

2.3.5 No Action and Limit Level exceedance was recorded for construction noise monitoring in the reporting period.

2.3.6 No raining and wind with speed over 5 m/s was observed during noise monitoring according to the onsite observation.

2.3.7 During the noise monitoring period, at CM2, road traffic from the squatter house at the west of Yuen Long STW was observed, at CM3, road traffic from the Nam Sang Wai Road was observed. No effect that arose from the other special phenomena and work progress of the concerned site for CM1 was noted during the current monitoring period.

Water quality Monitoring

2.3.8 Water quality monitoring were carried out in the reporting period (Typhoon Signal No. 8 was hoisted on 2 July 2022, Typhoon Signal No. 3 was hoisted on 9 August 2022, and Typhoon Signal No. 8 was hoisted on 25 August 2022. Due to safety concerns, the water quality monitoring on 2 July 2022 [Mid-Flood and Mid-Ebb], 9 August 2022 [Mid-Flood] and 25 August [Mid-Flood and Mid-Ebb] has been cancelled), the monitoring results for M1, M2 and M3 are reported in the monthly EM&A Reports prepared for this Contract.

2.3.9 During the reporting period, One Action Level exceedance for Suspended Solids was recorded. No Limit Level exceedance was recorded for Suspended Solids. No Action and Limit Level exceedance was recorded for Dissolved Oxygen and Turbidity. Number of water quality exceedance recorded in the reporting period at each impact stations is summarized in **Table 2.3**.

Table 2.3 – Summary of Water Quality Exceedance

Sampling Location	Exceedance Level	DO		Turbidity		Suspended Solids		Total	
		Flood	Ebb	Flood	Ebb	Flood	Ebb	Flood	Ebb
M1	Action	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0
M2	Action	0	0	0	0	1	0	1	0
	Limit	0	0	0	0	0	0	0	0
M3	Action	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0
Total	Action	0	0	0	0	1	0	1	
	Limit	0	0	0	0	0	0	0	

Ecology Monitoring

2.3.10 Ardeid night roost monitoring and ecological bird monitoring were carried out in the reporting period. The monitoring results are reported in the monthly EM&A Reports prepared for this Contract.

2.3.11 Results of the ardeid night roost monitoring showed that the two confirmed ardeid night roosts (ANR 1 and ANR 2) during the pre-construction survey were still observed to be active from July 2022 to September 2022. No Action / Limit Level exceedance at NMS1 and NMS2 was recorded during the reporting period.

2.3.12 Results of the ecological bird monitoring recorded no exceedance in Action / Limit Level during the reporting period.

2.4 Action and Limit Levels

2.4.1 The Action and Limit Levels for air quality, noise, water quality and ecology monitoring have been set and are presented in **Appendix C**.

2.5 Event and Action Plans

2.5.1 The event and action plans for air quality, noise, water quality and ecology monitoring are presented in **Appendix E**.

2.6 Mitigation Measures

2.6.1 The Contractor had implemented environmental mitigation measures and requirements as stated in the EIA Report, the EP and EM&A Manual. The implementation status of the environmental mitigation measures during the reporting period is summarized in **Appendix G**.

3. LANDSCAPE AND VISUAL

3.1 Audit Requirements

3.1.1 According to the EM&A Manual, a Landscape Architect or related professional shall be employed to audit the implementation of landscape construction works particularly during site clearance operations when the proposed tree felling and transplanting will take place and subsequent maintenance operations. Site audits should be undertaken every week during the construction phase to check that the proposed landscape and visual mitigation measures are properly implemented and maintained as per their intended objectives. The mitigation measure recommended in the EIA Report as the audit requirements for landscape and visual, including: preservation of existing vegetation, transplanting of affected trees, compensatory tree planning, control of night-time lighting glare, erection of decorative screen hoarding and management of construction activities and facilities are summarized in **Appendix G**.

3.2 Results and Observations

3.2.1 According to the EM&A Manual, site audits should be undertaken every week during the construction phase to check that the proposed landscape and visual mitigation measures are properly implemented and maintained as per their intended objectives.

3.2.2 To monitor and audit the implementation of landscape and visual mitigation measures, 13 weekly landscape and visual site audits were carried out in the reporting period. No outstanding issues were reported during the reporting period. Observations and recommendations during site audits are summarized in **Table 5.1**.

4. LAND CONTAMINATION

4.1 Contamination Assessment Report

4.1.1 Risk-Based Remediation Goals (RBRGs) for Industrial have been adopted for the "Main Storeroom & Workshops" and the laboratory results for the sampling works (conducted between 30 June 2021 to 16 July 2021) show that there are no exceedances of the adopted RBRGs for the "Main Storeroom & Workshops". As no contaminated soil and groundwater was found within the "Main Storeroom & Workshops", no remediation actions are required for contaminated soil and groundwater for the scheduled land use of the "Main Storeroom & Workshops". Their findings are summarized in Contamination Assessment Report (CAR) and submitted to EPD on 1 November 2021.

4.1.2 Risk-Based Remediation Goals (RBRGs) for Industrial have been adopted for the "Mechanical Workshop" and the laboratory results for the sampling works (conducted between 23 July 2021 to 4 August 2021) show that there are no exceedances of the adopted RBRGs for the "Mechanical Workshop". As no contaminated soil and groundwater was found within the "Mechanical Workshop", no remediation actions are required for contaminated soil and groundwater for the scheduled land use of the "Mechanical Workshop". Their findings are summarized in Contamination Assessment Report (CAR) and submitted to EPD on 23 November 2021.

4.1.3 Risk-Based Remediation Goals (RBRGs) for Industrial have been adopted for the "Waste Storage Area" and the laboratory results for the sampling works (conducted between 24 November 2021 to 26 January 2022) show that there are no exceedances of the adopted RBRGs for the "Waste Storage Area". As no contaminated soil and groundwater was found within the "Waste Storage Area", no remediation actions are required for contaminated soil and groundwater for the scheduled land use of the "Waste Storage Area". Their findings are summarized in Contamination Assessment Report (CAR) and submitted to EPD on 29 April 2022.

4.1.4 Risk-Based Remediation Goals (RBRGs) for Industrial have been adopted for the "SAS Thickener House-1" and the laboratory results for the sampling works (conducted between 13 April 2022 to 16 May 2022) show that there are no exceedances of the adopted RBRGs for the "SAS Thickener House-1". As no contaminated soil and groundwater was found within the "SAS Thickener House-1", no remediation actions are required for contaminated soil and groundwater for the scheduled land use of the "SAS Thickener House-1". Their findings are summarized in Contamination Assessment Report (CAR) and submitted to EPD on 6 July 2022.

5. SITE INSPECTION AND AUDIT

5.1 Site Inspection

5.1.1 Site audits were carried out by ET at least once per week to monitor the implementation of proper environmental management practices and mitigation measures in the Project site.

5.1.2 In the reporting period, 13 site inspections were carried out. No outstanding issues were reported during the reporting period. Details of observations recorded during the site inspections are presented in **Table 5.1.**

Table 5.1 – Observations and Recommendations of Site Audit

Parameters	Date	Observations and Recommendations	Follow-up
Air Quality	21 Sep 2022	Reminder 1: The Contractor is reminded to increase watering for dust suppression at haul roads (Portion 1 - YLSTW).	NA
	28 Sep 2022	Reminder 1: The Contractor is reminded to increase watering for dust suppression during the demolition of S.A.S. Thickener House (Portion 1 - YLSTW).	NA
Noise	6 Jul 2022	Reminder 1: The Contractor is reminded to properly maintain the function of the noise barriers and silentup at the northern and western site boundary (Portion 1 - YLSTW).	NA
	12 Jul 2022	Reminder 1: The Contractor is reminded to properly maintain the function of the noise barriers and silentup at the northern and western site boundary (Portion 1 - YLSTW).	NA
	9 Aug 2022	Reminder 1: The Contractor is reminded to maintain and reinstate the silentup at western and northern site boundary (Portion 1 - YLSTW).	NA
Water Quality	12 Jul 2022	Reminder 1: The Contractor is reminded to provide sand bags to prevent silty runoff into the storm drains (Portion 1 - YLSTW).	NA
	31 Aug 2022	Reminder 1: The Contractor is reminded to provide sandbags to prevent runoff into storm drain near piling area (Portion 1 - YLSTW).	NA
Chemical and Waste Management	17 Aug 2022	Observation 1: Clean up the oil stain on road with chemical absorbent pad and treat it as chemical waste for disposal (Portion 1 - YLSTW).	18 Aug 2022
	13 Sep 2022	Reminder 1: The Contractor is reminded to clean up the oil stain on road with chemical absorbent	NA

Parameters	Date	Observations and Recommendations	Follow-up
		pad and treat it as chemical waste for disposal (Portion 1 - YLSTW).	
Land Contamination	NA		
Ecological Impact	12 Jul 2022	Reminder 1: The Contractor is reminded to maintain and reinstate the bird curtains at the eastern and northern site boundary (Portion 1 - YLSTW).	NA
	20 Jul 2022	Reminder 1: The Contractor is reminded to maintain and reinstate the bird curtains at the eastern and northern site boundary (Portion 1 - YLSTW).	NA
	27 Jul 2022	Recommendation 1: Please keep Tree Protection Zone clear of construction material (Portion 1 - YLSTW).	NA
	9 Aug 2022	Recommendation 1: Stockpile to be removed from tree protection zone beside the temporary admin office (MIC) (Portion 1 - YLSTW).	NA
Landscape and Visual Impact	17 Aug 2022	Observation 1: Please keep tree protection zone free of construction material beside the temporary admin office (MIC) (Portion 1 - YLSTW).	26 Aug 2022
		Recommendation 1: *Ficus microcarpa* at eastern / northern edge of site are observed with "朱紅毛斑蛾", please liaise with relevant maintenance parties for pest control (Portion 1 - YLSTW).	NA
	24 Aug 2022	Observation 1: Please keep tree protection zone clear of construction material outside MIC area (Portion 1 - YLSTW).	26 Aug 2022
Permit / Licenses	NA		
Others	NA		

5.2 Advice on the Solid and Liquid Waste Management Status

5.2.1 The Contractor registered as a chemical waste producer for the Contract. Sufficient numbers of receptacles were available for general refuse collection and sorting.

5.2.2 The management of waste generated by the construction is presented in **Table 5.2**.

Table 5.2 – Waste Generated by the Construction and Disposal Ground

Types of Waste	Disposal Ground
Inert C&D Waste (Excluding slurry and bentonite)	Tuen Mun Area 38
Inert C&D Waste (For slurry and bentonite)	Tseung Kwan O Area 137
Non-inert C&D Materials	North East New Territories Landfill (NENT)
Sludge	West New Territories Landfill (WENT)
Marine Sediment	Type 1 – Open Sea Disposal: South Cheung Chau Open Sea Sediment Disposal Area Type 1 – Open Sea Disposal (Dedicate Site) and Type 2 – Confined Marine Disposal: Contaminated Mud Pit Vb of the Confined Marine Disposal Facilities to the East of Sha Chau

5.2.3 The amount of wastes generated by the site activities in the reporting period is shown in **Appendix F**.

5.2.4 If off-site disposal is required, the excavated marine mud from the land-based works shall be disposed of at the designated disposal sites within Hong Kong as allocated by the Marine Fill Committee or other locations as agreed by the Director. The Contractor shall ensure no spilling and overflowing of materials during loading / unloading / transportation is allowed.

5.2.5 The Contractor was reminded that chemical waste should be properly handled and temporarily store in designated chemical waste storage area on site in accordance with the Code of Practice on the Packing, Labelling and Storage of Chemical Waste.

6. NON-COMPLIANCE, COMPLAINTS, NOTIFICATIONS OF SUMMONS AND SUCCESSFUL PROSECUTIONS

6.1 Non-compliance (Exceedances of AL levels)

6.1.1 No Action and Limit Level exceedance was recorded for air quality monitoring and construction noise monitoring in the reporting period.

6.1.2 One Action Level exceedance was recorded for water quality in the reporting period. It was found that this exceedance was not project-related.

6.1.3 No Action / Limit exceedance was recorded for noise levels at stations (NMS1 and NMS2) in close proximity to the active ardeid night roosts in the reporting period.

6.1.4 No Action / Limit exceedance was noted for the ecological monitoring of birds during the reporting period.

6.1.5 No corrective actions were required according to the Even-Action Plans.

6.2 Complaints, Notification of Summons and Successful Prosecutions

6.2.1 No environmental complaints, notification of summons and successful prosecutions were received in the reporting period.

6.2.2 Cumulative complaint log, summaries of complaints, notification of summons and successful prosecutions are presented in **Appendix H**.

6.2.3 No corrective actions were required.

7. IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURE

7.1 Implementation Status of Environmental Protection and Pollution Control / Mitigation Measures

The Contractor had implemented environmental protection and pollution control / mitigation measures as stated in the EIA Report, the EP and EM&A Manual. The implementation status of the recommended mitigation measures during the reporting period is summarized in **Appendix G.**

The status of required submissions under the EP as of the reporting period are summarized in **Table 7.1**.

Table 7.1 – Status of submissions required under the EP

EP Condition (EP-565/2019)	Submission Title	Submission Status
Condition 2.9	Construction Phase Emergency Response Plan	Submitted to EPD with ET certification and IEC verification, to be finalised and made available for public inspection via the dedicated website.
Condition 2.11	Pre-construction Ardeid Night Roost Survey Report	Submitted to EPD with ET certification and IEC verification, finalised and available for public inspection via the dedicated website.
EM&A Manual Sec. 7.3.3 & 7.3.4	Baseline Bird Survey Report	Submitted to EPD with ET certification and IEC verification, finalised and available for public inspection via the dedicated website.
Condition 2.12	Noise Mitigation Measures Plan	Submitted to EPD with ET certification and IEC verification, to be finalised and made available for public inspection via the dedicated website.
Condition 2.13	Proposal for Minimization of Overspill Light to Ecological Sensitive Areas	Submitted to EPD with ET certification and IEC verification, finalised and available for public inspection via the dedicated website.
Condition 2.14	Supplementary Contamination Assessment Plan	Submitted to EPD with ET certification and IEC verification, finalised and available for public inspection via the dedicated website.
Condition 2.14	Contamination Assessment Report for Main Storeroom & Workshops	Submitted to EPD with ET certification and IEC verification, finalised and available for public inspection via the dedicated website.
Condition 2.14	Contamination Assessment Report for Mechanical Workshop	Submitted to EPD with ET certification and IEC verification, finalised and available for public inspection via the dedicated website.
Condition 2.14	Contamination Assessment Report for Waste Storage Area	Submitted to EPD with ET certification and IEC verification, finalised and available for public inspection via the dedicated website.
Condition 2.14	Contamination Assessment Report for SAS Thickener House-1	Submitted to EPD with ET certification and IEC verification, finalised and available for public inspection via the dedicated website.

EP Condition (EP-565/2019)	Submission Title	Submission Status
Condition 2.15	Landscape and Visual Mitigation Plan	Submitted to EPD with ET certification and IEC verification, to be finalised and made available for public inspection via the dedicated website.
Condition 3.3	Baseline Monitoring Report	Submitted to EPD with ET certification and IEC verification, finalised and available for public inspection via the dedicated website.
Condition 3.4	Monthly EM&A Report (from April 2021 to September 2022)	Submitted to EPD with ET certification and IEC verification, finalised and available for public inspection via the dedicated website.
Condition 3.5	Quarterly EM&A Report (from April 2021 to June 2022)	Submitted to EPD with ET certification and IEC verification, finalised and available for public inspection via the dedicated website.
Condition 4.2	Environmental Monitoring Data from April 2021 to September 2022	Submitted to EPD with ET certification and IEC verification, finalised and available for public inspection via the dedicated website.

8. CONCLUSION AND RECOMMENDATION

8.1 Conclusions

8.1.1 No Action and Limit Level exceedance was recorded for air quality monitoring and construction noise monitoring in the reporting period.

8.1.2 One Action Level exceedance was recorded for water quality in the reporting period. It was found that this exceedance was not project-related.

8.1.3 No Action / Limit exceedance was recorded for noise levels at stations (NMS1 and NMS2) in close proximity to the active ardeid night roosts in the monitoring period.

8.1.4 No Action / Limit exceedance was noted for the ecological monitoring of birds during the reporting period.

8.1.5 13 environmental site inspections and 13 landscape and visual site audits were carried out in the reporting period. Recommendations on mitigation measures were given to the Contractor for remediating the deficiencies identified during the site inspections.

8.1.6 No environmental complaints, notification of summons and successful prosecutions were recorded in the reporting period.

8.1.7 The EM&A methodology has been effective in monitoring the environmental impacts of the Project and the effectiveness of the mitigation measures. The data collected were useful in determining whether the Project had caused unacceptable impacts on the sensitive receivers. Analysis of all EM&A data collected throughout the baseline and the impact monitoring periods demonstrated the environmental acceptability of the Project.

8.2 Comment and Recommendations

8.2.1 The recommended environmental mitigation measures, as proposed in the EIA report and EM&A Manual shall be effectively implemented to minimize the potential environmental impacts from the Project. The EM&A programme would effectively monitor the environmental impacts generated from the construction activities and ensure the proper implementation of mitigation measures.

8.2.2 According to the environmental site inspections performed in the reporting period, the following recommendations were provided:

Air Quality Impact

- The Contractor is reminded to increase watering for dust suppression at haul roads.
- The Contractor is reminded to increase watering for dust suppression during the demolition of S.A.S. Thickener House.

Construction Noise Impact

- The Contractor shall properly maintain the function of the noise barriers and silentup at the northern and western site boundary.
- The Contractor is reminded to maintain and reinstate the silentup at western and northern site boundary.

Water Quality Impact

- The Contractor shall provide sand bags to prevent silty runoff into the storm drains.
- The Contractor is reminded to provide sandbags to prevent runoff into storm drain near piling area.

Chemical Waste and Construction Waste Management

- Clean up the oil stain on road with chemical absorbent pad and treat it as chemical waste for disposal.

Land Contamination

- No specific observation was identified in the reporting period.

Ecological Impact

- The Contractor shall maintain and reinstate the bird curtains at the eastern and northern site boundary.

Landscape and Visual Impact

- Please keep Tree Protection Zone clear of construction material.
- Stockpile to be removed from tree protection zone beside the temporary admin office (MIC).
- Please keep tree protection zone free of construction material beside the temporary admin office (MIC).
- *Ficus microcarpa* at eastern / northern edge of site are observed with "朱紅毛斑蛾", please liaise with relevant maintenance parties for pest control.
- Please keep tree protection zone clear of construction material outside MIC area.

Hazard to Life

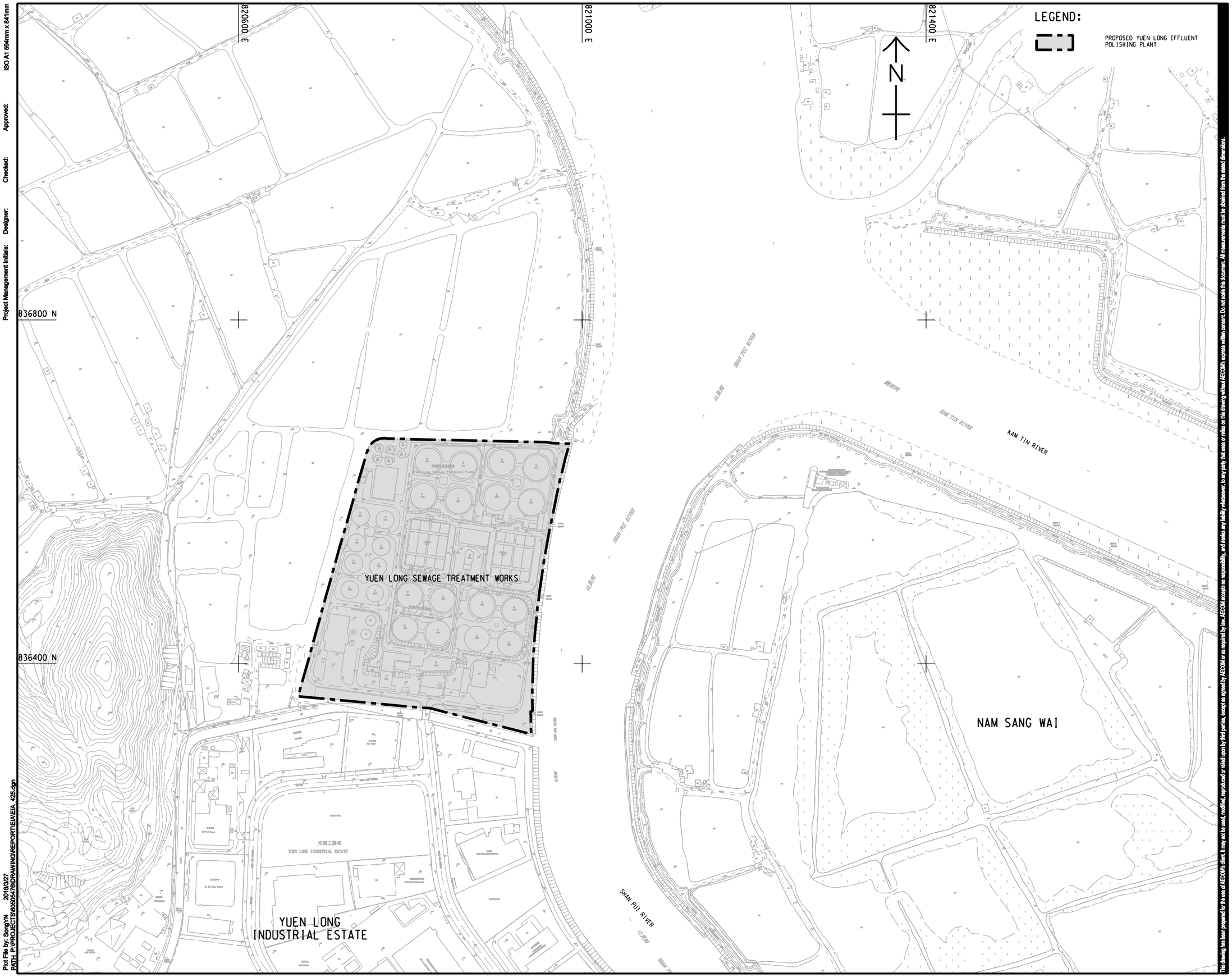
- No specific observation was identified in the reporting period.

Permit/ Licenses

- No specific observation was identified in the reporting period.

Figure 1

Location of Proposed Yuen Long Effluent Polishing Plant



Project Management Initials: Designer: Checked: Approved: ISO A1 594mm x 841mm

Plot File by: SongYN 2016/3/27
PATH: P:\PROJECTS\60505476\DRAWING\REPORT\EIA\EIA_425.dgn

AECOM

PROJECT 項目

YUEN LONG EFFLUENT POLISHING PLANT - INVESTIGATION, DESIGN AND CONSTRUCTION

CLIENT 業主

渠務署
Drainage Services Department

CONSULTANT 工程顧問公司

AECOM Asia Company Ltd.
www.aecom.com

SUB-CONSULTANTS 分判工程顧問公司

ISSUE/REVISION 修訂

I/R 修訂	DATE 日期	DESCRIPTION 內容摘要	CHK. 核核

STATUS 階段

SCALE 比例
A1 1 : 2000

DIMENSION UNIT 尺寸單位
METRES

KEY PLAN 索引圖

PROJECT NO. 項目編號
60505476

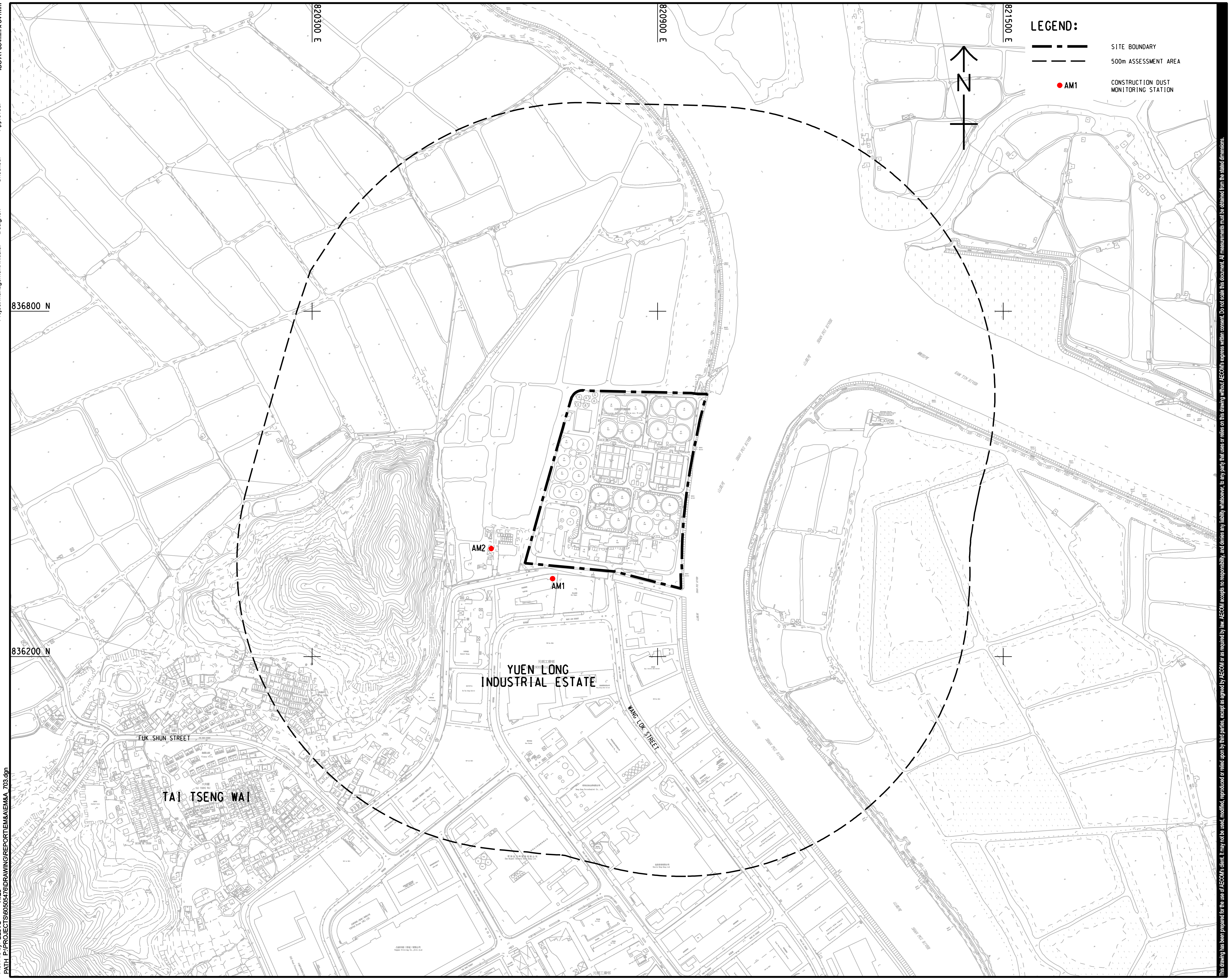
CONTRACT NO. 合約編號
CE 3/2015 (DS)

SHEET TITLE 圖紙名稱
LOCATION OF PROPOSED YUEN LONG EFFLUENT POLISHING PLANT

SHEET NUMBER 圖紙編號

Figure 2

Location of Construction Dust Monitoring Stations



AECOM

PROJECT
項目

YUEN LONG EFFLUENT POLISHING PLANT - INVESTIGATION, DESIGN AND CONSTRUCTION

CLIENT
業主

渠務署
Drainage Services Department

CONSULTANT
工程顧問公司

AECOM Asia Company Ltd.
www.aecom.com

SUB-CONSULTANTS
分判工程顧問公司

ISSUE/REVISION
修訂

I/R 修訂	DATE 日期	DESCRIPTION 內容摘要	CHK. 複核

STATUS
階段

SCALE
比例

A1 1 : 3000

DIMENSION UNIT
尺寸單位

METRES

KEY PLAN
索引圖

PROJECT NO.
項目編號

60505476

CONTRACT NO.
合約編號

CE 3/2015 (DS)

SHEET TITLE
圖紙名稱

LOCATION OF CONSTRUCTION DUST MONITOING STATIONS

SHEET NUMBER
圖紙編號

ISO A1 594mm x 841mm
Approved:
Checked:
Designer:
Project Management Initials:

Plot File by: GaoYU 11/29
PATH P:\PROJECTS\60505476\DRAWING\REPORT\EM&A\EM&A_703.dgn

Figure 3

Noise Monitoring Locations

ISO A1 594mm x 841mm

Approved:

Checked:

Designer:

Project Management Initials:

820500 E

820900 E

821300 E

836700 N

836300 N

CM1

CM2

CM3

LEGEND:

SITE BOUNDARY

300m ASSESSMENT AREA

NOISE MONITORING POINT

N

SHAN PUI RIVER

山貝河

KAM TIN RIVER

錦田河

元朗污水處理廠

Yuen Long Sewage Treatment Works

元朗工業邨

YUEN LONG INDUSTRIAL ESTATE

YUEN LONG
INDUSTRIAL ESTATE

WANG LOK STREET

WANG LEE STREET

Plot File by: ZENGFX 2019/2/26
PATH: P:\Projects\60505476\DRAWING\SKETCH\SK7003.dgn

AECOM

PROJECT
項目

YUEN LONG EFFLUENT POLISHING PLANT - INVESTIGATION, DESIGN AND CONSTRUCTION

CLIENT
業主

渠務署
Drainage Services Department

CONSULTANT
工程顧問公司

AECOM Asia Company Ltd.
www.aecom.com

SUB-CONSULTANTS
分判工程顧問公司

ISSUE/REVISION
發行

I/R 發行	DATE 日期	DESCRIPTION 內容摘要	CHK. 核核

STATUS
狀況

SCALE 比例
A1 1 : 2000

DIMENSION UNIT 尺寸單位
METRES

KEY PLAN
索引圖

PROJECT NO. 項目編號
60505476

CONTRACT NO. 合約編號
CE 3/2015 (DS)

SHEET TITLE
圖紙名稱

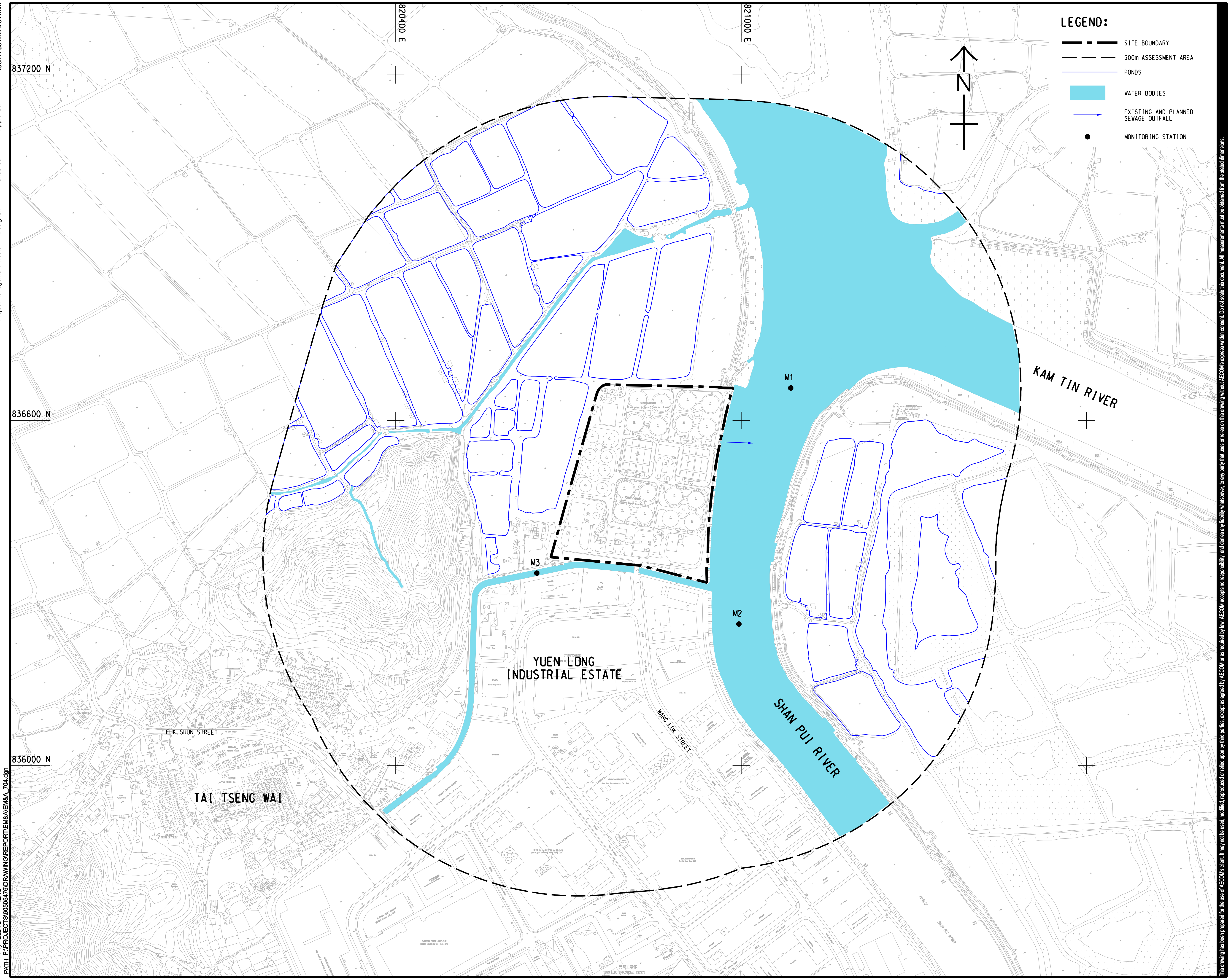
LOCATIONS OF NOISE MONITORING POINTS

SHEET NUMBER
圖紙編號

Figure 4

Water Quality Monitoring Locations

Project Management Initials: Designer: Checked: Approved: ISO A1 594mm x 841mm



Plot File by: GaoYU 12/18
PATH P:\PROJECTS\60505476\DRAWING\REPORT\EM&A\EM&A_704.dgn

AECOM

PROJECT
項目

YUEN LONG EFFLUENT POLISHING PLANT - INVESTIGATION, DESIGN AND CONSTRUCTION

CLIENT
業主

渠 務 署
Drainage Services Department

CONSULTANT
工程顧問公司

AECOM Asia Company Ltd.
www.aecom.com

SUB-CONSULTANTS
分判工程顧問公司

ISSUE/REVISION
修訂

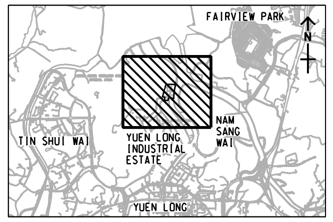
I/R 修訂	DATE 日期	DESCRIPTION 內容摘要	CHK. 複核

STATUS
階段

SCALE
比例
A3 1 : 6000

DIMENSION UNIT
尺寸單位
METRES

KEY PLAN A3 1 : 180000
索引圖



PROJECT NO.
項目編號
60505476

CONTRACT NO.
合約編號
CE 3/2015 (DS)

SHEET TITLE
圖紙名稱

LOCATIONS OF WATER QUALITY MONITORING STATIONS FOR CONSTRUCTION PHASE

SHEET NUMBER
圖紙編號

Figure 5

Ecology Monitoring Locations

ISO A1 594mm x 841mm

Approved:

Checked:

Designer:

Project Management Initials:

820300 E

820900 E

821500 E

836800 N

836200 N

LEGEND:

- SITE BOUNDARY
- 500m ASSESSMENT AREA
- SURVEY TRANSECTS
- POINT COUNT LOCATIONS FOR AVIFAUNA SURVEY

N

FLW1
FLW2
FLW3
FLW4
FLW5
FLW6
FLW7
SP/NSW1
SP/NSW2
SP/NSW3
NSW1

FUNG LOK WAI
TAI SANG WAI
NAM SANG WAI
YUEN LONG SEWAGE TREATMENT WORKS
YUEN LONG INDUSTRIAL ESTATE
NG UK TSUEN
LEON COURT
TAI TSENG WAI
FUK SHUN STREET
WANG LOK STREET
SHAN PUI RIVER
KAM TIN RIVER

Plot File by: ZENGFX 2018/8/30
PATH: P:\PROJECTS\60505476\DRAWING\REPORT\EM&A\EM&A_702.dgn

AECOM

PROJECT
項目
YUEN LONG EFFLUENT POLISHING PLANT - INVESTIGATION, DESIGN AND CONSTRUCTION

CLIENT
業主
渠務署
Drainage Services Department

CONSULTANT
工程顧問公司
AECOM Asia Company Ltd.
www.aecom.com

SUB-CONSULTANTS
分判工程顧問公司

ISSUE/REVISION
修訂

I/R 修訂	DATE 日期	DESCRIPTION 內容摘要	CHK. 核查

STATUS
狀況

SCALE
比例
A1 1 : 3000

DIMENSION UNIT
尺寸單位
METRES

KEY PLAN
索引圖

PROJECT NO.
項目編號
60505476

CONTRACT NO.
合約編號
CE 3/2015 (DS)

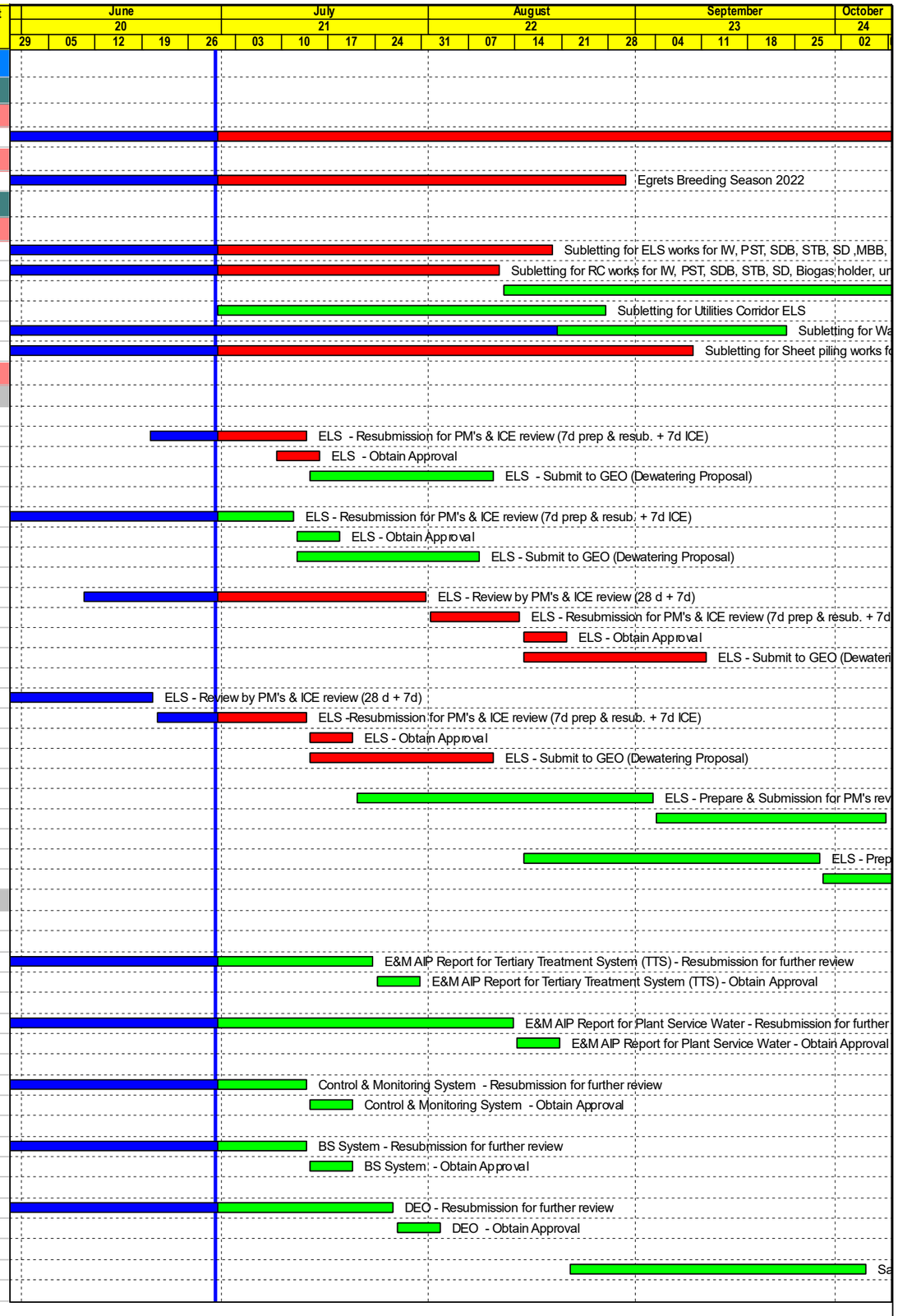
SHEET TITLE
圖紙名稱
ECOLOGICAL MONITORING LOCATIONS

SHEET NUMBER
圖紙編號

Appendix A

Construction Programme

Activity ID	Activity Name	Orig Dur	Early Start	Early Finish	Total Float
YL Effluent Polishing Plant - Main Works Stage 1 - Detailed Works Programme DPv15					
Contract Data Part 1					
Access Dates					
ADWA2	Work Area WA2 (sd) (new site possession) validity for 12 months and subject to renewal	757	05-Mar-21 A	31-Mar-23*	0
Environmental Constraints					
EBS-2155	Egrets Breeding Season 2022	183	01-Mar-22 A	30-Aug-22*	0
Preliminary and Preparation Works					
Subletting					
SUB-270	Subletting for ELS works for IW, PST, SDB, STB, SD ,MBB, TTB, underpass and open cut for admin. bldg	312	12-Oct-21 A	19-Aug-22	-108
SUB-280	Subletting for RC works for IW, PST, SDB, STB, SD, Biogas holder, underpass and admin. bldg	256	29-Nov-21 A	11-Aug-22	-66
SUB-290	Subletting for ABWF works for IW, PST, SDB, STB, MBR, TTB and admin. bldg	60	12-Aug-22	10-Oct-22	4
SUB-310	Subletting for Utilities Corridor ELS	59	30-Jun-22	27-Aug-22	93
SUB-350	Subletting for Waterproofing membrane and protection board	299	29-Nov-21 A	23-Sep-22	51
SUB-380	Subletting for Sheet piling works for remaining areas	333	12-Oct-21 A	09-Sep-22	-31
Design Submission					
Temporary Works Design					
Mainstream Bio-Reactor System					
TWD-240	ELS - Resubmission for PM's & ICE review (7d prep & resub. + 7d ICE)	14	20-Jun-22 A	13-Jul-22	-37
TWD-250	ELS - Obtain Approval	7	09-Jul-22	15-Jul-22	-37
TWD-520	ELS - Submit to GEO (Dewatering Proposal)	28	14-Jul-22	10-Aug-22	36
Sludge Thickening Building					
TWD-200	ELS - Resubmission for PM's & ICE review (7d prep & resub. + 7d ICE)	14	26-May-22 A	11-Jul-22	22
TWD-210	ELS - Obtain Approval	7	12-Jul-22	18-Jul-22	22
TWD-540	ELS - Submit to GEO (Dewatering Proposal)	28	12-Jul-22	08-Aug-22	49
Tertiary Treatment System					
TWD-150	ELS - Review by PM's & ICE review (28 d + 7d)	35	10-Jun-22 A	31-Jul-22	-73
TWD-160	ELS - Resubmission for PM's & ICE review (7d prep & resub. + 7d ICE)	14	01-Aug-22	14-Aug-22	-73
TWD-170	ELS - Obtain Approval	7	15-Aug-22	21-Aug-22	-73
TWD-550	ELS - Submit to GEO (Dewatering Proposal)	28	15-Aug-22	11-Sep-22	-60
Sludge Digester 1-3 & Utilities Corridor					
TWD-350	ELS - Review by PM's & ICE review (28 d + 7d)	35	03-May-22 A	20-Jun-22 A	
TWD-360	ELS -Resubmission for PM's & ICE review (7d prep & resub. + 7d ICE)	14	21-Jun-22 A	13-Jul-22	-138
TWD-370	ELS - Obtain Approval	7	14-Jul-22	20-Jul-22	-134
TWD-560	ELS - Submit to GEO (Dewatering Proposal)	28	14-Jul-22	10-Aug-22	-138
Sludge Digester 4-6					
TWD-460	ELS - Prepare & Submission for PM's review	45	21-Jul-22	03-Sep-22	856
TWD-470	ELS - Review by PM's & ICE review (28 d + 7d)	35	04-Sep-22	08-Oct-22	856
Sludge Dewatering and Underpass					
TWD-260	ELS - Prepare & Submission for PM's review	45	15-Aug-22	28-Sep-22	557
TWD-270	ELS - Review by PM's & ICE review (28 d + 7d)	35	29-Sep-22	02-Nov-22	557
Contractor 's Permanent Works Design (include ATAL)					
AIP					
Package 2A - Tertiary Treatment System (TTS)					
AIP-480	E&M AIP Report for Tertiary Treatment System (TTS) - Resubmission for further review	45	10-Mar-22 A	23-Jul-22	163
AIP-490	E&M AIP Report for Tertiary Treatment System (TTS) - Obtain Approval	7	24-Jul-22	30-Jul-22	163
Package 3A - Plant Service Water					
AIP-520	E&M AIP Report for Plant Service Water - Resubmission for further review	45	20-Dec-21 A	13-Aug-22	457
AIP-530	E&M AIP Report for Plant Service Water - Obtain Approval	7	14-Aug-22	20-Aug-22	457
Package 6A - Control & Monitoring System					
AIP-200	Control & Monitoring System - Resubmission for further review	14	24-Jan-22 A	13-Jul-22	25
AIP-620	Control & Monitoring System - Obtain Approval	7	14-Jul-22	20-Jul-22	25
Package 7A - Building Services System					
AIP-240	BS System - Resubmission for further review	14	28-Mar-22 A	13-Jul-22	324
AIP-250	BS System - Obtain Approval	7	14-Jul-22	20-Jul-22	324
Package 14A - E&M AIP Report for Deodorization Unit System					
AIP-850	DEO - Resubmission for further review	45	25-Nov-21 A	26-Jul-22	371
AIP-860	DEO - Obtain Approval	7	27-Jul-22	02-Aug-22	371
Package 22A - Sampling System of YLEPP					
AIP-910	Sampling System - Prepare & Submission for PM's review	45	22-Aug-22*	05-Oct-22	169
Package 23A - Security, Public Address and Communication System					



保華-中國中鐵聯營體
PAUL Y.-CREC JOINT VENTURE

Remaining Level of Ef...
Actual Work
Remaining Work
Critical Remaining Work
Milestone

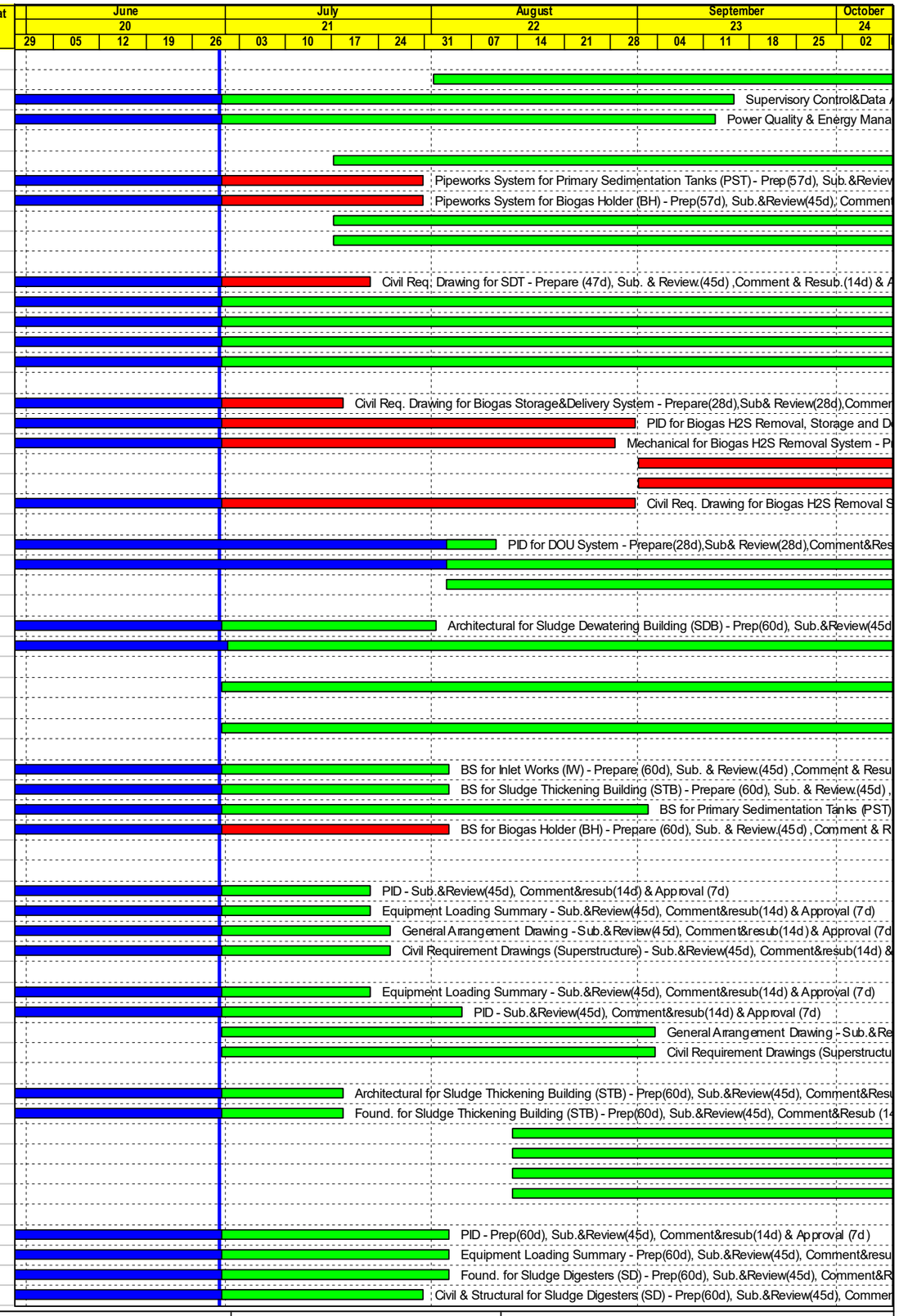
Contract DC/2019/10 - YLEPP - Main Works for Stage 1
Monthly Progress Report No. 20 - 3MRP (Jun 2022)

Project ID : DWP.DPr15_220716-J
Layout : DC201910 MPR20-3MRP

Monthly Progress Report No. 20 - 3MRP			
Date	Revision	Checked	Approved
30-Jun-22	Rev. 0		

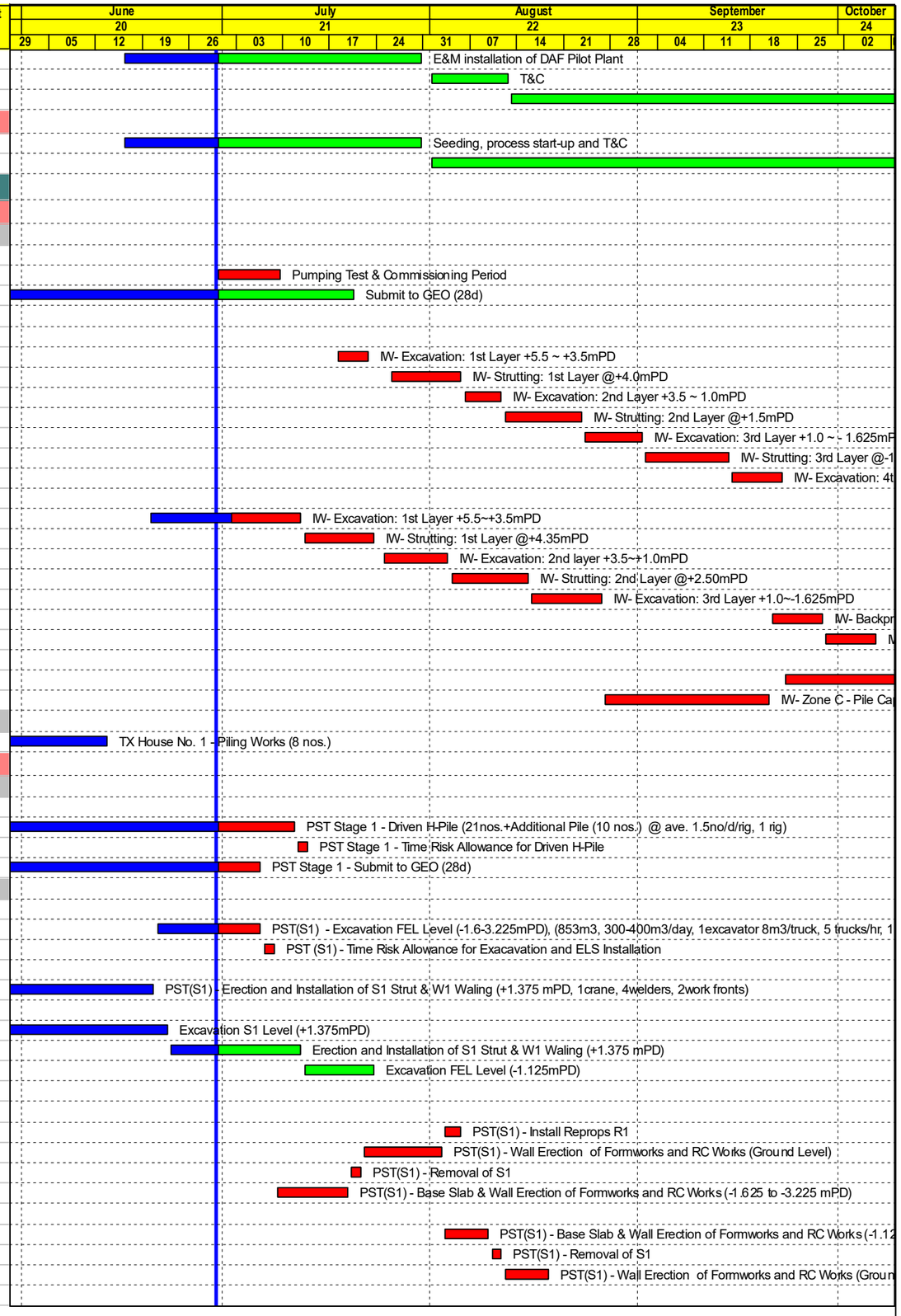
Activity ID	Activity Name	Orig Dur	Early Start	Early Finish	Total Float
AIP-950	SPC - Prepare & Submission for PM's review	45	01-Jun-22 A	13-Aug-22	364
AIP-960	SPC - Review by PM's & ICE review (28 d + 7d)	35	14-Aug-22	17-Sep-22	364
AIP-970	SPC - Resubmission for further review	45	18-Sep-22	01-Nov-22	364
DDA					
Package 1A - Hydraulic Detailed Design Approval (DDA) Report					
DDA-1480	Contractor's Design for Hydraulic - Resubmission for further review	45	25-Mar-22 A	09-Aug-22	264
DDA-1490	Contractor's Design for Hydraulic - Obtain Approval	7	10-Aug-22	16-Aug-22	264
Package 1B - General Notes and Typical Details Drawings for Civil, Structural and Geotechnical					
DDA-1080	Contractor's Design for General Architecture, Civil, Structural & Geotechnical - Submit to GEO for comment and ap	28	10-Aug-22	06-Sep-22	125
DDA-120	Contractor's Design for General Architecture, Civil, Structural & Geotechnical - Resubmission for further review	45	25-Mar-22 A	09-Aug-22	125
DDA-130	Contractor's Design for General Architecture, Civil, Structural & Geotechnical - Obtain Approval	7	31-Aug-22	06-Sep-22	125
Package 2 - Tertiary Treatment System					
DDA-150	Foundation for TTS - Prepare (90d), Sub. & Review.(45d) ,Comment & Resub.(14d) & Approval (7d), GEO (28d)	184	08-Oct-21 A	30-Sep-22	-38
DDA-170	Civil Req. for TTS (Foundation design) - Prepare(27d), Sub. & Review.(45d),Comment & Resub.(14d), GEO(28d)&	121	13-Jun-21 A	05-Aug-22	209
DDA-180	Civil Req. for TTS (Superstruct. design) - Prepare (147d), Sub. & Review.(45d) ,Comment & Resub.(14d) & Approv	213	11-Oct-21 A	09-Dec-22	336
DDA-190	P&ID for TTS - Prepare (60d), Sub. & Review.(45d) ,Comment & Resub.(14d) & Approval (7d)	213	31-Dec-21 A	18-Jan-23	336
DDA-200	Mechanical for TTS - Prepare (60d), Sub. & Review.(45d) ,Comment & Resub.(14d) & Approval (7d)	213	31-Dec-21 A	18-Jan-23	336
DDA-210	Electrical& Control for TTS - Prepare (60d), Sub. & Review.(45d) ,Comment & Resub.(14d) & Approval (7d)	213	31-Dec-21 A	18-Jan-23	336
Package 3 - Mainstream Bio-Reactor System					
DDA-230	Architectural for MBS - Prepare (60d), Sub. & Review.(45d) ,Comment & Resub.(14d) & Approval (7d)	126	05-Oct-21 A	27-Oct-22	48
DDA-240	Foundation for MBS - Prepare (97d), Sub. & Review.(45d) , Comment & Resub.(14d),GEO (28d)& Approval (7d)	191	18-Mar-22 A	28-Mar-23	48
DDA-260	Civil Req. for MBS-AGS (Foundation design) - Prepare (60d), Sub. & Review.(45d) ,Comment & Resub.(14d) & Ap	126	09-Jun-21 A	05-Aug-22	63
DDA-270	Civil Req. for MBS-AGS (Superstruct. design) - Prepare (60d), Sub. & Review.(45d) , Comment & Resub.(14d) & Ap	126	01-Mar-22 A	27-Oct-22	63
DDA-280	P&ID for TTS - MBS (60d), Sub. & Review.(45d) ,Comment & Resub.(14d) & Approval (7d)	126	08-Oct-21 A	27-Oct-22	314
DDA-290	Mechanical for MBS - Prepare (60d), Sub. & Review.(45d) ,Comment & Resub.(14d) & Approval (7d)	126	08-Oct-21 A	27-Oct-22	440
DDA-300	Electrical& Control for MBS - Prepare (60d), Sub. & Review.(45d) ,Comment & Resub.(14d) & Approval (7d)	126	08-Oct-21 A	27-Oct-22	440
Package 5A - Master Water Meter Cabinet					
DDA-360	Foundation for Master WM Carbinet- Prepare (60d), Sub. & Review.(45d) , Comment & Resub.(14d), GEO(28d) & A	154	15-Feb-22 A	30-Oct-22	4
DDA-370	Civil & Struct. for WM Carbinet- Prepare (90d), Sub. & Review.(45d) ,Comment & Resub.(14d) & Approval (7d)	156	15-Apr-22 A	01-Nov-22	4
Package 5B - Plant Service Water (PSW)					
DDA-1050	Civil Requirement Drawings - Prep(60d), Sub.&Review(45d), Comment&Resub (14d) & Approval (7d)	126	12-Jun-21 A	27-Oct-22	200
Package 6 - Sludge Thickening Chemical and Dosing System					
DDA-1120	P&ID for STCDS - Prepare (60d), Sub. & Review.(45d) ,Comment & Resub.(14d) & Approval (7d)	126	14-Aug-21 A	27-Oct-22	124
DDA-1130	Mechanical for STCDS - Prepare (60d), Sub. & Review.(45d) , Comment & Resub.(14d) & Approval (7d)	126	15-Nov-21 A	27-Oct-22	-2
DDA-1140	Electrical & Control for STCDS - Prepare (60d), Sub. & Review.(45d) ,Comment & Resub.(14d) & Approval (7d)	126	30-Nov-21 A	27-Oct-22	-2
DDA-430	Found.for STCS,WasteGasBurner &Guard Hse- Prepare(60d),Sub.&Review.(45d),Comment & Resub.(14d),GEO(2	126	28-Sep-22*	31-Jan-23	28
DDA-440	Civil & Struct. for STCS, WGB & Guard Hse - Prepare (60d), Sub. & Review.(45d) ,Comment & Resub.(14d) & Appr	126	09-Nov-21 A	05-Jan-23	54
DDA-440B	Civil Req. for STCDS - Prepare (60d), Sub. & Review.(45d) ,Comment & Resub.(14d) & Approval (7d)	126	15-Nov-21 A	27-Oct-22	-2
Package 7 - CLP Substation and 11kV Switchgear House					
DDA-1160	Earthing & Lighting System Design Report - Prepare (28d), Sub. & Review.(28d) ,Comment & Resub.(14d) & App	78	02-Jul-21 A	04-Jul-22	17
DDA-1450	VCAB, FSD & WSD Design Report - Prepare (28d), Sub. & Review.(28d) ,Comment & Resub.(14d) & Approval (7d	78	02-Jul-21 A	23-Jul-22	17
DDA-460	Civil&Struct. for CLP Sub. &11kV Switchgear Hse- Prep. (30d), Sub. & Review.(30d) ,Comment & Resub.(14d) & A	82	01-Jun-21 A	08-Jul-22	17
DDA-470	Electrical System for all facilities - Prepare (28d), Sub. & Review.(28d) , Comment & Resub.(14d) & Approval (7d)	78	01-Jun-21 A	23-Jul-22	17
DDA-480	UPS System for CLPSub.&11kV Switchgear Hse - Prepare (102d), Sub. & Review.(45d),Comment & Resub.(14d)&	168	03-Jun-21 A	16-Jul-22	41
DDA-490	BS for CLP Sub. &11kV Switchgear Hse - Prepare (28d), Sub. & Review.(28d) ,Comment & Resub.(14d) & Approv	78	01-Jun-21 A	23-Jul-22	17
Package 8 - Advance Works and SCADA Relocation					
DDA-500	Mechanical for Advance Works - Prepare (60d), Sub. & Review.(45d) ,Comment & Resub.(14d) & Approval (7d)	78	22-May-21 A	15-Jul-22	-171
DDA-510	Electrical & Control for Advance Works - Prepare (60d), Sub. & Review.(45d) ,Comment & Resub.(14d) & Approva	78	04-Jun-21 A	15-Jul-22	-171
DDA-520	BS for Advance Works - Prepare (60d), Sub. & Review.(45d) ,Comment & Resub.(14d) & Approval (7d)	78	04-May-21 A	15-Jul-22	-163
DDA-530	E&M for Advance Works - SCADA Relocation - Prepare (60d), Sub. & Review.(45d) ,Comment & Resub.(14d) & Ap	76	24-Jun-21 A	07-Jul-22	-163
Package 9 - Inlet Work (IW)					
DDA-1170	Civil Req. Drawing for Inlet Work - Prepare (30d), Sub. & Review.(30d) ,Comment & Resub.(14d) & Approval (7d)	82	04-Aug-21 A	15-Aug-22	153
DDA-1180	PID for Inlet Work - Prepare (30d), Sub. & Review.(30d) ,Comment & Resub.(14d) & Approval (7d)	82	10-Jul-21 A	14-Sep-22	153
DDA-1190	Mechanical for Inlet Work - Prepare (28d), Sub. & Review.(28d) ,Comment & Resub.(14d) & Approval (7d)	78	09-Aug-21 A	14-Sep-22	153
DDA-1200	Electrical & Control for Inlet Work - Prepare (28d), Sub. & Review.(28d) ,Comment & Resub.(14d) & Approval (7d)	78	30-Oct-21 A	14-Sep-22	153
DDA-1210	Building Services for Inlet Work - Prepare (28d), Sub. & Review.(28d) ,Comment & Resub.(14d) & Approval (7d)	76	30-Mar-22 A	27-Sep-22	159
Package 10 - Primary Sedimentation Tank (PST)					
DDA-1220	Civil Req. Drawing for PST - Prepare (46d), Sub. & Review.(30d) ,Comment & Resub.(14d) & Approval (7d)	98	01-Jun-21 A	30-Jul-22	32
DDA-1230	PID for PST - Prepare (46d), Sub. & Review.(30d) ,Comment & Resub.(14d) & Approval (7d)	98	01-Jun-21 A	06-Sep-22	32
DDA-1240	Mechanical for PST - Prepare (46d), Sub. & Review.(30d) ,Comment & Resub.(14d) & Approval (7d)	98	01-Jun-21 A	06-Sep-22	32
DDA-1250	Electrical & Control for PST - Prepare (28d), Sub. & Review.(28d) ,Comment & Resub.(14d) & Approval (7d)	48	31-Aug-21 A	14-Aug-22	32
DDA-1260	Building Services for PST - Prepare (28d), Sub. & Review.(28d) ,Comment & Resub.(14d) & Approval (7d)	78	01-Oct-21 A	12-Sep-22	32

Activity ID	Activity Name	Orig Dur	Early Start	Early Finish	Total Float
Package 11 - Control and Monitoring System					
DDA-1270	Gas Detection System - Prep(28d), Sub.&Review(28d), Comment&Resub (14d) & Approval (7d)	78	01-Aug-22*	17-Oct-22	146
DDA-550	Supervisory Control&Data Application (SCADA) System - Prep(28d), Sub.&Review(28d), Comment&Resub (14d) &	78	14-May-22 A	15-Sep-22	178
DDA-580	Power Quality & Energy Management System (PQEMS) - Prep(28d), Sub.&Review(28d), Comment&Resub (14d)	78	02-Oct-21 A	12-Sep-22	181
Package 13 - Pipework System					
DDA-1030	Pipeworks System for Sludge Digesters - Prep(60d),Sub.&Review(45d),Comment&Resub (14d) &Approval (7d)	126	17-Jul-22	19-Nov-22	212
DDA-670	Pipeworks System for Primary Sedimentation Tanks (PST)- Prep(57d), Sub.&Review(45d), Comment&Resub(14d	123	18-Sep-21 A	30-Jul-22	-33
DDA-680	Pipeworks System for Biogas Holder (BH) - Prep(57d), Sub.&Review(45d), Comment&Resub (14d) & Approval (7d	123	18-Sep-21 A	30-Jul-22	-33
DDA-690	Pipeworks System for Sludge Dewatering Building (SDB) - Prep(60d),Sub.&Review(45d),Comment&Resub (14d) &	126	17-Jul-22	19-Nov-22	212
DDA-700	Pipeworks System for Utility Corridor&Pipe Portal (UC/PP) - Prep(103d),Sub.&Review(45d),Comment&Resub(14d)(	126	17-Jul-22	19-Nov-22	389
Package 14 - Sludge Anaerobic Digestion System (SDT)					
DDA-1290	Civil Req. Drawing for SDT - Prepare (47d), Sub. & Review.(45d) ,Comment & Resub.(14d) & Approval (7d)	113	10-Jul-21 A	22-Jul-22	-220
DDA-1300	PID for SDT - Prepare (47d), Sub. & Review.(45d) ,Comment & Resub.(14d) & Approval (7d)	113	10-Jul-21 A	15-Oct-22	29
DDA-1310	Mechanical for SDT & UC/PP - Prepare (47d), Sub. & Review.(45d) ,Comment & Resub.(14d) & Approval (7d)	113	10-Jul-21 A	15-Oct-22	29
DDA-1320	Electrical & Control for SDT & UC/PP - Prepare (55d), Sub. & Review.(45d) ,Comment & Resub.(14d) & Approval (7	121	02-Jul-21 A	22-Oct-22	117
DDA-1340	Civil Req. Drawing for UC/PP - Prepare (47d), Sub. & Review.(45d) ,Comment & Resub.(14d) & Approval (7d)	113	10-Jul-21 A	15-Oct-22	29
Package 15 - Biogas H2S Removal, Storage and Delivery System					
DDA-1350	Civil Req. Drawing for Biogas Storage&Delivery System - Prepare(28d),Sub& Review(28d),Comment&Resub(14d)(	78	31-Aug-21 A	18-Jul-22	-220
DDA-1360	PID for Biogas H2S Removal, Storage and Delivery System - Prepare(28d),Sub& Review(28d),Comment&Resub(1	75	13-Jul-21 A	31-Aug-22	-62
DDA-1370	Mechanical for Biogas H2S Removal System - Prepare(28d),Sub& Review(28d),Comment&Resub(14d)&Approval	78	05-Oct-21 A	28-Aug-22	-62
DDA-1380	Electrical & Control for Biogas H2S Removal System - Prepare(28d),Sub& Review(28d),Comment&Resub(14d)&Ap	79	01-Sep-22	18-Nov-22	-144
DDA-1390	Building Services for Biogas H2S Removal System - Prepare(28d),Sub& Review(28d),Comment&Resub(14d)&App	79	01-Sep-22	18-Nov-22	-144
DDA-1400	Civil Req. Drawing for Biogas H2S Removal System - Prepare(28d),Sub& Review(28d),Comment&Resub(14d)&Ap	78	07-Dec-21 A	31-Aug-22	-144
Package 16 - Deodorization Unit System					
DDA-1410	PID for DOU System - Prepare(28d),Sub& Review(28d),Comment&Resub(14d)&Approval (7d)	78	03-Sep-21 A	10-Aug-22	371
DDA-1420	Mechanical for DOU No. 1 - Prepare(28d),Sub& Review(28d),Comment&Resub(14d)&Approval (7d)	78	04-Mar-22 A	16-Oct-22	371
DDA-1440	Mechanical for DOU No. 3 - Prepare(28d),Sub& Review(28d),Comment&Resub(14d)&Approval (7d)	78	03-Aug-22*	19-Oct-22	446
Package 17 - Sludge Dewatering Building (SDB)					
DDA-890	Architectural for Sludge Dewatering Building (SDB) - Prep(60d), Sub.&Review(45d), Comment&Resub (14d) & App	126	07-Jun-21 A	01-Aug-22	1378
DDA-900	Found. for Sludge Dewatering Building (SDB) - Prep(60d), Sub.&Review(45d), Comment&Resub (14d), GEO (28d	154	10-Nov-21 A	09-Oct-22	550
Package 19 - Elevated Walkways					
DDA-710	Civil & Structural for Elevated Walkways - Prep(60d), Sub.&Review(45d), Comment&Resub (14d) & Approval(7d), (	154	30-Jun-22	30-Nov-22	830
Package 21 - Steel Working Platform					
DDA-730	Civil & Structural for Steel Working Platform - Prep(60d), Sub.&Review(45d), Comment&Resub (14d) & Approval(7(	126	30-Jun-22	02-Nov-22	830
Building Services					
DDA-590	BS for Inlet Works (IW) - Prepare (60d), Sub. & Review.(45d) ,Comment & Resub.(14d) & Approval (7d)	126	31-Aug-21 A	03-Aug-22	214
DDA-600	BS for Sludge Thickening Building (STB) - Prepare (60d), Sub. & Review.(45d) ,Comment & Resub.(14d) & Approv	126	31-Aug-21 A	03-Aug-22	371
DDA-610	BS for Primary Sedimentation Tanks (PST) - Prepare (60d), Sub. & Review.(45d) ,Comment & Resub.(14d) & Appr	126	30-Sep-21 A	02-Sep-22	238
DDA-620	BS for Biogas Holder (BH) - Prepare (60d), Sub. & Review.(45d) ,Comment & Resub.(14d) & Approval (7d)	126	31-Aug-21 A	03-Aug-22	-37
Technical Submission					
Inlet Works (IW)					
TS-890	PID - Sub.&Review(45d), Comment&resub(14d) & Approval (7d)	66	03-Sep-21 A	22-Jul-22	110
TS-900	Equipment Loading Summary - Sub.&Review(45d), Comment&resub(14d) & Approval (7d)	66	03-Sep-21 A	22-Jul-22	110
TS-910	General Arrangement Drawing - Sub.&Review(45d), Comment&resub(14d) & Approval (7d)	66	30-May-21 A	25-Jul-22	204
TS-920	Civil Requirement Drawings (Superstructure) - Sub.&Review(45d), Comment&resub(14d) & Approval (7d)	66	30-May-21 A	25-Jul-22	204
Primary Sedimentation Tank (PST)					
TS-930	Equipment Loading Summary - Sub.&Review(45d), Comment&resub(14d) & Approval (7d)	66	03-Sep-21 A	22-Jul-22	110
TS-940	PID - Sub.&Review(45d), Comment&resub(14d) & Approval (7d)	66	03-Sep-21 A	05-Aug-22	110
TS-950	General Arrangement Drawing - Sub.&Review(45d), Comment&resub(14d) & Approval (7d)	66	30-Jun-22	03-Sep-22	110
TS-960	Civil Requirement Drawings (Superstructure) - Sub.&Review(45d), Comment&resub(14d) & Approval (7d)	66	30-Jun-22	03-Sep-22	110
Sludge Thickening Building (STB)					
TS-820	Architectural for Sludge Thickening Building (STB) - Prep(60d), Sub.&Review(45d), Comment&Resub (14d) & Appr	126	01-Jun-21 A	18-Jul-22	107
TS-830	Found. for Sludge Thickening Building (STB) - Prep(60d), Sub.&Review(45d), Comment&Resub (14d), GEO(28d) (	154	01-Jun-21 A	18-Jul-22	585
TS-840	Civil & Structural for Sludge Thickening Bldg (STB) - Prep(27d), Sub.&Review(45d), Comment&Resub (14d) & App	93	13-Aug-22	13-Nov-22	107
TS-850	General Arrangement & Civil Req. Drawings for STB - Prep(27d), Sub.&Review(45d), Comment&Resub (14d) & Ap	93	13-Aug-22	13-Nov-22	466
TS-970	PID - Prep(27d), Sub.&Review(45d), Comment&resub(14d) & Approval (7d)	93	13-Aug-22	13-Nov-22	107
TS-980	Equipment Loading Summary - Prep(27d), Sub.&Review(45d), Comment&resub(14d) & Approval (7d)	93	13-Aug-22	13-Nov-22	541
Sludge Digesters (SD)					
TS-1030	PID - Prep(60d), Sub.&Review(45d), Comment&resub(14d) & Approval (7d)	126	25-Sep-21 A	03-Aug-22	320
TS-1040	Equipment Loading Summary - Prep(60d), Sub.&Review(45d), Comment&resub(14d) & Approval (7d)	126	25-Sep-21 A	03-Aug-22	320
TS-740	Found. for Sludge Digesters (SD) - Prep(60d), Sub.&Review(45d), Comment&Resub (14d), GEO (28d)& Approval (	126	25-Sep-21 A	03-Aug-22	106
TS-750	Civil & Structural for Sludge Digesters (SD) - Prep(60d), Sub.&Review(45d), Comment&Resub (14d) & Approval(7d	126	25-Sep-21 A	30-Jul-22	106

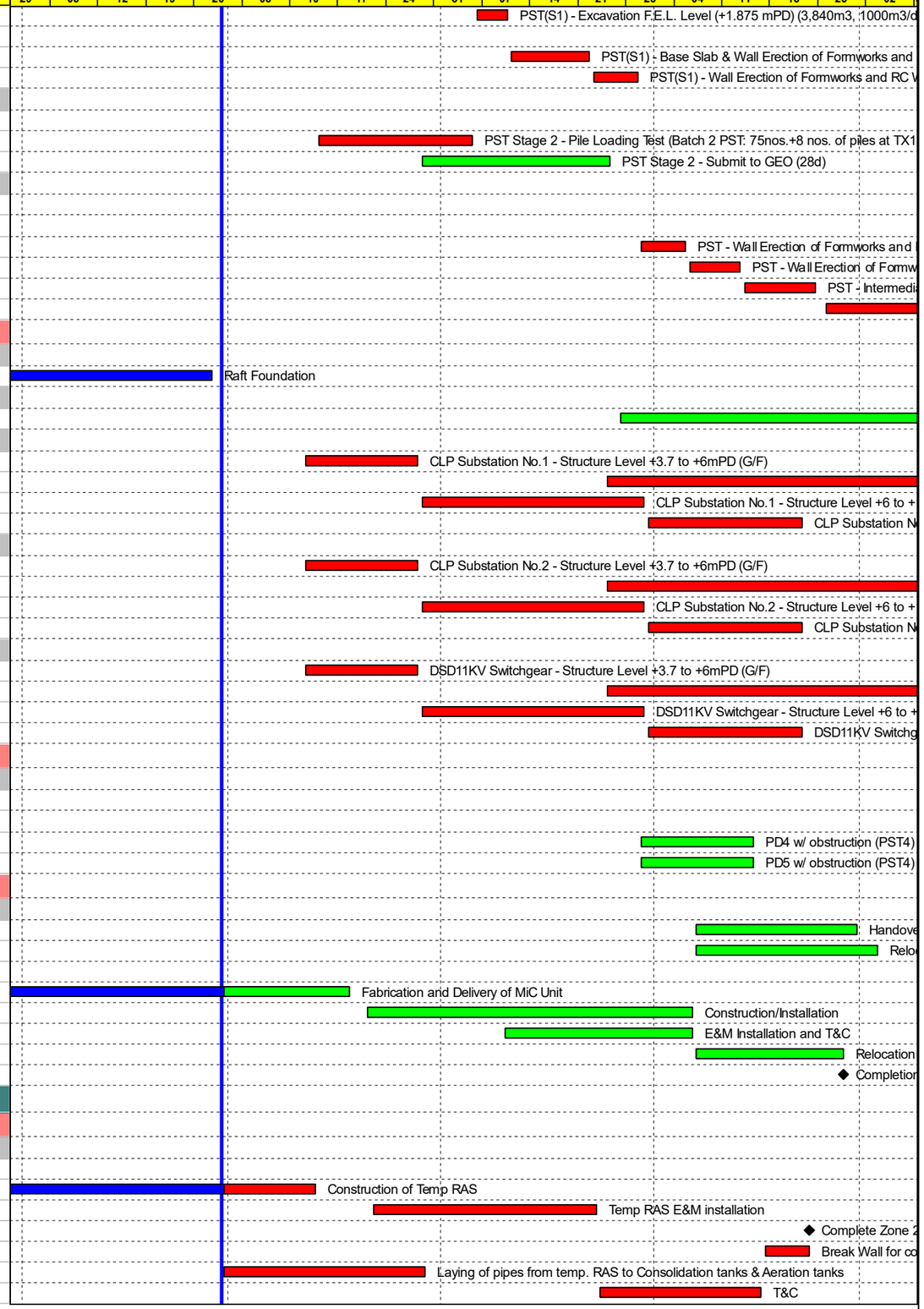


Activity ID	Activity Name	Orig Dur	Early Start	Early Finish	Total Float
TS-760	General Arrangement & Civil Req. Drawings for SD - Prep(60d), Sub.&Review(45d), Comment&Resub (14d) & Appr	126	25-Sep-21 A	28-Jul-22	205
TS-770	Mechanical for Sludge Digesters (SD) - Prep(60d), Sub.&Review(45d), Comment&Resub (14d) & Approval(7d)	126	24-Jul-22	26-Nov-22	205
Biogas Holders (BH)					
TS-1050	PID - Sub.&Review(45d), Comment&resub(14d) & Approval (7d)	66	31-Aug-21 A	05-Jul-22	-103
TS-1060	Equipment Loading Summary - Sub.&Review(45d), Comment&resub(14d) & Approval (7d)	66	31-Aug-21 A	05-Jul-22	-103
TS-780	Foundation for Biogas Holders (BH) - Prep(53d), Sub.&Review(45d), Comment&Resub (14d), GEO (28d) & Approv	147	12-Jun-21 A	18-Jul-22	-220
TS-790	Civil & Structural for Biogas Holders (BH) - Sub.&Review(45d), Comment&Resub (14d) & Approval(7d)	66	12-Jun-21 A	30-Jul-22	-135
TS-800	General Arrangement & Civil Req.Drawings for BH - Prep(127d), Sub.&Review(45d), Comment&Resub (14d) & Ap	193	16-Sep-21 A	09-Nov-22	-135
TS-810	Mechanical for Biogas Holders (BH) - Prep(60d), Sub.&Review(45d), Comment&Resub (14d) & Approval (7d)	126	05-Nov-21 A	08-Oct-22	-103
SCADA					
TS-1070	Layout and Wiring Diagram for YLEPP PLC Panel - Prep(144d), Sub.&Review(45d), Comment&Resub (14d)&App	210	21-Jul-22	15-Feb-23	25
TS-1080	System Architecture for Exsting YLSTW Temporary SCADA System - Prep(144d),Sub&Rev(45d),Comments&Resu	210	21-Jul-22	15-Feb-23	25
TS-1090	Layout and Wiring Diagram for Existing YLSTW Temp PLC Panel - Prep(144d),Sub&Rev(45d),Comments&Resub(	210	21-Jul-22	15-Feb-23	25
TS-1100	System Architecture for YLEPP SCADA System - Prep(144d), Sub.&Review(45d), Comment&Resub (14d)&Approv	210	21-Jul-22	15-Feb-23	25
Utility Corridor and Pipe Portal					
TS-1110	General Arrangement Drawing - Prep(144d), Sub.&Review(45d), Comment&resub(14d) & Approval (7d)	210	21-Jul-22	15-Feb-23	433
TS-1120	Civil Requirement Drawings (Superstructure) - Prep(144d), Sub.&Review(45d), Comment&resub(14d) & Approval (7	210	21-Jul-22	15-Feb-23	433
TS-1140	Equipment Loading Summary - Prep(144d), Sub.&Review(45d), Comment&resub(14d) & Approval (7d)	210	21-Jul-22	15-Feb-23	433
Hazardous Area Classification and Fire Risk Assessment					
TS-1800	Hazardous Area Classification and Fire Risk Assessment Specialist - Submission & Approval	20	31-Aug-21 A	30-Jun-22	-38
TS-1810	Hazardous Area Classification Assessment - Prep(60), Sub.&Review(45d), Comment&resub(14d) & Approval (7d)	126	20-Sep-21 A	04-Aug-22	-38
TS-1820	Fire Risk Assessment - Prep(60), Sub.&Review(45d), Comment&resub(14d) & Approval (7d)	126	20-Sep-21 A	04-Aug-22	-38
Material Submission, Procurement, Manufacturing and Delivery					
PRE-230	Submit/Procure/Manufacture/Deliver Main Stream Bio-Reactor E&M Equip.	270	09-Nov-20 A	13-Mar-23	303
PRE-240	Submit/Procure/Manufacture/Deliver TTS & Auxillary Facility Equip.	270	09-Nov-20 A	27-Feb-23	296
PRE-250	Submit/Procure/Manufacture/Deliver Thickening System/Digestion/sludge holding Tanks	300	09-Nov-20 A	11-Mar-23	600
Site Establishment Works					
Temporary Transformer 1600A					
P5-150	Comepletion of Temp Transformer 1600A	0		15-Jun-22 A	
PM and Contractor Accomodation					
Project Manager's & Contractor Site Accommodation					
MiC Section					
PMCA-190	Installation of Green Roof	16	09-Nov-21 A	26-Aug-22	1639
Caving System					
PMCA-240	Caving System Construction	33	03-May-22 A	23-Jul-22	-18
PMCA-250	Caving System Installation (Set-Up & T&C)	60	25-Jul-22	05-Oct-22	-18
FSI, FSD and OP Requirements					
FSI Submission & Approval					
FSD-1030	PM Review	31	12-Nov-21 A	19-Aug-22	-123
FSD-1040	Submission Period for FSD Review (Assumed 12 Months) - Full GBP+GBP for TOP1	367	20-Aug-22	21-Aug-23	-123
Application Form Schedule EMSD (ATAL)					
Phase 1					
ATAL-FS-0010	Form 104 for Biogas Holder Tank 1(Submission and Approval Period)	184	02-May-22 A	12-Dec-22	1414
HAZOP Study					
HAZOP-010	Engage Independent Consultant	20	20-Aug-22	08-Sep-22	-123
Zone 1 (for PST(Stage1), others provide later)					
HAZOP-Z1-010	Review Design / Installation HAZOP for PST (Stage 1) by independent consultant	30	09-Sep-22	08-Oct-22	48
Zone 3 (for BH No.1 , others provide later)					
HAZOP-Z3-010	Review Design / Installation HAZOP for Biogas Holder No. 1 by independent consultant	30	09-Sep-22	08-Oct-22	-123
General Advance Works					
NSWSPS Sensors					
ATALGA-1160	CGS - Method Statement for Installation	101	03-Aug-21 A	20-Jul-22	161
ATALGA-1170	Procurement & Delivery of Sensor	101	03-Aug-21 A	20-Jul-22	161
ATALGA-1260	Installation of pressure sensors at NSWSPS	22	21-Jul-22	15-Aug-22	133
Air Blower House					
ATALGA-1280	CMS - Air Blower System	128	16-Aug-22	18-Jan-23	133
Disc Filter (DF) Pilot Plant					
ATALGA-1140	E&M installation of DF Pilot Plant	51	10-Feb-22 A	25-Jul-22	457
ATALGA-1190	T&C	22	26-Jul-22	19-Aug-22	457
Dissolved Air Flotation (DAF) Pilot Plant					

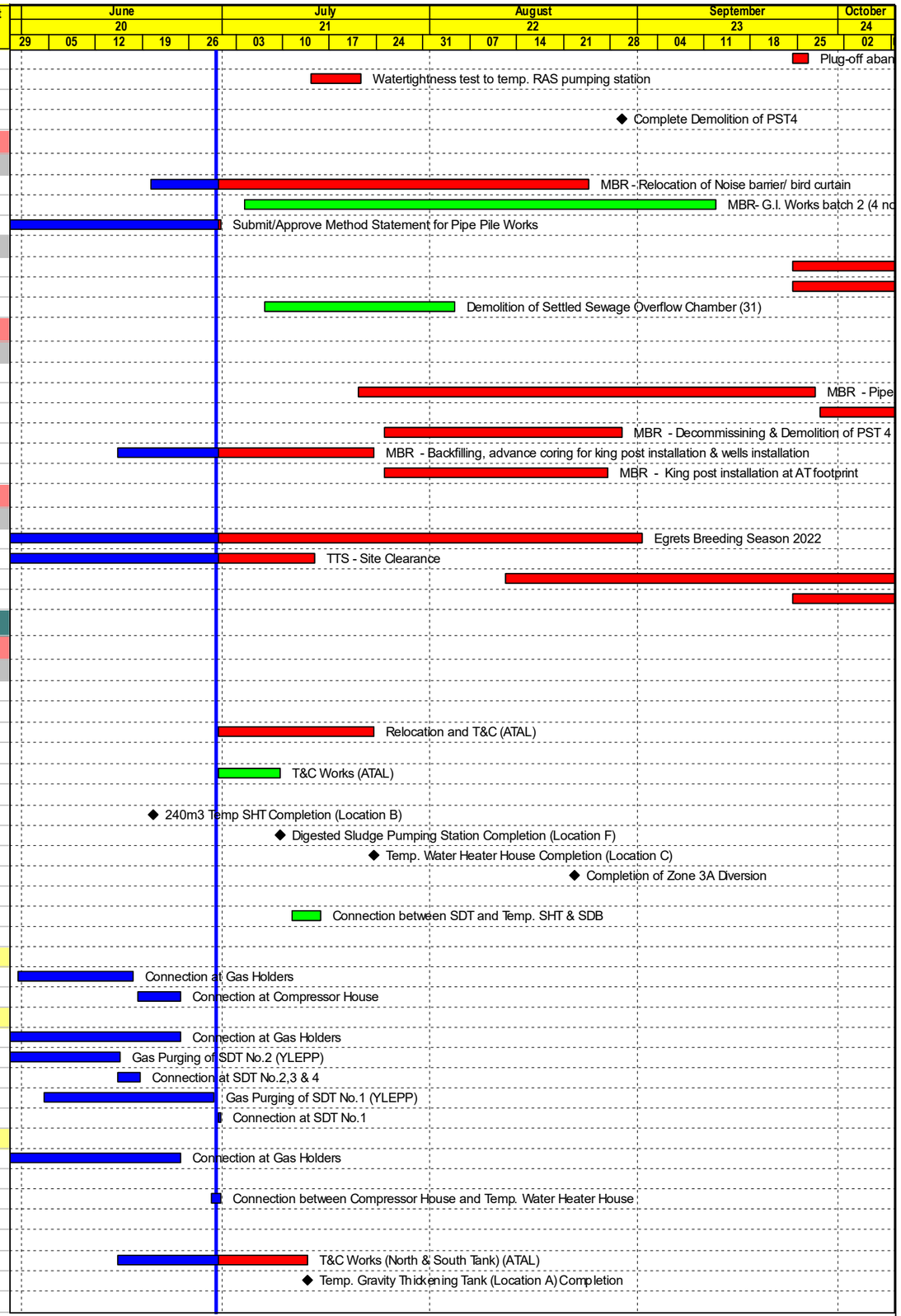
Activity ID	Activity Name	Orig Dur	Early Start	Early Finish	Total Float
ATALGA-1150	E&M installation of DAF Pilot Plant	51	16-Jun-22 A	30-Jul-22	319
ATALGA-1200	T&C	11	01-Aug-22	12-Aug-22	319
ATALGA-1220	Post-commissioning	144	13-Aug-22	10-Feb-23	319
Aerobic Granular Sludge (AGS) Pilot Plant					
ATALGA-1210	Seeding, process start-up and T&C	52	16-Jun-22 A	30-Jul-22	335
ATALGA-1270	Post-commissioning	139	01-Aug-22	16-Jan-23	335
Zone 1 Construction					
Inlet Works (IW)					
IW Foundation & ELS Works					
IW Basement					
Z1-IW-3950	Pumping Test & Commissioning Period	14	30-Jun-22 A	09-Jul-22	-59
Z1-IW-4300	Submit to GEO (28d)	28	10-May-22 A	20-Jul-22	1671
IW Excavation Works & ELS					
IW Zone A/D- ELS					
Z1-IW-5760	IW- Excavation: 1st Layer +5.5 ~ +3.5mPD	5	18-Jul-22	22-Jul-22	-59
Z1-IW-5770	IW- Strutting: 1st Layer @+4.0mPD	10	26-Jul-22	05-Aug-22	-61
Z1-IW-5780	IW- Excavation: 2nd Layer +3.5 ~ 1.0mPD	5	06-Aug-22	11-Aug-22	-61
Z1-IW-5790	IW- Strutting: 2nd Layer @+1.5mPD	10	12-Aug-22	23-Aug-22	-61
Z1-IW-5800	IW- Excavation: 3rd Layer +1.0 ~ - 1.625mPD	8	24-Aug-22	01-Sep-22	-61
Z1-IW-5810	IW- Strutting: 3rd Layer @-1.125mPD	10	02-Sep-22	14-Sep-22	-61
Z1-IW-5820	IW- Excavation: 4th Layer -1.625 ~ -3.38mPD	7	15-Sep-22	22-Sep-22	-61
IW Zone C - ELS					
Z1-IW-5650	IW- Excavation: 1st Layer +5.5~+3.5mPD	10	20-Jun-22 A	12-Jul-22	-55
Z1-IW-5660	IW- Strutting: 1st Layer @+4.35mPD	10	13-Jul-22	23-Jul-22	-51
Z1-IW-5670	IW- Excavation: 2nd layer +3.5~+1.0mPD	9	25-Jul-22	03-Aug-22	-51
Z1-IW-5680	IW- Strutting: 2nd Layer @+2.50mPD	10	04-Aug-22	15-Aug-22	-51
Z1-IW-5690	IW- Excavation: 3rd Layer +1.0~-1.625mPD	10	16-Aug-22	26-Aug-22	-51
Z1-IW-5700	IW- Backprop installation	7	21-Sep-22	28-Sep-22	-51
Z1-IW-5710	IW- Excavation to Formation -1.625~-3.125mPD	5	29-Sep-22	06-Oct-22	-51
IW Base Slab					
Z1-IW-6060	IW- Zone D - Pile Cap @-3.225mPD	27	23-Sep-22	26-Oct-22	-61
Z1-IW-6070	IW- Zone C - Pile Cap @-1.625mpD	20	27-Aug-22	20-Sep-22	-51
IW Transformer House No. 1					
IW-2785	TX House No. 1 - Piling Works (8 nos.)	10	17-May-22 A	13-Jun-22 A	
Primary Sedimentation Tank (PST)					
PST Stage 1 of Works					
PST Stage 1 - Foundation (At First 3 Tanks, PST 7-8 Footprint)					
PST-1220	PST Stage 1 - Driven H-Pile (21nos.+Additional Pile (10 nos.) @ ave. 1.5no/d/rig, 1 rig)	14	03-May-22 A	11-Jul-22	-10
PST-1230	PST Stage 1 - Time Risk Allowance for Driven H-Pile	2	12-Jul-22	13-Jul-22	-10
PST-3020	PST Stage 1 - Submit to GEO (28d)	28	31-Mar-22 A	06-Jul-22	-59
PST Stage 1					
Excavation Works (Southern Trench), (Excavation Volume: 5,795m3)					
Z1-PST-3600	PST(S1) - Excavation FEL Level (-1.6-3.225mPD), (853m3, 300-400m3/day, 1excavator 8m3/truck, 5 trucks/hr, 1r	5	21-Jun-22 A	06-Jul-22	-61
Z1-PST-3810	PST (S1) - Time Risk Allowance for Exacavation and ELS Installation	2	07-Jul-22	08-Jul-22	-61
ELS Erection Works					
Z1-PST-3590	PST(S1) - Erection and Installation of S1 Strut & W1 Waling (+1.375 mPD, 1crane, 4welders, 2work fronts)	6	21-May-22 A	20-Jun-22 A	
ELS for Northern Trench (Zone E1)					
Z1-PST-3591	Excavation S1 Level (+1.375mPD)	15	21-May-22 A	22-Jun-22 A	
Z1-PST-3601	Erection and Installation of S1 Strut & W1 Waling (+1.375 mPD)	10	23-Jun-22 A	12-Jul-22	7
Z1-PST-3611	Excavation FEL Level (-1.125mPD)	10	13-Jul-22	23-Jul-22	7
Basement RC Works (Stage 1 - Southern Portion)					
Southern Trench (Lower Portion)					
Z1-PST-3630	PST(S1) - Install Reprops R1	3	03-Aug-22	05-Aug-22	-61
Z1-PST-3640	PST(S1) - Wall Erection of Formworks and RC Works (Ground Level)	10	22-Jul-22	02-Aug-22	-61
Z1-PST-3800	PST(S1) - Removal of S1	2	20-Jul-22	21-Jul-22	-61
Z1-PST-3860	PST(S1) - Base Slab & Wall Erection of Formworks and RC Works (-1.625 to -3.225 mPD)	9	09-Jul-22	19-Jul-22	-61
Northern Trench (Lower Portion)					
Z1-PST-3620	PST(S1) - Base Slab & Wall Erection of Formworks and RC Works (-1.125 mPD)	6	03-Aug-22	09-Aug-22	-1
Z1-PST-4240	PST(S1) - Removal of S1	2	10-Aug-22	11-Aug-22	-1
Z1-PST-4260	PST(S1) - Wall Erection of Formworks and RC Works (Ground Level)	6	12-Aug-22	18-Aug-22	-1
Excavation Works (North Portion), (Excavation Volume: 3,840m3)					



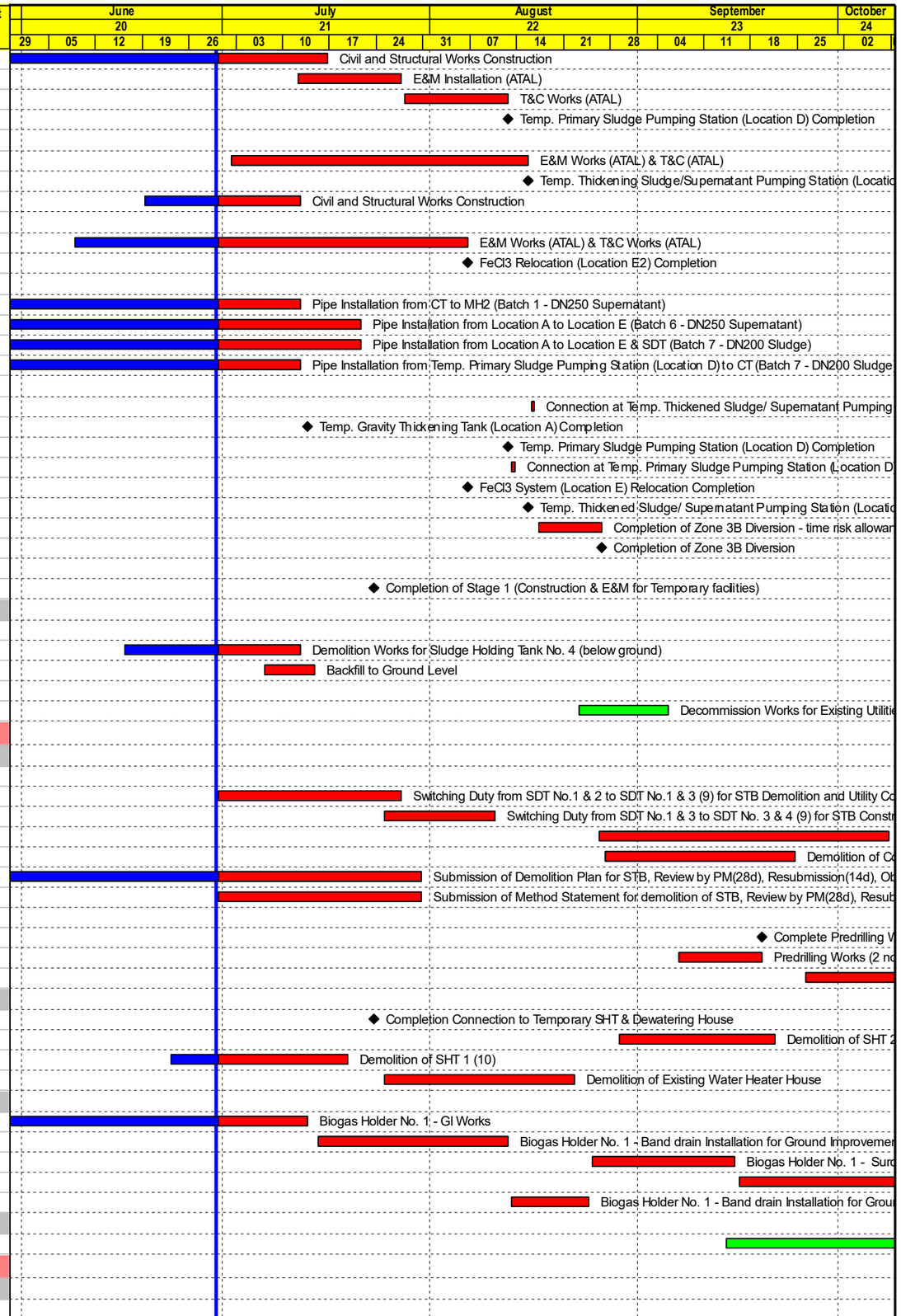
Activity ID	Activity Name	Orig Dur	Early Start	Early Finish	Total Float
Z1-PST-4180	PST(S1) - Excavation F.E.L. Level (+1.875 mPD) (3,840m3, 1000m3/day) after stage 2 piling	4	06-Aug-22	10-Aug-22	-10
Basement RC Works (North Portion)					
Z1-PST-4190	PST(S1) - Base Slab & Wall Erection of Formworks and RC Works (+3.00 mPD) after stage 2 piling	10	11-Aug-22	22-Aug-22	-10
Z1-PST-4200	PST(S1) - Wall Erection of Formworks and RC Works (Ground Level) after stage 2 piling	6	23-Aug-22	29-Aug-22	-10
PST Stage 2 of Works					
PST Foundation - Stage 2 (At Remaining 2 Tanks, PST 5-6 Footprint)					
Z1-PST-3980	PST Stage 2 - Pile Loading Test (Batch 2 PST: 75nos.+8 nos. of piles at TX1+Additional Piles)	20	14-Jul-22	05-Aug-22	-10
Z1-PST-4230	PST Stage 2 - Submit to GEO (28d)	28	29-Jul-22	25-Aug-22	308
PST Superstructure					
Stage 1					
RC Works					
Z1-PST-3650	PST - Wall Erection of Formworks and RC Works (+5.85mPD)	6	30-Aug-22	05-Sep-22	-10
Z1-PST-3660	PST - Wall Erection of Formworks and RC Works (+7.5mPD)	6	06-Sep-22	13-Sep-22	-10
Z1-PST-3670	PST - Intermediate Slab (+7.88mPD) and Wall Erection (+9mPD)pf Falseworks, Formworks and RC Works	10	14-Sep-22	24-Sep-22	-10
Z1-PST-3680	PST - Intermediate Slab of Falseworks, Formworks and RC Works (+9mPD)	13	26-Sep-22	12-Oct-22	-10
CLP Substations No. 1 & 2					
Foundation					
CLP-1200	Raft Foundation	24	20-May-22 A	28-Jun-22 A	
Civil Provision for CLP (drawpits & ductings)					
CLP-1270	Ducting and Drawpits construction	45	27-Aug-22	21-Oct-22	20
CLP Substation No. 1					
CLP-1010	CLP Substation No.1 - Structure Level +3.7 to +6mPD (G/F)	15	12-Jul-22	28-Jul-22	-13
CLP-1040	CLP Substation No.1 - BS and ABWF Works	48	25-Aug-22	22-Oct-22	-13
CLP-1280	CLP Substation No.1 - Structure Level +6 to +11.73mPD (1/F)	28	29-Jul-22	30-Aug-22	-13
CLP-1290	CLP Substation No.1 - Structure Level +11.73 to +13.11mPD (R/F)	19	31-Aug-22	22-Sep-22	-13
CLP Substation No. 2					
CLP-1020	CLP Substation No.2 - Structure Level +3.7 to +6mPD (G/F)	15	12-Jul-22	28-Jul-22	-13
CLP-1050	CLP Substation No.2 - BS and ABWF Works	48	25-Aug-22	22-Oct-22	-13
CLP-1300	CLP Substation No.2 - Structure Level +6 to +11.73mPD (1/F)	28	29-Jul-22	30-Aug-22	-13
CLP-1310	CLP Substation No.2 - Structure Level +11.73 to +13.11mPD (R/F)	19	31-Aug-22	22-Sep-22	-13
DSD 11kV Switchgear					
CLP-1030	DSD11KV Switchgear - Structure Level +3.7 to +6mPD (G/F)	15	12-Jul-22	28-Jul-22	-13
CLP-1060	DSD11KV Switchgear - BS and ABWF Works	48	25-Aug-22	22-Oct-22	-13
CLP-1320	DSD11KV Switchgear - Structure Level +6 to +11.73mPD (1/F)	28	29-Jul-22	30-Aug-22	-13
CLP-1330	DSD11KV Switchgear - Structure Level +11.73 to +13.11mPD (R/F)	19	31-Aug-22	22-Sep-22	-13
Sludge Dewatering Building (SDB)					
SDB Foundation & ELS - Stage 1					
SDB GI - Pre-drilling Works					
SDB At PST 2,4 Footprint					
SDB-1350	PD4 w/ obstruction (PST4)	14	30-Aug-22	15-Sep-22	457
SDB-1360	PD5 w/ obstruction (PST4)	14	30-Aug-22	15-Sep-22	457
Administration Building (ADB)					
Temporary Admin Office and Control Room					
ADB-1040	Handover of Temp. Admin Office and Control Room	20	07-Sep-22	30-Sep-22	445
ADB-1250	Relocation of Existing SCADA System of Admin Bldg (23) and Document Centre (24)	21	07-Sep-22	03-Oct-22	445
Temp Admin Office - MiC Section					
ADB-1020A100	Fabrication and Delivery of MiC Unit	36	20-May-22 A	18-Jul-22	445
ADB-1020A20	Construction/Installation	41	21-Jul-22	06-Sep-22	445
ADB-1020A30	E&M Installation and T&C	24	10-Aug-22	06-Sep-22	445
ADB-1020A40	Relocation of Admin Office (MiC)	18	07-Sep-22	28-Sep-22	447
ADB-1020A90	Completion of Admin Office (MiC)	0		28-Sep-22	448
Zone 2 Construction					
Temporary Diversion					
Zone 2B : FST, Temporary RAS to Aeration Tanks					
Temporary RAS					
Z2B-1030	Construction of Temp RAS	21	17-May-22 A	13-Jul-22	-57
Z2B-1040	Temp RAS E&M installation	28	22-Jul-22	23-Aug-22	-57
Z2B-1180	Complete Zone 2B Temporary Diversion	0		23-Sep-22	-57
Z2B-1190	Break Wall for connection to temporary RAS & Swtich over	6	17-Sep-22	23-Sep-22	-57
Z2B-1200	Laying of pipes from temp. RAS to Consolidation tanks & Aeration tanks	25	30-Jun-22	29-Jul-22	-36
Z2B-1210	T&C	20	24-Aug-22	16-Sep-22	-57



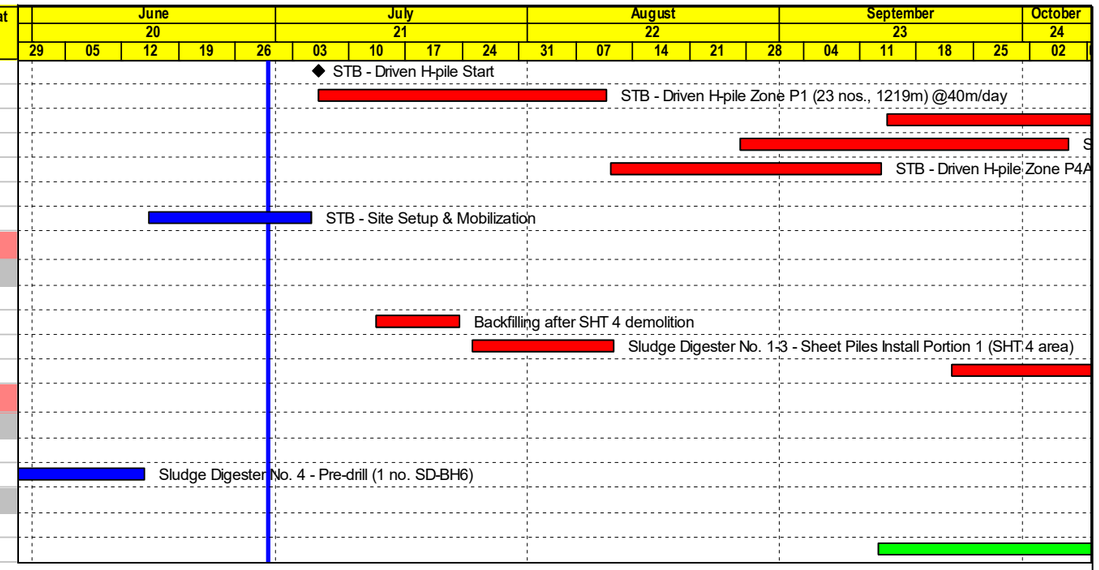
Activity ID	Activity Name	Orig Dur	Early Start	Early Finish	Total Float
Z2B-1220	Plug-off abandoned pipes	2	24-Sep-22	26-Sep-22	-29
Z2B-1230	Watertightness test to temp. RAS pumping station	7	14-Jul-22	21-Jul-22	-57
Temporary Sewage Routing					
Z2D-2160	Complete Demolition of PST4	0		29-Aug-22	457
Demolition Works					
Advance Works					
MBR-1480	MBR - Relocation of Noise barrier/ bird curtain	58	20-Jun-22 A	24-Aug-22	-18
MBR-1540	MBR- G.I. Works batch 2 (4 nos., 1rig, nos. of G.I. subject to GEO Further Comment)	60	04-Jul-22	12-Sep-22	3
Z2D-4280	Submit/Approve Method Statement for Pipe Pile Works	15	11-Sep-21 A	30-Jun-22	-12
Other Existing Pumping Stations					
Z2T-152	Demolition of Return Activated Sludge Screw Pumps PS (16) & Chamber (33)	48	24-Sep-22	21-Nov-22	-57
Z2T-154	Demolition of Flow Measurement Chamber (34) & SSD Chamber (32)	48	24-Sep-22	21-Nov-22	-57
Z2T-154B	Demolition of Settled Sewage Overflow Chamber (31)	25	07-Jul-22	04-Aug-22	10
Mainstream Bio-Reactor & Auxiliary Facility (MBR and AF)					
MBR and AF Structure					
MBR - ELS Excavation & Demolition stage 1					
MBRAF-1010	MBR - Pipe Pile Install (approx. 391m, 9,390m2 @ 120m2/d) After Advance works (zone 2A)	58	21-Jul-22	27-Sep-22	-35
MBRAF-1460	MBR - Monitoring Installation	18	28-Sep-22	20-Oct-22	-28
MBRAF-1500	MBR - Decommissining & Demolition of PST 4	31	25-Jul-22*	29-Aug-22	-11
MBRAF-1540	MBR - Backfilling, advance coring for king post installation & wells installation	25	15-Jun-22 A	23-Jul-22	-35
MBRAF-1550	MBR - King post installation at AT footprint	30	25-Jul-22	27-Aug-22	-35
Tertriary Treatment System (TTS)					
Foundation and ELS					
EBS-2135	Egrets Breeding Season 2022	184	01-Mar-22 A	01-Sep-22*	-3
TTS-1000	TTS - Site Clearance	15	11-May-22 A	14-Jul-22	-37
TTS-1010	TTS - Sheet Piles Install (4,639m2 @120m2/d)	52	12-Aug-22	14-Oct-22	-61
TTS-1230	TTS - Monitoring Installation and Pumping Test	21	24-Sep-22	20-Oct-22	-61
Zone 3 Construction					
Stage 1					
Stage 1 - Advance Works					
Zone 3A (at SHT)					
Relocation of Heater Room (Location C)					
Z3A-000550	Relocation and T&C (ATAL)	24	30-Jun-22 A	23-Jul-22	-166
Digested Sludge Pumping Station (Location F)					
Z3B-330	T&C Works (ATAL)	8	30-Jun-22	09-Jul-22	1663
Pipe Connection					
Z3A-000370	240m3 Temp SHT Completion (Location B)	0		20-Jun-22 A	
Z3A-000390	Digested Sludge Pumping Station Completion (Location F)	0		09-Jul-22	1663
Z3A-000400	Temp. Water Heater House Completion (Location C)	0		23-Jul-22	-130
Z3A-000410	Completion of Zone 3A Diversion	0		22-Aug-22	1631
Sludge/Supernatant DI Pipe					
Z3A-000360	Connection between SDT and Temp. SHT & SDB	5	11-Jul-22	15-Jul-22	1663
Gas Pipe - SS316L					
DN300 from Gas Holders to Compressor House					
Z3A-000380	Connection at Gas Holders	10	31-May-22 A	17-Jun-22 A	
Z3A-000420	Connection at Compressor House	5	18-Jun-22 A	24-Jun-22 A	
DN300 from SDT, Compressor House to Gas Holders					
Z3A-000450	Connection at Gas Holders	10	05-May-22 A	24-Jun-22 A	
Z3A-000460	Gas Purging of SDT No.2 (YLEPP)	21	05-May-22 A	15-Jun-22 A	
Z3A-000470	Connection at SDT No.2,3 & 4	1	15-Jun-22 A	18-Jun-22 A	
Z3A-000480	Gas Purging of SDT No.1 (YLEPP)	21	04-Jun-22 A	29-Jun-22 A	
Z3A-000490	Connection at SDT No.1	1	30-Jun-22 A	30-Jun-22 A	
DN200 from Gas Holder to Temp. Water Heater House					
Z3A-000440	Connection at Gas Holders	10	25-May-22 A	24-Jun-22 A	
Hotwater DI Pipe					
Z3A-000500	Connection between Compressor House and Temp. Water Heater House	2	29-Jun-22 A	30-Jun-22 A	
Zone 3B (at STB)					
Gravity Thickening Tank (Location A)					
Z3B-000110	T&C Works (North & South Tank) (ATAL)	22	15-Jun-22 A	13-Jul-22	-132
Z3B-000260	Temp. Gravity Thickening Tank (Location A) Completion	0		13-Jul-22	-132
Temporary Primary Sludge Pumping Station (Location D)					



Activity ID	Activity Name	Orig Dur	Early Start	Early Finish	Total Float
Z3A-290	Civil and Structural Works Construction	27	25-Mar-22 A	16-Jul-22	-158
Z3A-300	E&M Installation (ATAL)	14	12-Jul-22	27-Jul-22	-158
Z3A-310	T&C Works (ATAL)	14	28-Jul-22	12-Aug-22	-158
Z3A-430	Temp. Primary Sludge Pumping Station (Location D) Completion	0		12-Aug-22	-158
Temporary Thickened Sludge / Supernatant Pumping Station (Location E1)					
Z3B-000150	E&M Works (ATAL) & T&C (ATAL)	38	02-Jul-22	15-Aug-22	-160
Z3B-000270	Temp. Thickening Sludge/Supernatant Pumping Station (Location E1) Completion	0		15-Aug-22	-160
Z3B-000450	Civil and Structural Works Construction	20	19-Jun-22 A	12-Jul-22	-160
Relocation of Ferrie Chloride (FeCl3) Dosing System & LV Switchboard (Location E2)					
Z3B-000200	E&M Works (ATAL) & T&C Works (ATAL)	40	09-Jun-22 A	06-Aug-22	-153
Z3B-000280	FeCl3 Relocation (Location E2) Completion	0		06-Aug-22	-153
Pipe Laying					
Z3B-000240	Pipe Installation from CT to MH2 (Batch 1 - DN250 Supernatant)	20	18-Dec-21 A	12-Jul-22	-130
Z3B-000350	Pipe Installation from Location A to Location E (Batch 6 - DN250 Supernatant)	36	31-Dec-21 A	21-Jul-22	-139
Z3B-000360	Pipe Installation from Location A to Location E & SDT (Batch 7 - DN200 Sludge)	36	17-Jan-22 A	21-Jul-22	-139
Z3B-000370	Pipe Installation from Temp. Primary Sludge Pumping Station (Location D) to CT (Batch 7 - DN200 Sludge)	20	17-Jan-22 A	12-Jul-22	-131
Pipe Connection					
Z3B-000380	Connection at Temp. Thickened Sludge/ Supernatant Pumping Station (Location E1)	1	16-Aug-22	16-Aug-22	-160
Z3B-000390	Temp. Gravity Thickening Tank (Location A) Completion	0		13-Jul-22	-132
Z3B-000400	Temp. Primary Sludge Pumping Station (Location D) Completion	0		12-Aug-22	-158
Z3B-000410	Connection at Temp. Primary Sludge Pumping Station (Location D)	1	13-Aug-22	13-Aug-22	-158
Z3B-000420	FeCl3 System (Location E) Relocation Completion	0		06-Aug-22	-153
Z3B-000430	Temp. Thickened Sludge/ Supernatant Pumping Station (Location E1) Completion	0		15-Aug-22	-160
Z3B-000435	Completion of Zone 3B Diversion - time risk allowance	9	17-Aug-22	26-Aug-22	-160
Z3B-000440	Completion of Zone 3B Diversion	0		26-Aug-22	-160
Advance Works					
Z3S1A-3010	Completion of Stage 1 (Construction & E&M for Temporary facilities)	0		23-Jul-22	-130
Stage 1 Demolition Works					
SHT 3&4 Demolition Works below ground					
Z3A-000030	Demolition Works for Sludge Holding Tank No. 4 (below ground)	25	16-Jun-22 A	12-Jul-22	-126
Z3A-000140	Backfill to Ground Level	7	07-Jul-22	14-Jul-22	-173
UC Decommission Works					
Z3A-000110	Decommission Works for Existing Utilities Gallery	12	23-Aug-22	05-Sep-22	1631
Stage 2					
Stage 2 : New Sludge Thickening Building (STB)					
Stage 2 - Demolition Works					
ATALZ3S1-1050	Switching Duty from SDT No.1 & 2 to SDT No.1 & 3 (9) for STB Demolition and Utility Corridor Construction	23	30-Jun-22	27-Jul-22	-56
ATALZ3S1-2210	Switching Duty from SDT No.1 & 3 to SDT No. 3 & 4 (9) for STB Construction	15	25-Jul-22	10-Aug-22	-68
Z3S2-2030	Demolition of Existing Sludge Thickening House (8, Air Floatation Thickener)	35	26-Aug-22	08-Oct-22	-68
Z3S2-2040	Demolition of Consolidation Tank (7) C1 & C2	24	27-Aug-22	24-Sep-22	-53
Z3S2-2050	Submission of Demolition Plan for STB, Review by PM(28d), Resubmission(14d), Obtain Approval(7d)	49	15-Mar-22 A	30-Jul-22	-46
Z3S2-2310	Submission of Method Statement for demolition of STB, Review by PM(28d), Resubmission(14d), Obtain Approva	26	30-Jun-22	30-Jul-22	-46
Stage 2 : STB Pre-drilling Works					
Z3S1a.7-70	Complete Predrilling Works for STB	0		19-Sep-22	26
Z3S3-3480	Predrilling Works (2 nos. STB-PD7,9)	10	07-Sep-22	19-Sep-22	-34
Z3S3-3490	Environment GI (4 nos., 7d/no. , 2 rigs) & Submit RAP Report to EPD (30 days)	14	26-Sep-22	13-Oct-22	-60
Stage 2 : Existing Sludge Holding Tanks					
Z3S1a.7-60	Completion Connection to Temporary SHT & Dewatering House	0		23-Jul-22	-130
Z3S2-2010	Demolition of SHT 2 (10) superstructure	20	29-Aug-22	21-Sep-22	-160
Z3S2-2015	Demolition of SHT 1 (10)	26	23-Jun-22 A	19-Jul-22	-172
Z3S2.5-10	Demolition of Existing Water Heater House	25	25-Jul-22	22-Aug-22	-166
Stage 2 : Biogas Holder No. 1					
Z3BH-0995	Biogas Holder No. 1 - GI Works	21	16-May-22 A	13-Jul-22	-172
Z3BH-1000	Biogas Holder No. 1 - Band drain Installation for Ground Improvement	25	15-Jul-22	12-Aug-22	-173
Z3BH-1040	Biogas Holder No. 1 - Surcharge	18	25-Aug-22	15-Sep-22	-173
Z3BH-1050	Biogas Holder No. 1 - Consolidation test	70	16-Sep-22	08-Dec-22	-173
Z3BH-1060	Biogas Holder No. 1 - Band drain Installation for Ground Improvement @ SHT 1 and existing water heater house f	10	13-Aug-22	24-Aug-22	-173
Stage 2 : Utility Corridor Construction					
ATALZ3S1-2230	Switching Duty from SDT No.4 to No. 1 (9)	23	14-Sep-22	12-Oct-22	30
Stage 3					
Stage 3 : New Sludge Thickening Building (STB) (Continued)					
Stage 3 : STB - Driven H-pile					



Activity ID	Activity Name	Orig Dur	Early Start	Early Finish	Total Float
Z3S3-3500	STB - Driven H-pile Start	0	06-Jul-22		-68
Z3S3-3510	STB - Driven H-pile Zone P1 (23 nos., 1219m) @40m/day	31	06-Jul-22	10-Aug-22	-68
Z3S3-3520	STB - Driven H-pile Zone P2 (37 nos., 1961m) @60m/day	33	14-Sep-22	24-Oct-22	-68
Z3S3-3540	STB - Driven H-pile Zone P3 (12 nos., 636m) @20m/day	32	27-Aug-22	06-Oct-22	-61
Z3S3-3550	STB - Driven H-pile Zone P4A&B (21 nos., 1113m) @40m/day	28	11-Aug-22	13-Sep-22	-68
Stage 3 : STB Foundation and ELS					
Z3S3-3010	STB - Site Setup & Mobilization	9	15-Jun-22 A	05-Jul-22	-68
Stage 4					
Stage 4 : New Sludge Digester No. 1-3 (Continued)					
Stage 4 : SD 1-3 Foundation and ELS					
Z3S3-2045	Backfilling after SHT 4 demolition	10	13-Jul-22	23-Jul-22	-126
Z3S3-2050	Sludge Digester No. 1-3 - Sheet Piles Install Portion 1 (SHT 4 area)	16	25-Jul-22	11-Aug-22	-126
Z3S3-2060	Sludge Digester No. 1-3 - Sheet Piles Install Portion 2 (3,128m2 @90m2/d)	36	22-Sep-22	04-Nov-22	-160
Stage 7					
Stage 7: New Sludge Digester No. 4					
Stage 7 : SD 4 Foundation and ELS Works					
Z3S8SD-2000	Sludge Digester No. 4 - Pre-drill (1 no. SD-BH6)	14	16-May-22 A	14-Jun-22 A	
Stage 7 : New Sludge Digester No. 5 and 6					
Stage 7 : SD 5,6 Foundation and ELS Works					
Z3S8SD-1010	Sludge Digester No. 5-6 - Pre-drill (3 nos. SD-BH1,SD-BH3,SD-BH4)	48	13-Sep-22	09-Nov-22	769

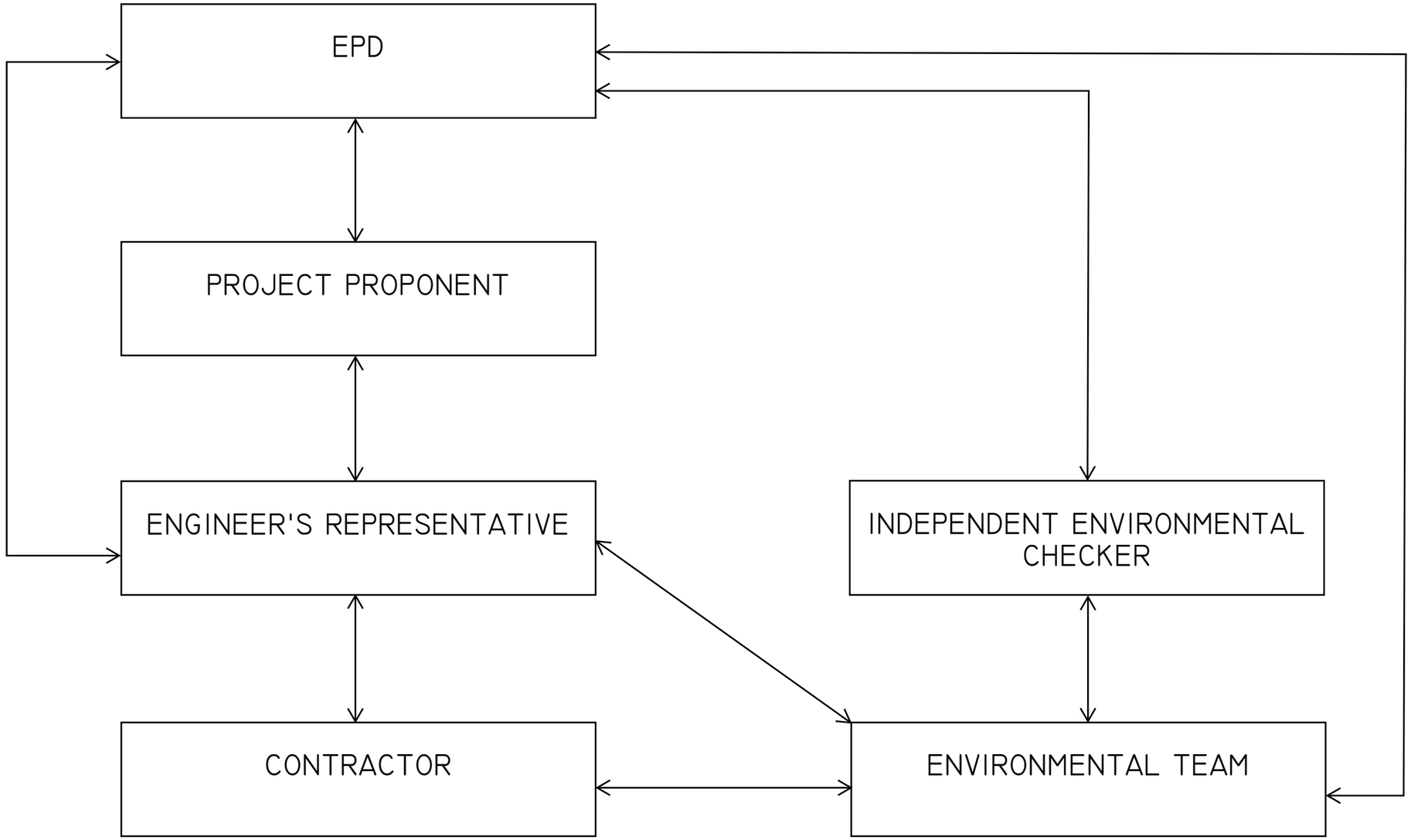


Appendix B

Project Organization Chart

LEGEND:

LINE OF COMMUNICATION



Project Management Initials: Designer: Checked: Approved: ISO A1 594mm x 841mm

Plot File by: Chanws 5/28/2018
PATH: p:\projects\60505476\drawing\report\EM&A\EM&A_702.dgn

AECOM

PROJECT
項目

YUEN LONG EFFLUENT POLISHING PLANT - INVESTIGATION, DESIGN AND CONSTRUCTION

CLIENT
業主

渠務署
Drainage Services Department

CONSULTANT
工程顧問公司

AECOM Asia Company Ltd.
www.aecom.com

SUB-CONSULTANTS
分判工程顧問公司

ISSUE/REVISION
修訂

I/R 修訂	DATE 日期	DESCRIPTION 內容摘要	CHK. 核對

STATUS
階段

SCALE
比例

A3 1 : 40000

DIMENSION UNIT
尺寸單位

METRES

KEY PLAN
索引圖

PROJECT NO.
項目編號

60505476

CONTRACT NO.
合約編號

CE 3/2015 (DS)

SHEET TITLE
圖紙名稱

PROJECT ORGANISATION

SHEET NUMBER
圖紙編號

Appendix C

Action and Limit Levels

Action and Limit Levels for Air Quality

Parameters	Action Level	Limit Level
1-hour TSP Level in $\mu g/m^3$	[1]For baseline level ≤ 384 $\mu g/m^3$, Action level = (baseline level * 1.3 + Limit level)/2; For baseline level > 384 $\mu g/m^3$, Action level = Limit level	500 $\mu g/m^3$

Notes:

1. The Action Level for 1-hour TSP Level:

a) AM1 = (63*1.3 + 500) / 2 = 291 $\mu g/m^3$;

b) AM2 = (70*1.3 + 500) / 2 = 296 $\mu g/m^3$.

Action and Limit Levels for Construction Noise

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

Notes:

1. If works are to be carried out during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed.
2. Correction of +3 dB(A) shall be made to the free field measurements.

Action and Limit Levels for Water Quality

Parameters	Action Levels	Limit Levels
Construction Phase Water Quality Monitoring		
DO in mg/L (Surface, Middle & Bottom) [2]	Surface & Middle 5%-ile of baseline data for surface and middle layer. Bottom 5%-ile of baseline data for bottom layer.	Surface & Middle 4 mg/L or 1%-ile of baseline data for surface and middle layer. Bottom 2 mg/L or 1%-ile of baseline data for bottom layer.
SS in mg/L (depth-averaged [1]) [3]	95%-ile of baseline data or 120% of upstream control station's SS recorded on the same day	99%-ile of baseline data or 130% of upstream control station's SS recorded on the same day
Turbidity in NTU (depth-averaged [1]) [3]	95%-ile of baseline data or 120% of upstream control station's turbidity recorded on the same day	99%-ile of baseline data or 130% of upstream control station's turbidity recorded on the same day

Notes:

1. "Depth-averaged" is calculated by taking the arithmetic means of reading of all three depths;
2. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits;
3. For SS and turbidity, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

Action and Limit Levels for Ecology

Active Ardeid Night Roost Survey

As there are no specific guidelines on noise thresholds for roosting ardeids, the Action and Limit levels specified in below table were based on study conducted on exploring behavioural responses of shorebirds to impulsive noise (Wright et al. 2010).

Time Period	Action Level	Limit Level
after 17:30 during dry season after 18:00 during wet season	65.5 dB(A)[1]	72.2 dB(A)[2]

Notes:

1. Behavioural response of some kind more likely to occur
2. Flight with abandonment of the site becomes the most likely outcome of the disturbance

Ecological Monitoring of Birds

Method	Parameters	Action Level[3]	Limit Level[3]
Transect	Abundance of all avifauna species (including but not only limited to overwintering waterbirds) in the community	Significant decline[1,2] in any of these parameters during the current monitoring month relative to the corresponding month during the baseline survey.	Significant decline in any of these parameters for three consecutive months.
	Species diversity of all avifauna species (including but not only limited to overwintering waterbirds) in the community		
	Abundance of species with conservation importance only		
	Species diversity of species with conservation importance only		
Point Count	Abundance of all avifauna species (including but not only limited to overwintering waterbirds) in the community		
	Species diversity of all avifauna species (including but not only limited to overwintering waterbirds) in the community		
	Abundance of species with conservation importance only		
	Species diversity of species with conservation importance only		

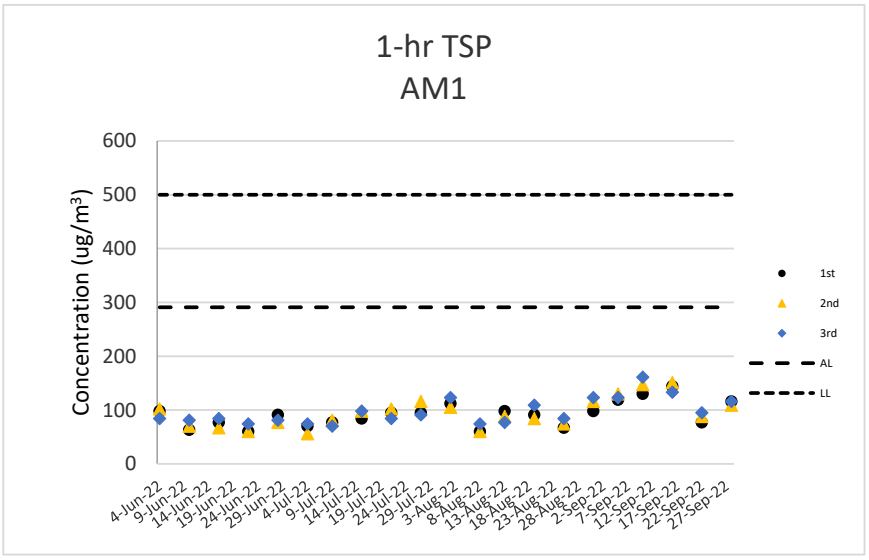
Notes:

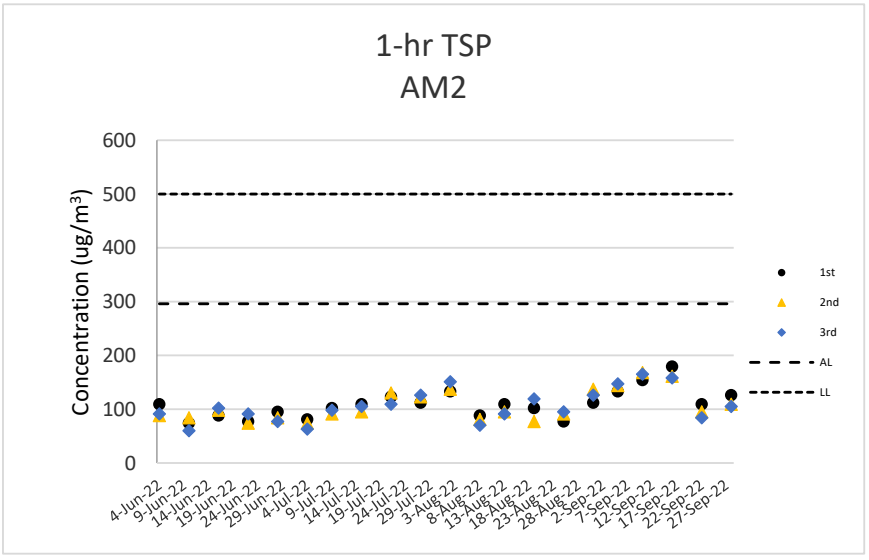
1. Significant decline in abundance will be determined using two-tailed t-test, $\alpha = 0.05$.
2. Significant decline in species diversity will be determined using the Hutcheson t-test, two tailed.
3. Response will be triggered if any of the above level is reached for each parameter.

Appendix D

Graphical Presentation of Monitoring Data

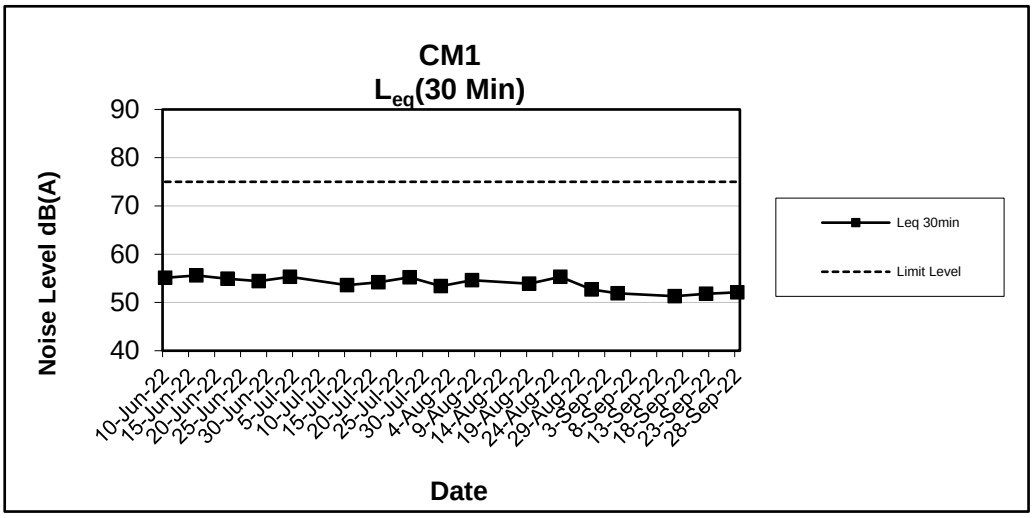
Air Quality Monitoring Results

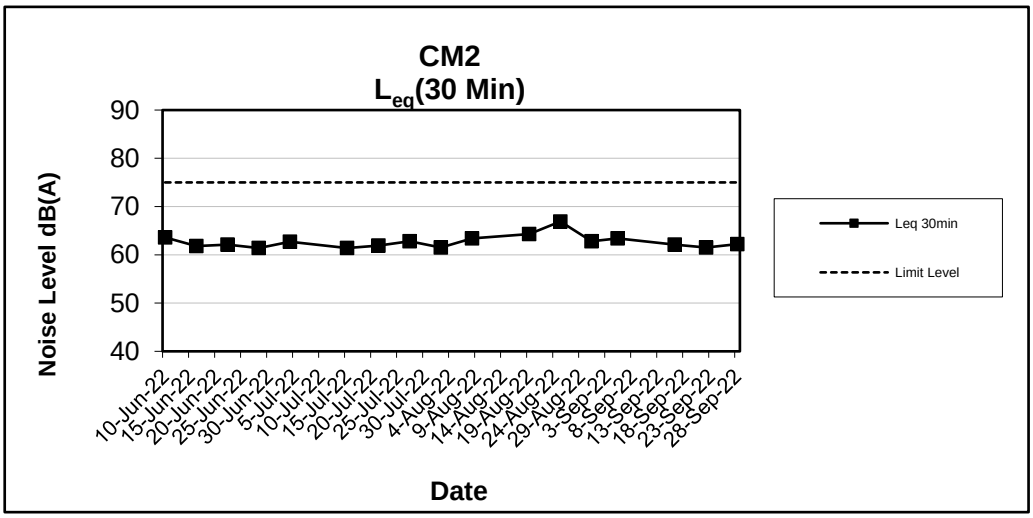


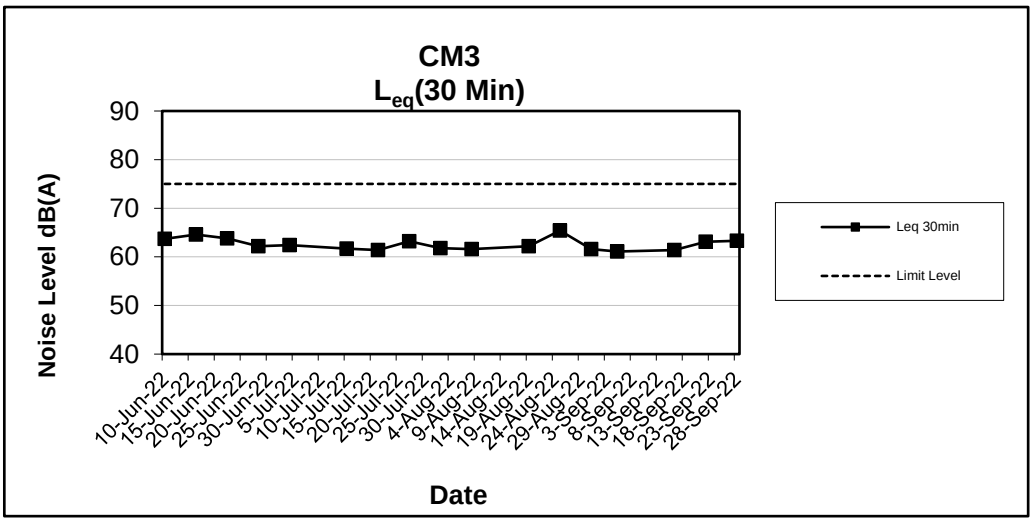


Air Quality Monitoring Results

Noise Monitoring Results

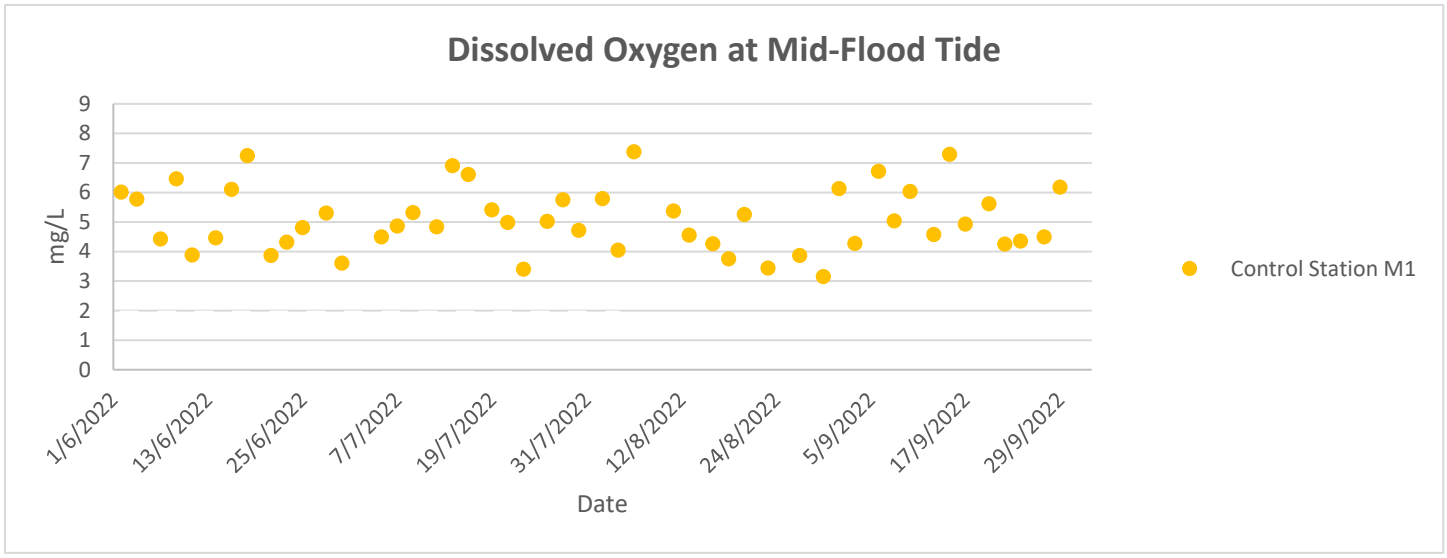


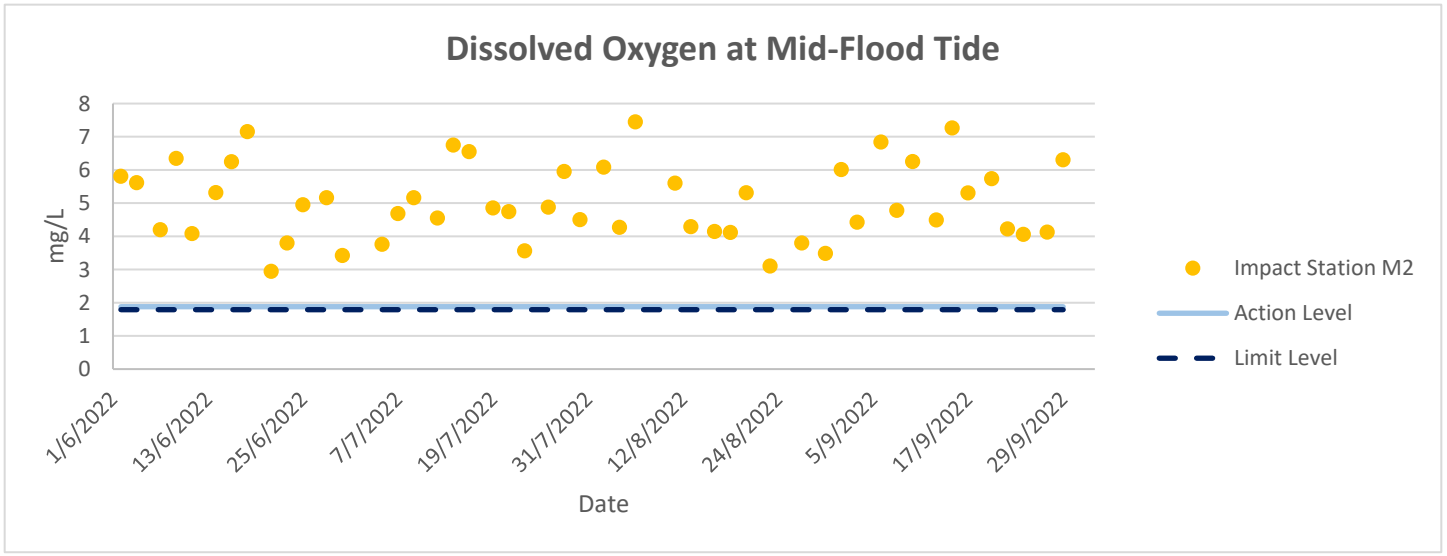


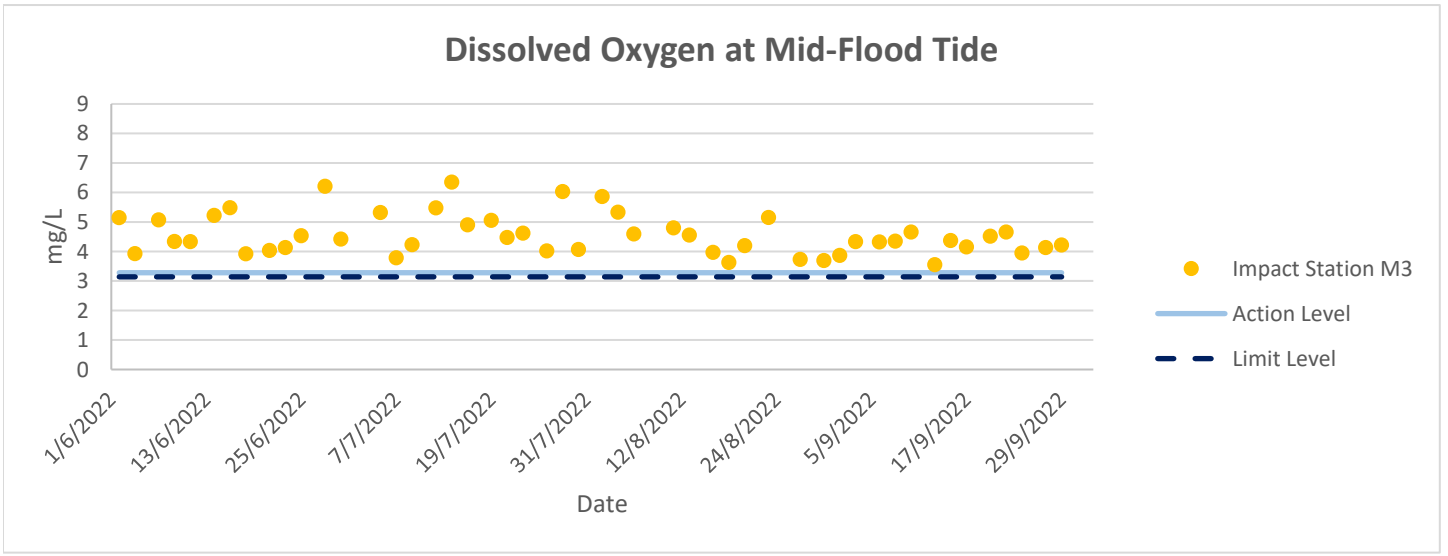


Noise Monitoring Results

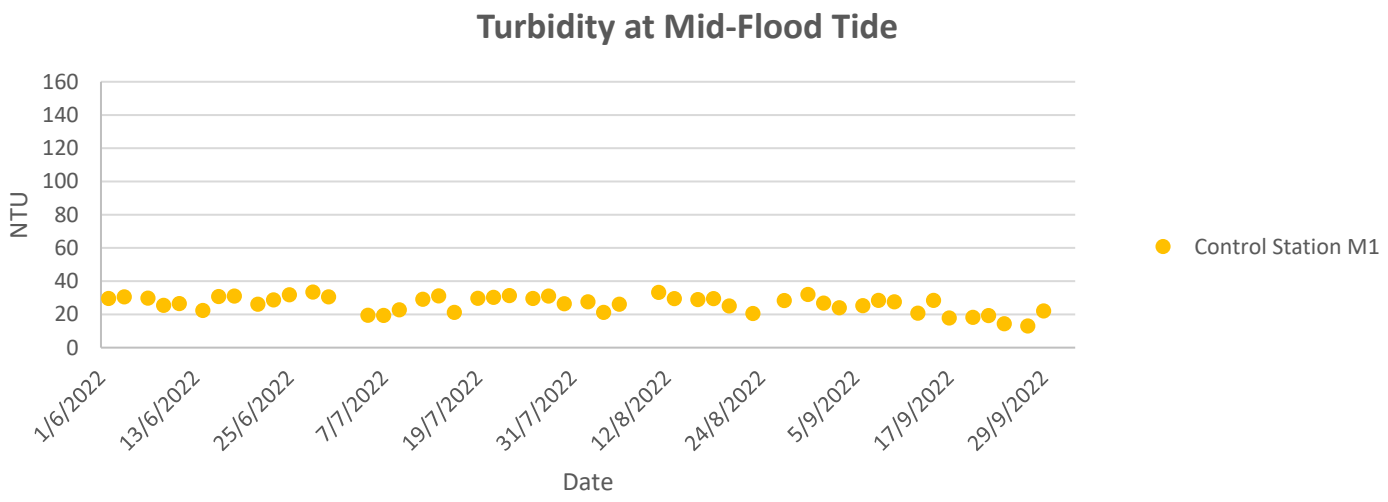
Water Quality Monitoring Results

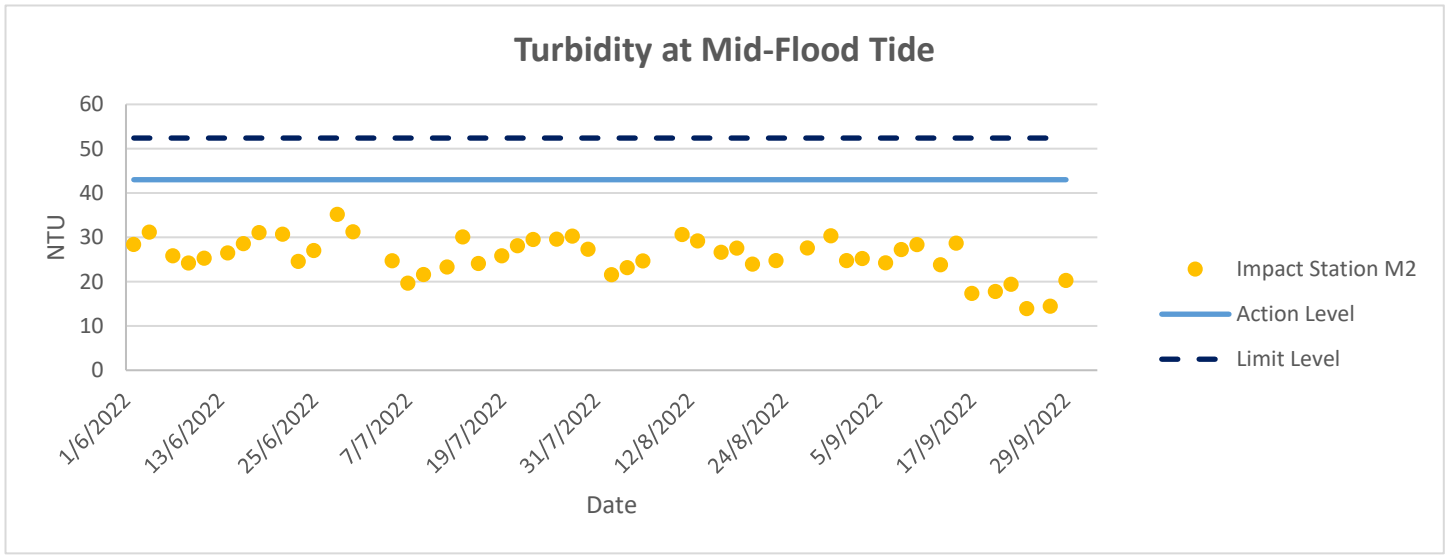


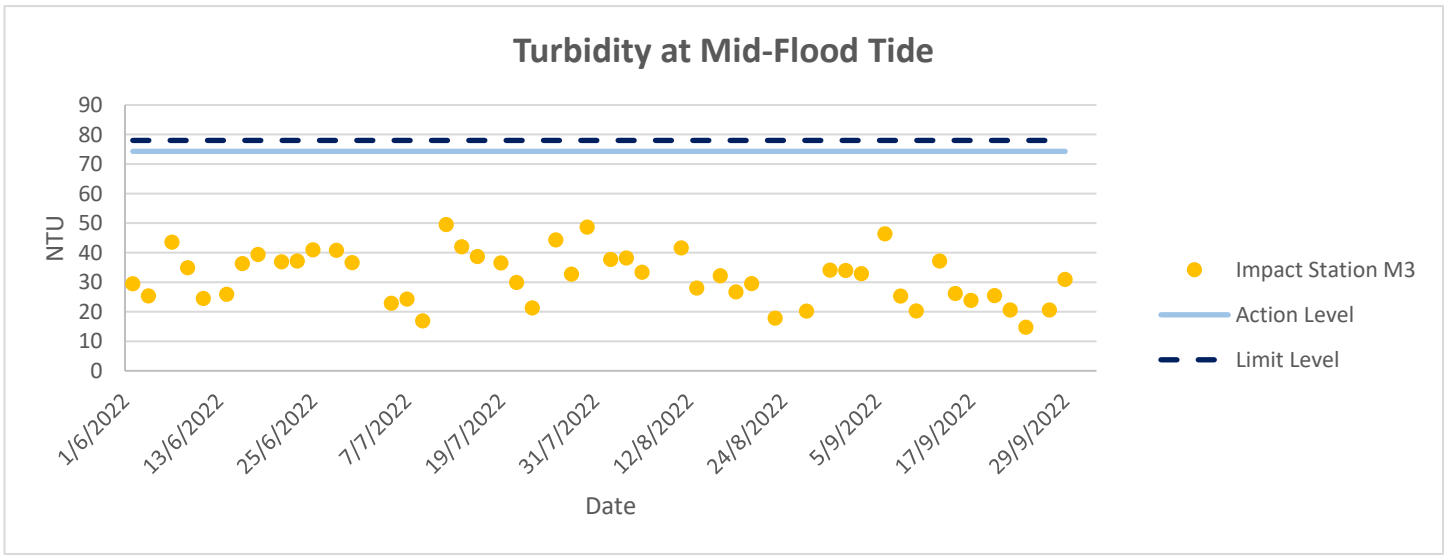




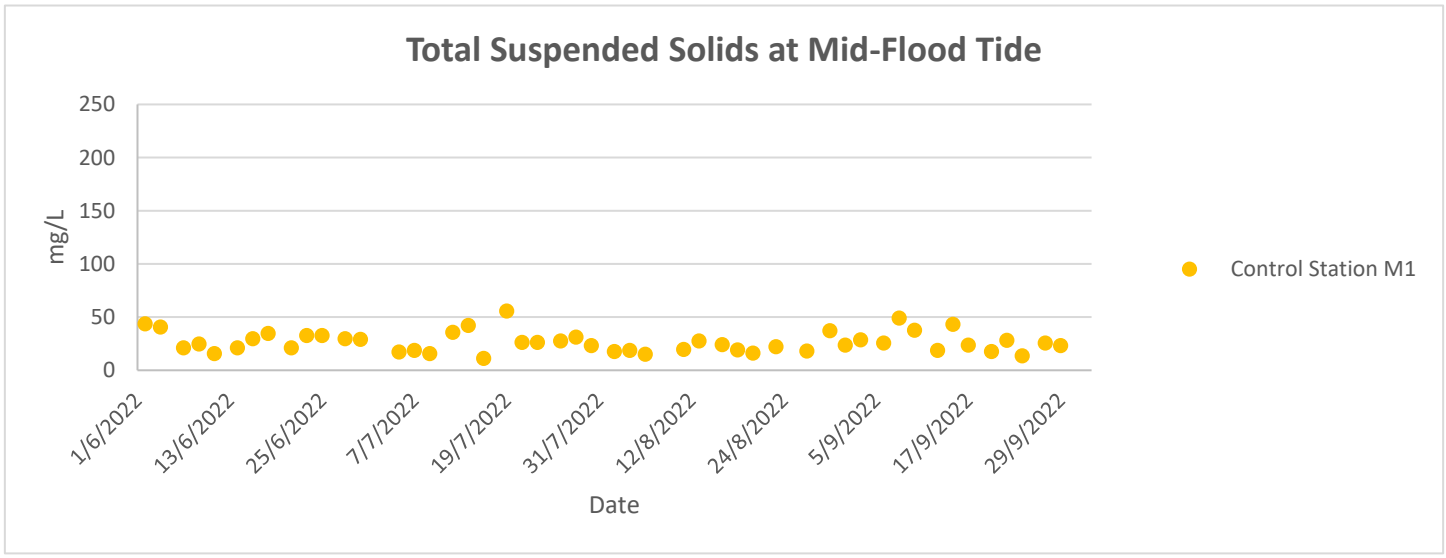
Water Quality Monitoring Results

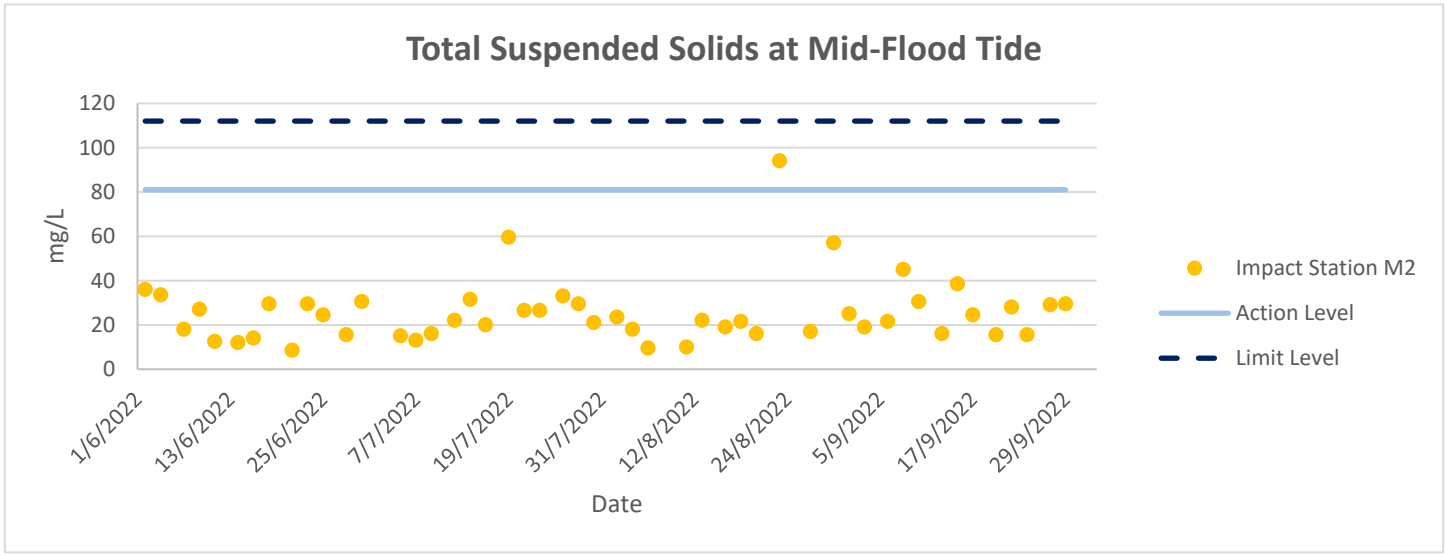


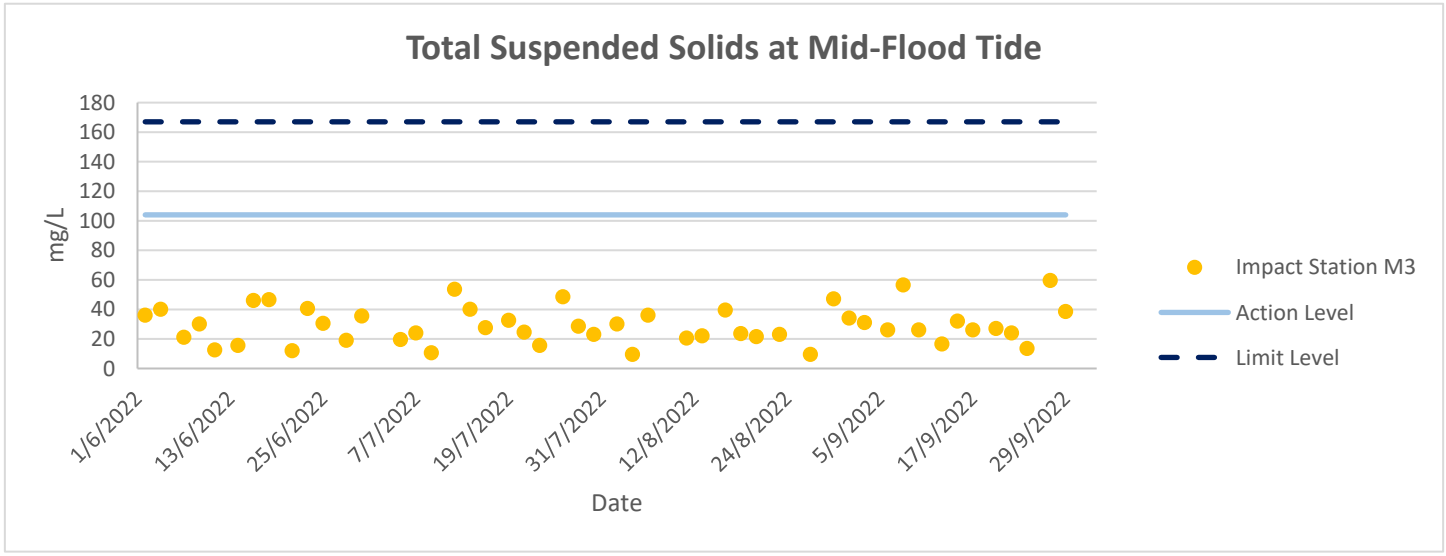




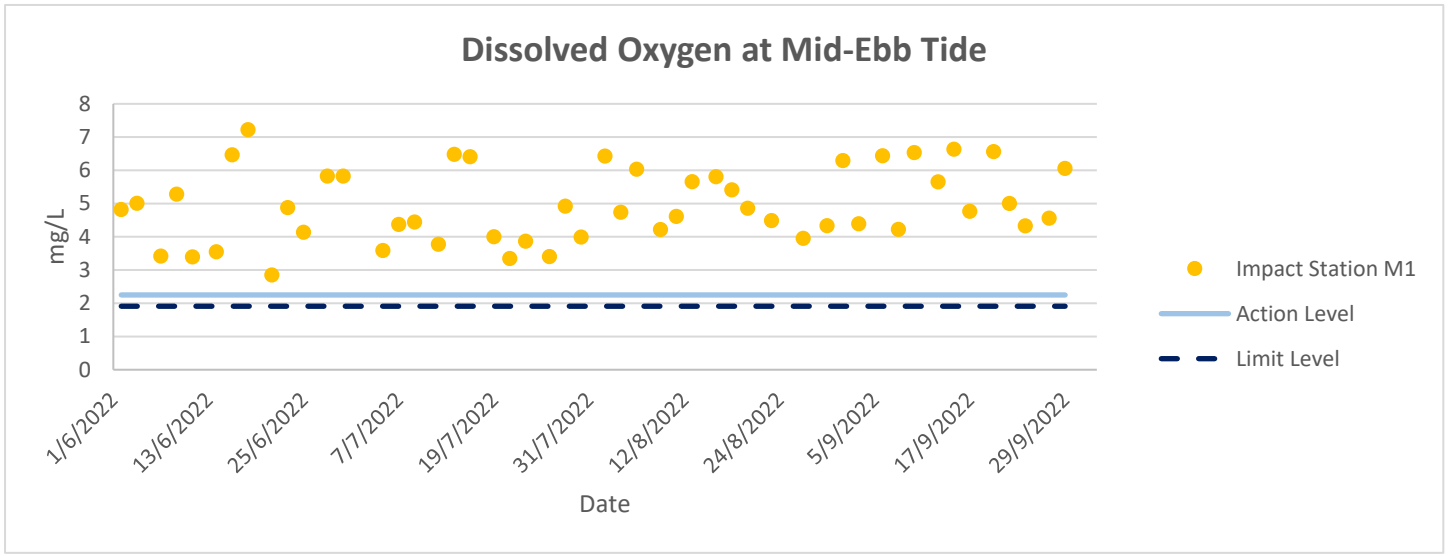
Water Quality Monitoring Results

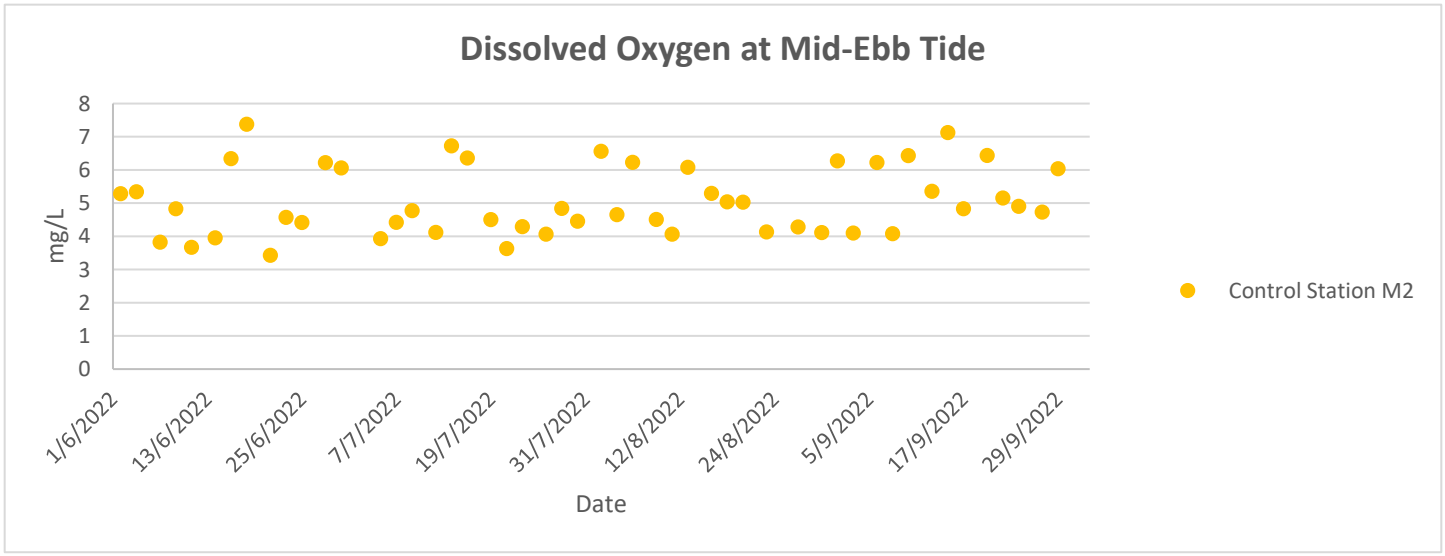


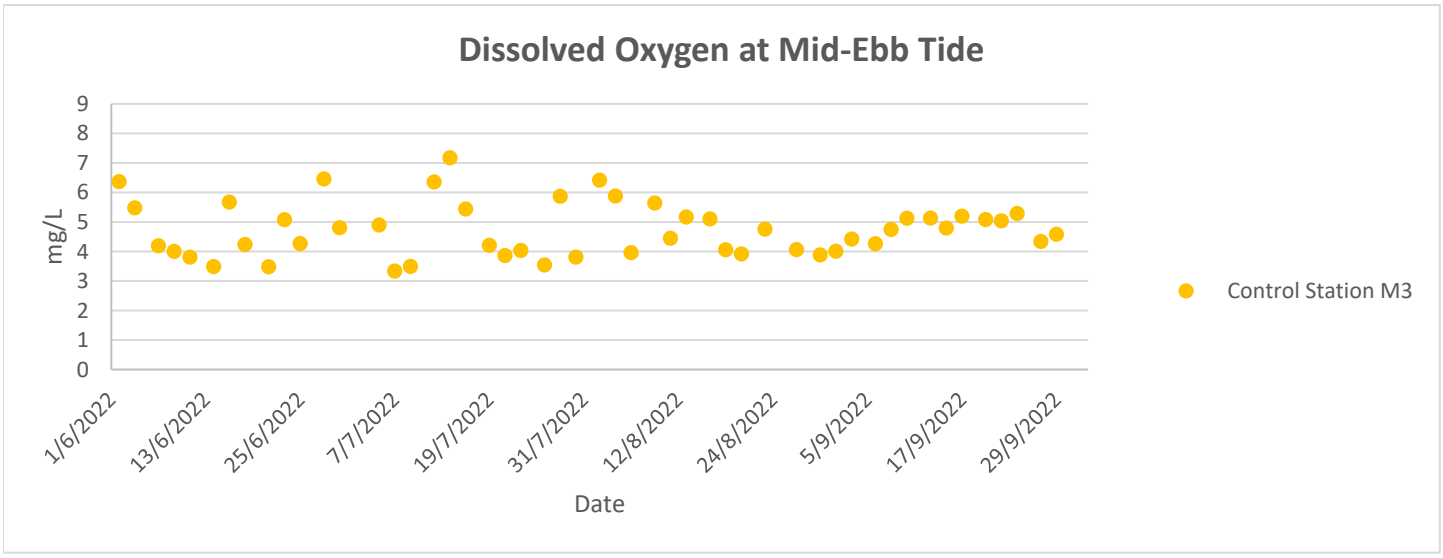




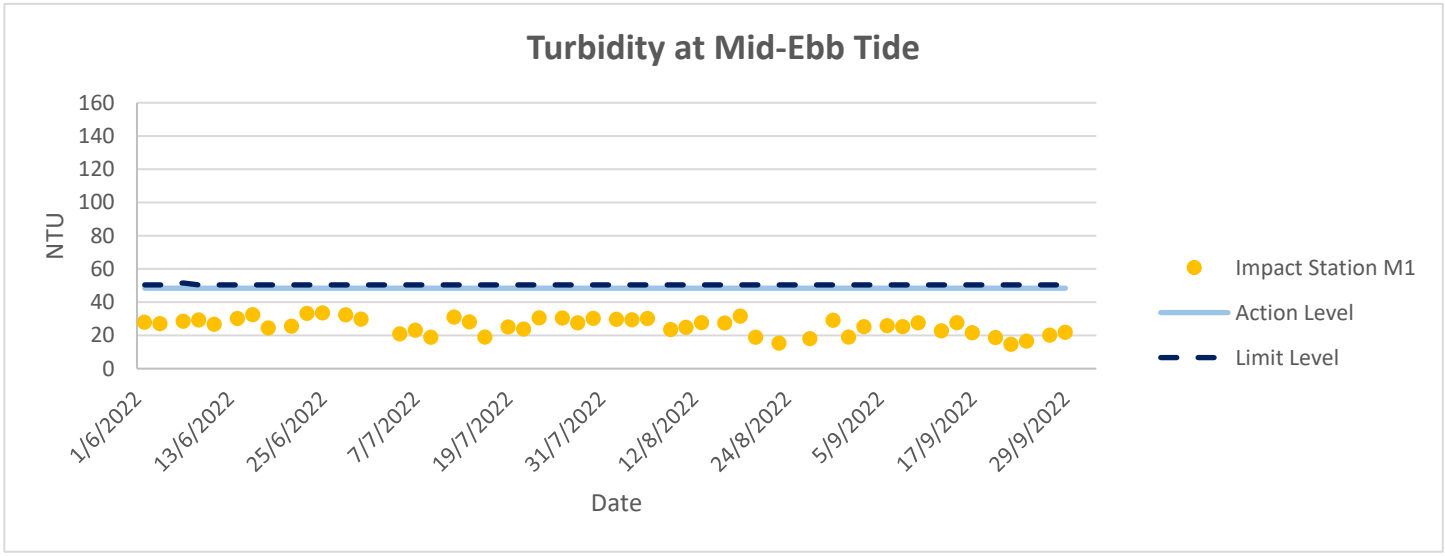
Water Quality Monitoring Results

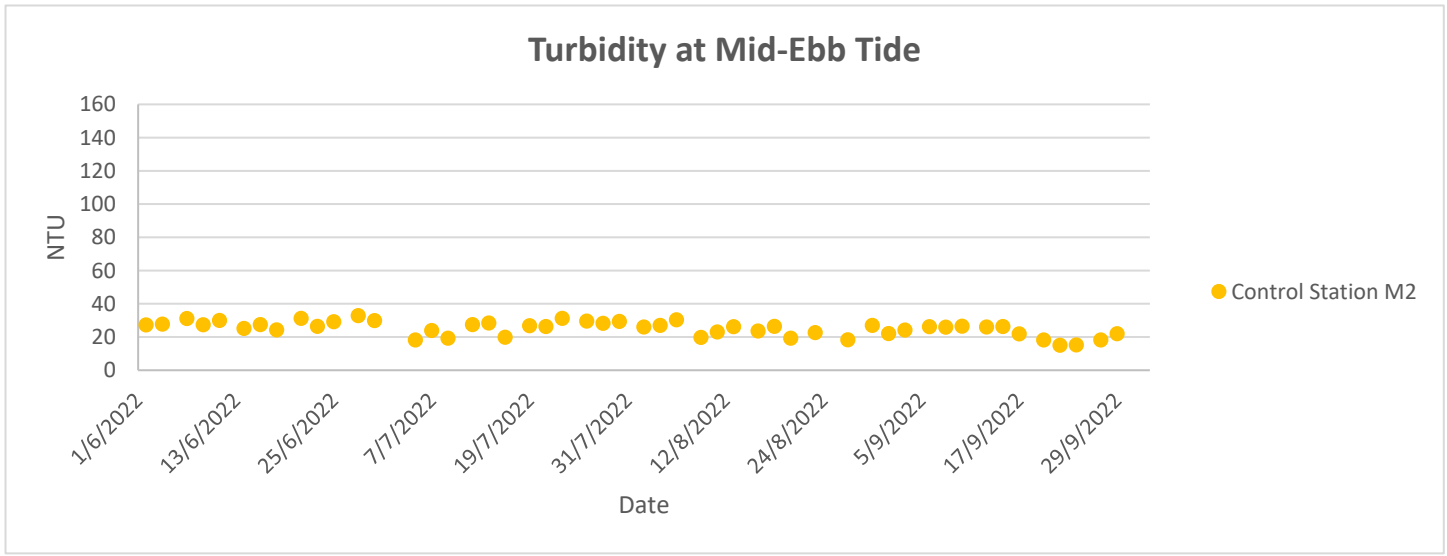


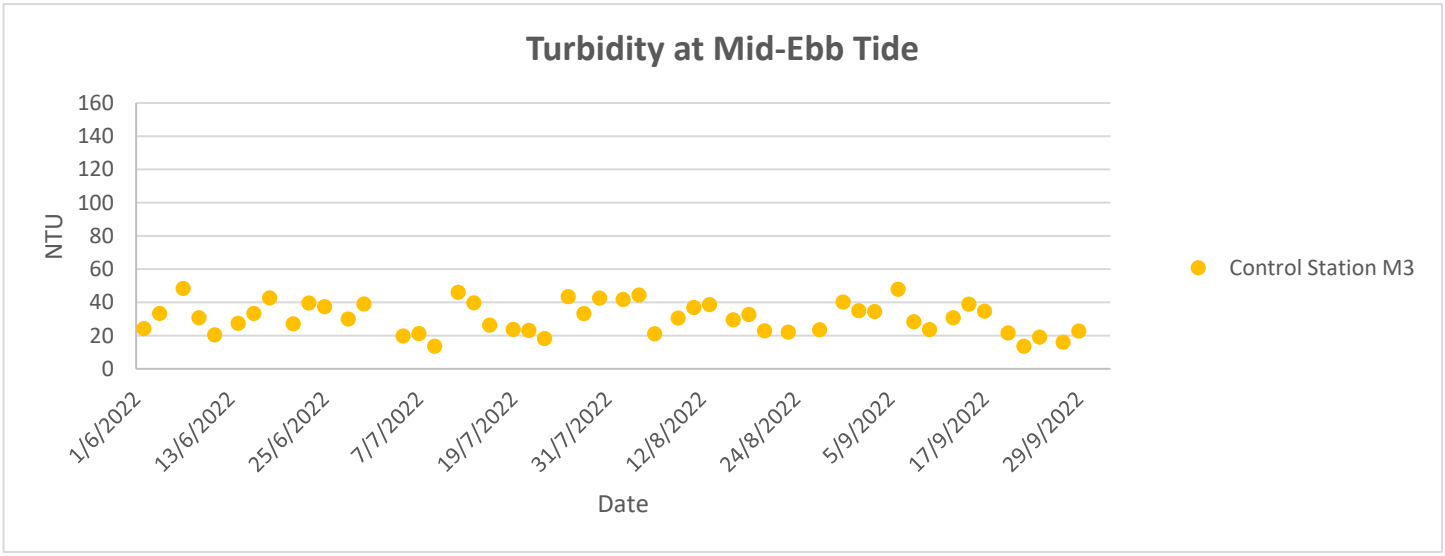




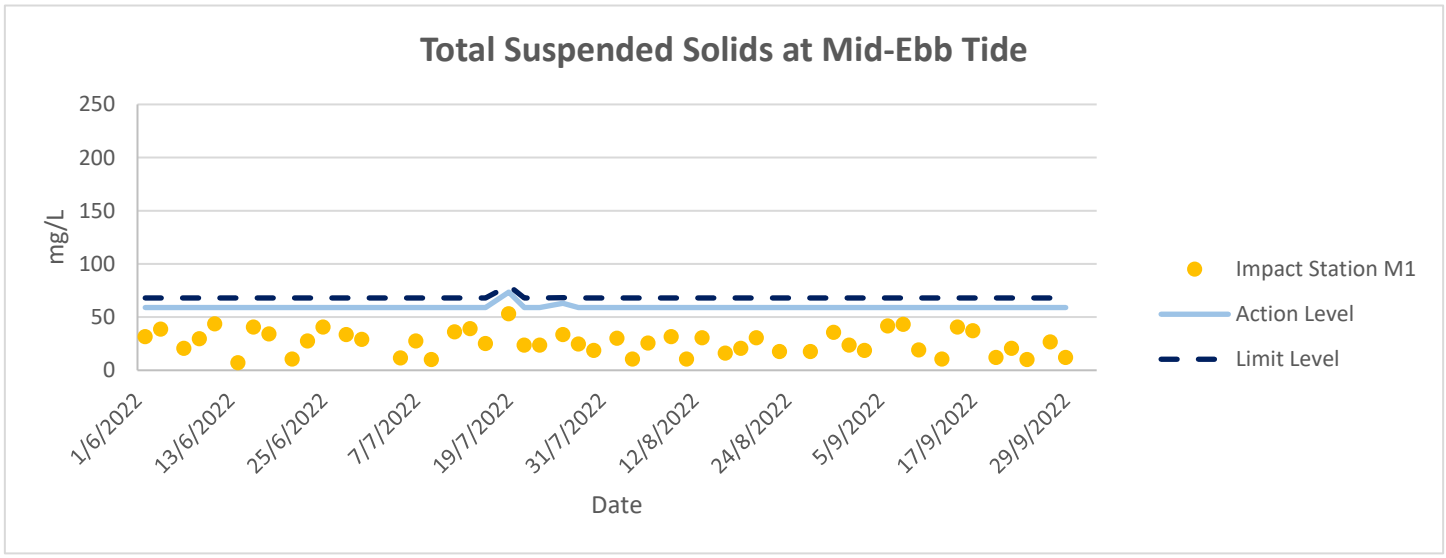
Water Quality Monitoring Results

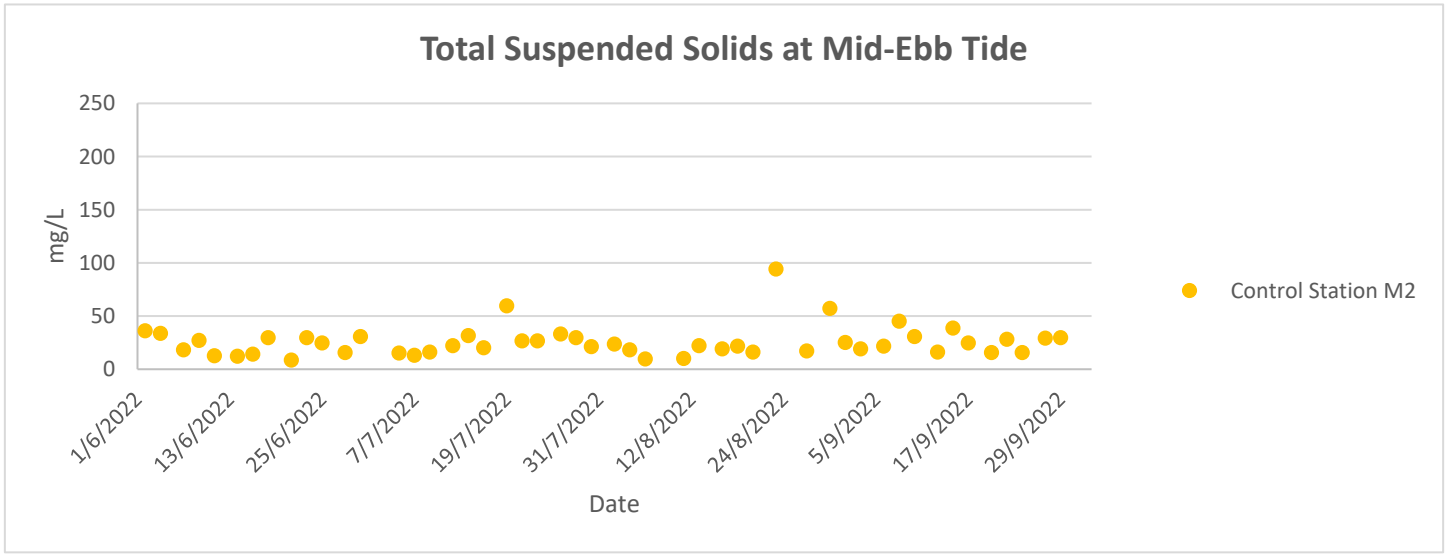


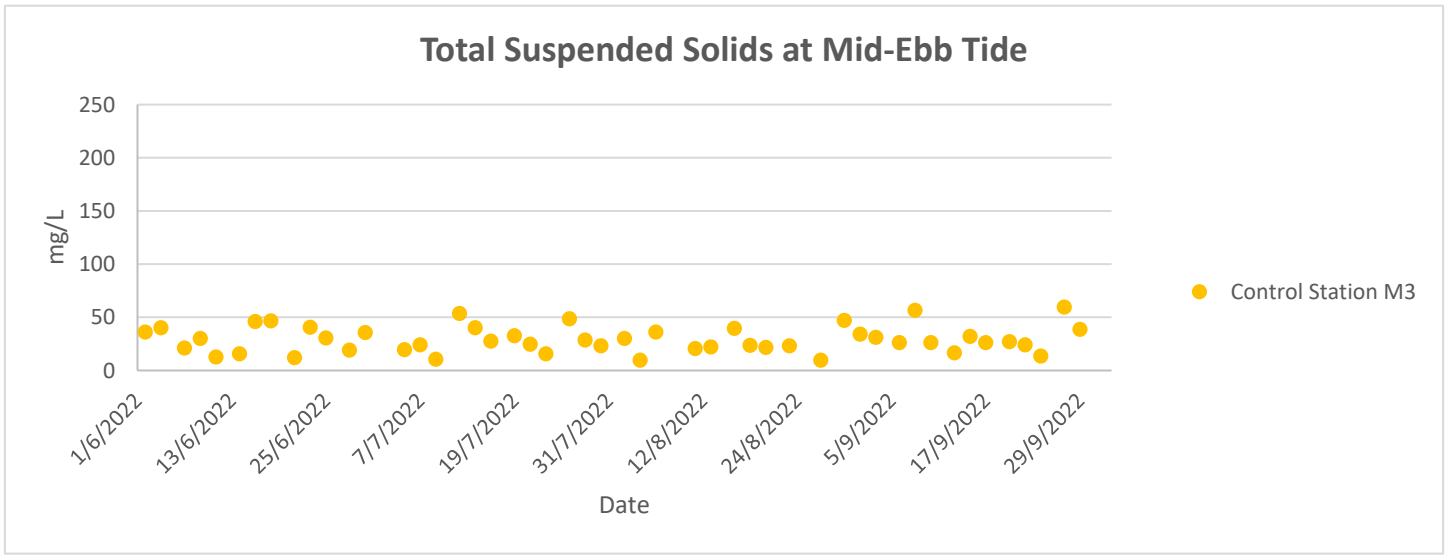




Water Quality Monitoring Results





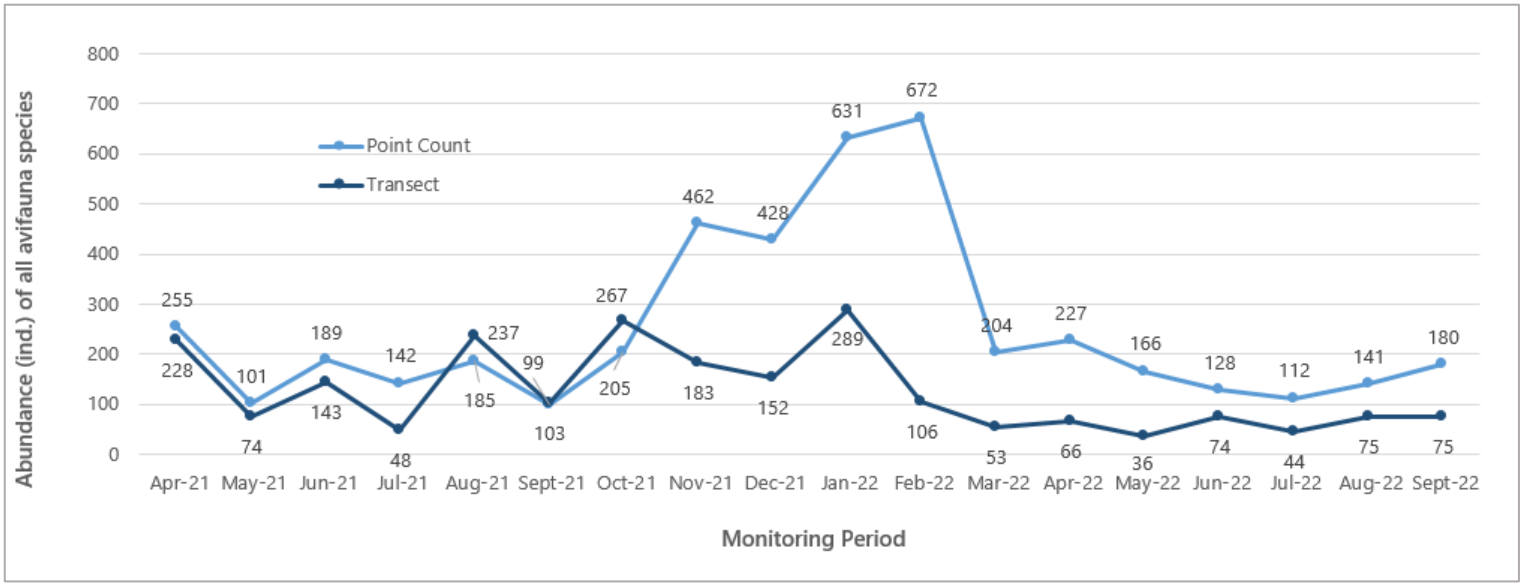


Water Quality Monitoring Results

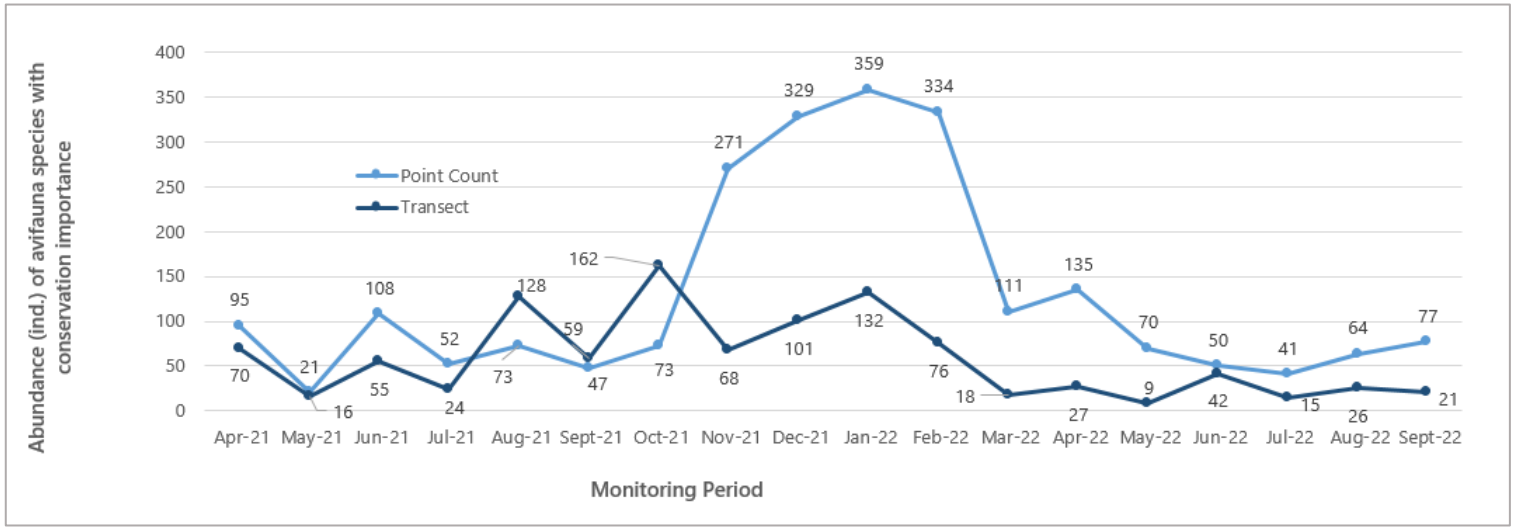
Ecology Monitoring Results

Ecology Monitoring Results

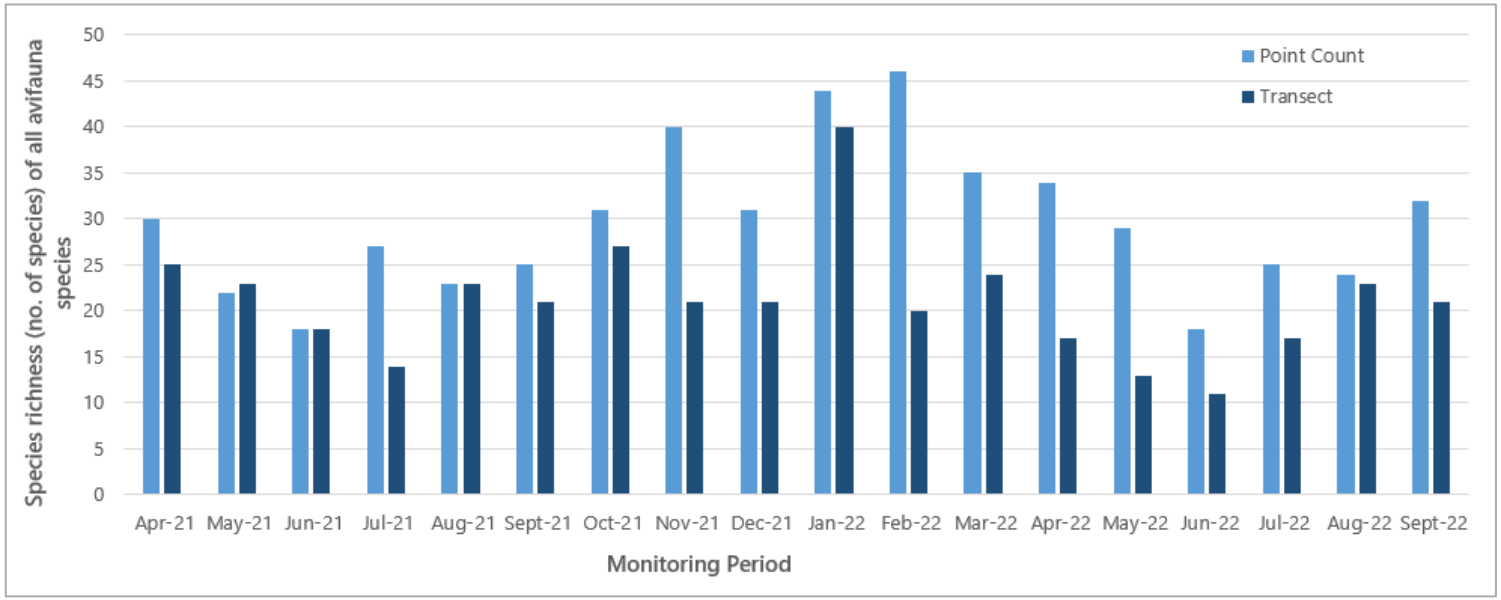
Abundance of all avifauna species throughout the monitoring period



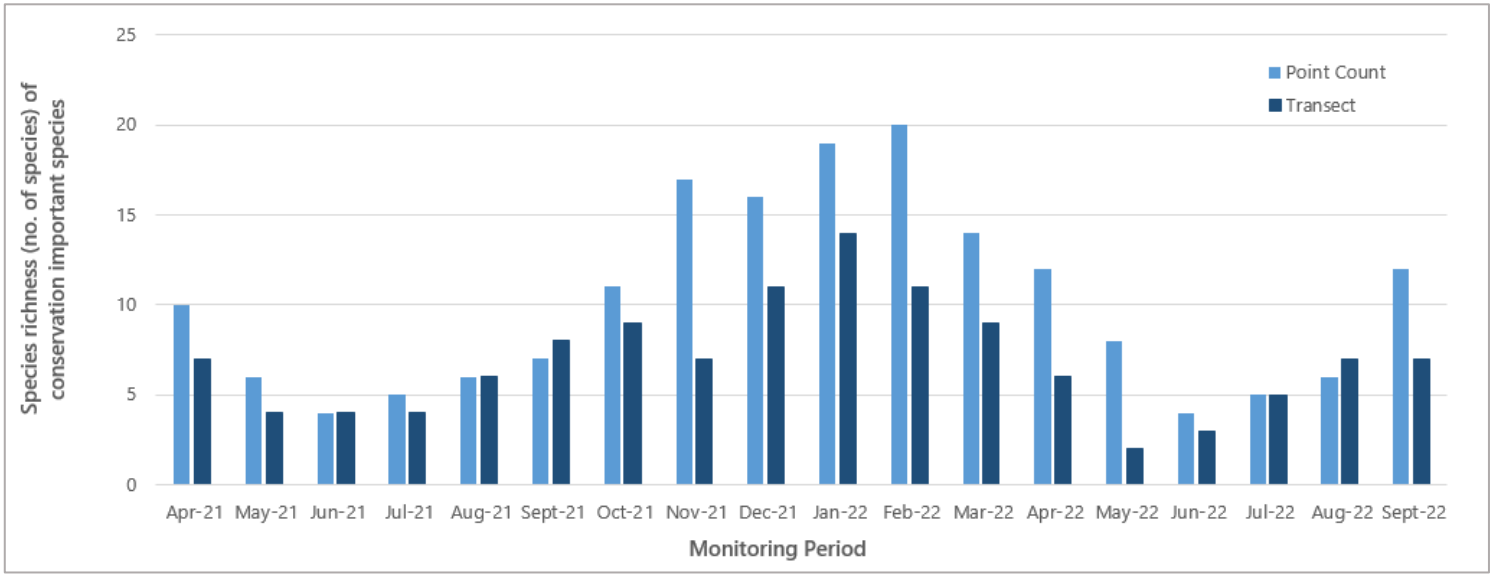
Abundance of avifauna species with conservation importance throughout the monitoring period



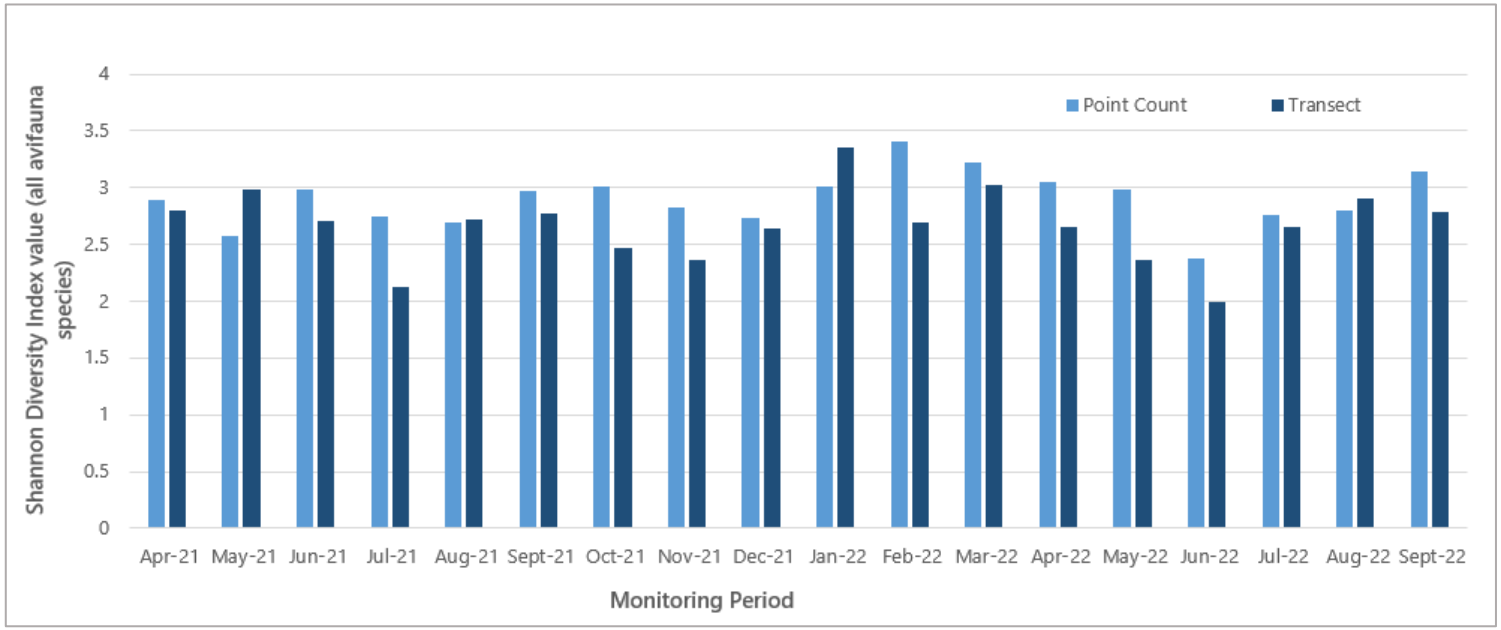
Species richness of all avifauna species throughout the monitoring period



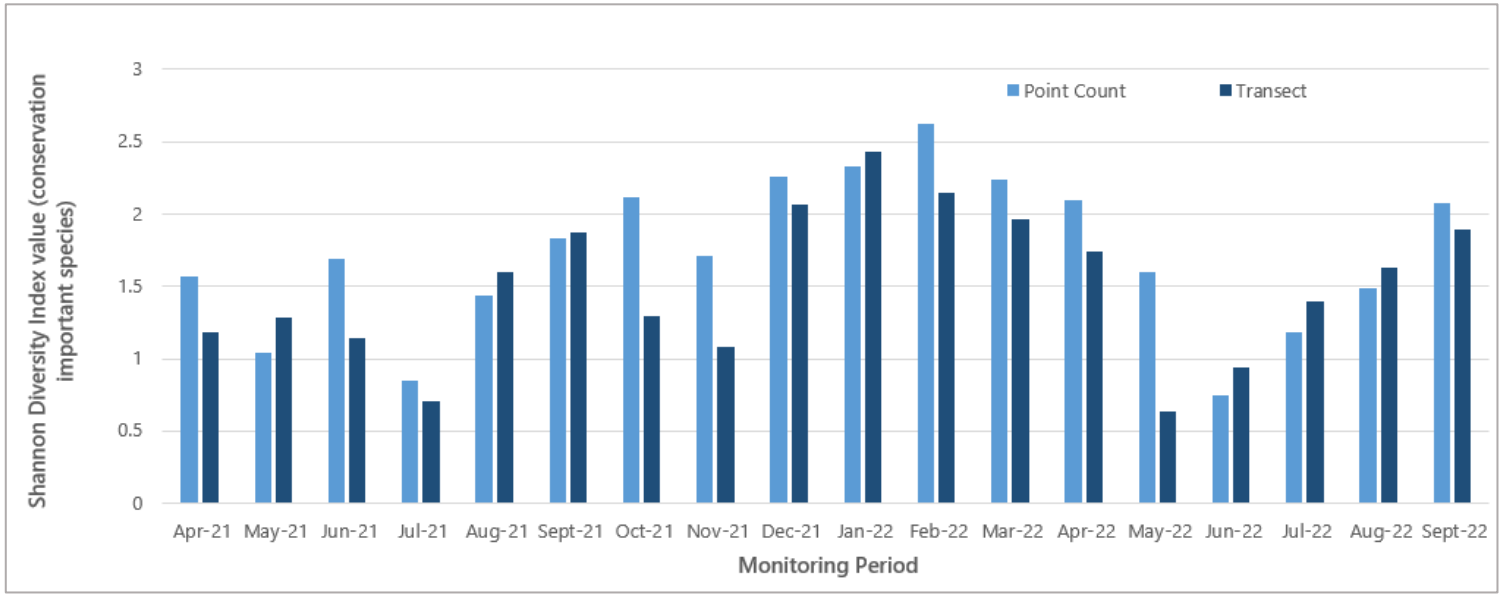
Species richness of avifauna species with conservation importance throughout the monitoring period



Shannon Diversity Index values of all avifauna species throughout the monitoring period



Shannon Diversity Index values of avifauna species with conservation importance throughout the monitoring period



Appendix E

Event and Action Plan

Event and Action Plan for Air Quality (Construction Dust)

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 Contractor, IEC and ER; 3. Repeat measurement to confirm finding; and 4. Increase monitoring frequency to daily.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; and 3. Review and advise the ET and ER on the effectiveness of the proposed remedial measures.	1. Notify Contractor.	1. Identify source(s), investigate the causes of exceedance and propose remedial measures; 2. Implement remedial measures; and 3. Amend working methods agreed with the ER as appropriate.
Action level being exceeded by two or more consecutive sampling	1. Identify source; 2. Inform Contractor, IEC and ER; 3. Advise the Contractor and 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, arrange meeting with Contractor, IEC and ER; and 8. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET, ER and Contractor on possible remedial measures; 4. Advise the ET and ER on the effectiveness of the proposed remedial measures; and 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. Identify source and investigate the causes of exceedance; 2. Submit proposals for remedial measures to the ER with a copy to ET and IEC within three working days of notification; 3. Implement the agreed proposals; and 4. Amend proposal as appropriate.
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; and 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; and 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. Identify source(s) and investigate the causes of exceedance; 2. Take immediate action to avoid further exceedance; 3. Submit proposals for remedial measures to ER with a copy to ET and IEC within three working days of notification; 4. Implement the agreed proposals; and 5. 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; 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; and 8. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by the ET; 2. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 3. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; and 4. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented; 3. Supervise the implementation of remedial measures; and 4. 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.	1. Identify source(s) and investigate the causes of exceedance; 2. Take immediate action to avoid further exceedance; 3. Submit proposals for remedial measures to the ER with a copy to the IEC and ET within three working days of notification; 4. Implement the agreed proposals; 5. Revise and resubmit proposals if problem still not under control; and 6. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Event and Action Plan for Noise (Construction)

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; and 5. Increase monitoring frequency to check mitigation effectiveness.	1. Review the analyzed results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; and 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 analyzed noise problem; and 4. Ensure remedial measures are properly implemented.	1. Submit noise mitigation proposals to IEC; and 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 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; and 8. If exceedance stops, cease additional monitoring.	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; and 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 analyzed noise problem; 4. Ensure remedial measures properly implemented; and 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.	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; 4. Resubmit proposals if problem still not under control; and 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Event and Action Plan for Water Quality Monitoring

EVENT	ACTION			
	ET	IEC	ER	Contractor
Action level being exceeded by one sampling day	1. Repeat in situ measurement on the next day of exceedance to confirm findings; 2. Check monitoring data, plant, equipment and Contractor(s)'s working methods; 3. Identify source(s) of impact and record in notification of exceedance; 4. Inform IEC, Contractor(s) and ER	1. Check monitoring data submitted by ET and Contractor(s)'s working methods; 2. Inform EPD and AFCD.	1. Confirm receipt of notification of exceedance in writing	1. Confirm receipt of notification of exceedance in writing; 2. Check plant and equipment and rectify unacceptable practice
Action level being exceeded by two or more consecutive sampling days	1. Repeat in situ measurement on the next day of exceedance to confirm findings; 2. Check monitoring data, plant, equipment and Contractor(s)'s working methods; 3. Identify source(s) of impact and record in notification of exceedance; 4. Inform IEC, Contractor(s) and ER; 5. Discuss with IEC and Contractor(s) on additional mitigation measures and ensure that they are implemented.	1. Check monitoring data submitted by ET and Contractor(s)'s working methods; 2. Inform EPD and AFCD; 3. Discuss with ET and Contractor(s) on additional mitigation measures and advise ER accordingly; 4. Assess the effectiveness of the implemented mitigation measures.	1. Confirm receipt of notification of exceedance in writing; 2. Discuss with the IEC on the proposed additional mitigation measures and agree on the mitigation measures to be implemented. 3. Ensure additional mitigation measures are properly implemented.	1. Confirm receipt of notification of exceedance in writing; 2. Check plant and equipment and rectify unacceptable practice; 3. Consider changes of working methods; 4. Discuss with ET and IEC on additional mitigation measures and propose them to ER within 3 working days; 5. Implement the agreed mitigation measures.

EVENT	ACTION			
	ET	IEC	ER	Contractor
Limit level being exceeded by one sampling day	1. Repeat in situ measurement on the next day of exceedance to confirm findings; 2. Check monitoring data, plant, equipment and Contractor(s)'s working methods; 3. Identify source(s) of impact and record in notification of exceedance; 4. Inform IEC, Contractor(s) and ER; 5. Discuss with IEC and Contractor(s) on additional mitigation measures and ensure that they are implemented.	1. Check monitoring data submitted by ET and Contractor(s)'s working methods; 2. Inform EPD and AFCD; 3. Discuss with ET and Contractor(s) on additional mitigation measures and advise ER accordingly; 4. Assess the effectiveness of the implemented mitigation measures.	1. Confirm receipt of notification of exceedance in writing; 2. Discuss with the IEC on the proposed additional mitigation measures and agree on the mitigation measures to be implemented. 3. Ensure additional mitigation measures are properly implemented. 4. Request Contractor(s) to critically review the working methods.	1. Confirm receipt of notification of exceedance in writing; 2. Check plant and equipment and rectify unacceptable practice; 3. Critically review the need to change working methods; 4. Discuss with ET and IEC on additional mitigation measures and propose them to ER within 3 working days; 5. Implement the agreed mitigation measures.
Limit level being exceeded by two or more consecutive sampling days	1. Repeat in situ measurement on the next day of exceedance to confirm findings; 2. Check monitoring data, plant, equipment and Contractor(s)'s working methods; 3. Identify source(s) of impact and record in notification of exceedance; 4. Inform IEC, Contractor(s) and ER; 5. Discuss with IEC and Contractor(s) on additional mitigation measures and ensure that they are implemented.	1. Check monitoring data submitted by ET and Contractor(s)'s working methods; 2. Inform EPD and AFCD; 3. Discuss with ET and Contractor(s) on additional mitigation measures and advise ER accordingly; 4. Assess the effectiveness of the implemented mitigation measures.	1. Confirm receipt of notification of exceedance in writing; 2. Discuss with the IEC on the proposed additional mitigation measures and agree on the mitigation measures to be implemented. 3. Ensure additional mitigation measures are properly implemented. 4. Request Contractor(s) to critically review the working methods.	1. Confirm receipt of notification of exceedance in writing; 2. Check plant and equipment and rectify unacceptable practice; 3. Critically review the need to change working methods; 4. Discuss with ET and IEC on additional mitigation measures and propose them to ER within 3 working days; 5. Implement the agreed mitigation measures.

Event and Action Plan for Ecology Monitoring

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; and 5. Increase monitoring frequency to check mitigation effectiveness.	1. Review the analyzed results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; and 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 analyzed noise problem; and 4. Ensure remedial measures are properly implemented.	1. Submit noise mitigation proposals to IEC; and 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 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; and 8. If exceedance stops, cease additional monitoring.	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; and 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; and 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.	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; 4. Resubmit proposals if problem still not under control; and 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Appendix F

Waste Flow Table

Waste Flow Table for Year 2022

Monthly Ending	Total Quantity Generated	Actual Quantities of Inert C&D Materials Generated Monthly					Actual Quantities of Non-inert C&D Wastes Generated Monthly				
		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 tonnes)	(in tonnes)	(in tonnes)	(in tonnes)	(in tonnes)	(in tonnes)	(in tonnes)	(in tonnes)	(in tonnes)	(in tonnes)	(in tonnes)
2022 Jan	243.88	Nil	Nil	Nil	215.24	Nil	17.46	0.04	Nil	Nil	11.14
2022 Feb	92.65	Nil	Nil	Nil	38.73	Nil	43.95	Nil	Nil	Nil	9.97
2022 Mar	398.96	Nil	Nil	Nil	312.08	Nil	76.31	Nil	Nil	Nil	10.57
2022 Apr	3619.84	Nil	Nil	Nil	3552.01	Nil	58.86	0.13	Nil	Nil	8.84
2022 May	2708.03	Nil	Nil	Nil	2692.75	Nil	8.61	Nil	Nil	Nil	6.67
2022 Jun	94.92	Nil	Nil	Nil	Nil	Nil	78.34	Nil	Nil	Nil	16.58
2022 Jul	227.99	Nil	Nil	Nil	Nil	Nil	209.20	0.13	Nil	Nil	18.66
2022 Aug	248.65	Nil	Nil	Nil	187.27	Nil	29.60	0.13	Nil	Nil	31.65
2022 Sep	3253.69	Nil	Nil	Nil	211.65	2880.00	136.88	Nil	Nil	0.15	25.01
2022 Oct											
2022 Nov											
2022 Dec											
Total	10888.61	0	0	0	7209.73	2880.00	659.21	0.43	0	0.15	139.09

Note:
1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
2) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging materials.

Sources/ reference of the waste flow data; From the Contractor

Appendix G

Implementation Status of

Environmental Mitigation Measures

EIA Ref.	Environmental Protection Measures	Location / Duration of Measures / Timing of Completion of Measures	Implementation Status
Air Quality Impact			
Construction Phase			
3.6.1.6	Watering once per every two hours on active works areas to reduce dust emission.	All active works areas during construction phase	Implemented
3.8.1.1	Dust suppression measures stipulated in the Air Pollution Control (Construction Dust) Regulation and good site practices listed below shall be carried out to further minimize construction dust impact:	Construction Sites	
	• Use of regular watering to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather.		Implemented
	• Use of frequent watering for particularly dusty construction areas and areas close to ASRs.		Implemented
	• Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines.		Implemented
	• Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs.		Implemented
	• Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations.		Implemented
	• Establishment and use of vehicle wheel and body washing facilities at the exit points of the site.		Implemented
	• Provision of wind shield and dust extraction units or similar dust mitigation measures at the loading area of barging point, and use of water sprinklers at the loading area where dust generation is likely during the loading process of loose material, particularly in dry seasons/ periods.		N/A
	• Provision of not less than 2.4m high hoarding from ground level along site boundary where adjoins a road, streets or other accessible to the public except for a site entrance or exit.		Implemented
	• Imposition of speed controls for vehicles on site haul roads.		Implemented
	• Where possible, routing of vehicles and positioning of construction plant should be at the maximum possible distance from ASRs.		Implemented

EIA Ref.	Environmental Protection Measures	Location / Duration of Measures / Timing of Completion of Measures	Implementation Status
	• Instigation of an environmental monitoring and auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise.		Implemented
Noise Impact			
Construction Phase			
4.8.1	Movable noise barriers are recommended for hydraulic breakers mounted on excavators to be adopted during construction.	Construction Sites	Partially Implemented
	Good site practices listed below and the noise control requirements stated in EPD's "Recommended Pollution Control Clauses for Construction Contracts" should be included in the Contract Specification for the Contractors to follow and should be implemented to further minimize the potential noise impacts during the construction phase of the Project.		Implemented
	• Quiet PME, such that those listed in EPD's Quality Powered Mechanical Equipment, should be considered for construction works to further minimize the potential construction noise impact.		Implemented
	• Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme.		Implemented
	• Silencers or mufflers on construction equipment should be utilised and should be properly maintained during the construction programme.		Implemented
	• Mobile plant, if any, should be sited as far away from noise sensitive receivers (NSRs) as possible.		N/A
	• Machines and plant (such as trucks) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.		Implemented
	• 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		N/A
	• Material stockpiles and other structures should be effectively utilised, wherever practicable, in screening noise from on-site construction activities.		N/A
Water Quality Impact			
Construction Phase			
5.8.1.2	Water used in ground boring and drilling for site investigation or rock / soil anchoring should as far as practicable be re-circulated after sedimentation. When there is a need for final disposal, the wastewater should be discharged into storm drains via silt removal facilities	Construction Sites / Construction Phase	Implemented

EIA Ref.	Environmental Protection Measures	Location / Duration of Measures / Timing of Completion of Measures	Implementation Status
5.8.1.3	All vehicles and plant should be cleaned before they leave a construction site to minimise the deposition of earth, mud, debris on roads. A wheel washing bay should be provided at every site exit if practicable and wash-water should have sand and silt settled out or removed before discharging into storm drains. The section of construction road between the wheel washing bay and the public road should be paved with backfill to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.	Construction Sites / Construction Phase	Implemented
5.8.1.4	Good site practices should be adopted to remove rubbish and litter from construction sites so as to prevent the rubbish and litter from spreading from the site area. It is recommended to clean the construction sites on a regular basis.	Construction Sites / Construction Phase	Implemented
5.8.1.5 – 5.8.1.6	The site practices outlined in ProPECC PN 1/94 “Construction Site Drainage” should be followed where applicable to minimise surface run-off and the chance of erosion. Surface run-off from construction sites should be discharged into storm drains via adequately designed sand / silt removal facilities such as sand traps, silt traps and sedimentation basins. Channels, earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Perimeter channels at site boundaries should be provided as necessary to intercept storm run-off from outside the site so that it will not wash across the site. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks.	Construction Sites /Construction Phase	Implemented
5.8.1.7	Silt removal facilities, channels and manholes should be maintained and the deposited silt and grit should be removed regularly (as well as at the onset of and after each rainstorm) to prevent overflows and localised flooding.	Construction Sites / Construction Phase	Implemented
5.8.1.8	Construction works should be programmed to minimise soil excavation in the wet season (i.e. April to September). If soil excavation cannot be avoided in these months or at any time of year when rainstorms are likely, temporarily exposed slope surfaces should be covered e.g. by tarpaulin, and temporary access roads should be protected by crushed stone or gravel, as excavation proceeds. Intercepting channels should be provided (e.g. along the crest / edge of excavation) to prevent storm run-off from washing across exposed soil surfaces.	Construction Sites / Construction Phase	Implemented
5.8.1.9	Earthworks final surfaces should be well compacted and the subsequent permanent work or surface protection should be carried out immediately after the final surfaces are formed to prevent erosion	Construction Sites / Construction Phase	Implemented

EIA Ref.	Environmental Protection Measures	Location / Duration of Measures / Timing of Completion of Measures	Implementation Status
	caused by rainstorms. Appropriate drainage like intercepting channels should be provided where necessary		
5.8.1.10	Measures should be taken to minimise the ingress of rainwater into trenches. If excavation of trenches in the wet season is necessary, they should be dug and backfilled in short sections. Rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.	Construction Sites / Construction Phase	Implemented
5.8.1.11	Construction materials (e.g. aggregates, sand and fill material) on sites should be covered with tarpaulin or similar fabric during rainstorms	Construction Sites / Construction Phase	Implemented
5.8.1.12	Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers. Discharge of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system.	Construction Sites / Construction Phase	Implemented
5.8.1.13	The practices outlined in Environment, Transport and Works Bureau (ETWB) TC (Works) No. 5/2005 Protection of natural streams/rivers from adverse impacts arising from construction works" should also be adopted where applicable to minimise the water quality impacts upon any natural streams or surface water systems.	Construction Sites / Construction Phase	Implemented
5.8.1.14	Sufficient chemical toilets should be provided in the works areas. A licensed waste collector should be deployed to clean the chemical toilets on a regular basis.	Construction Sites / Construction Phase	Implemented
5.8.1.15	Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the surrounding environment.	Construction Sites / Construction Phase	Implemented
5.8.1.16	Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The WDO (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation, should be observed and complied with for control of chemical wastes.	Construction Sites / Construction Phase	Implemented

EIA Ref.	Environmental Protection Measures	Location / Duration of Measures / Timing of Completion of Measures	Implementation Status
5.8.1.17	Any service shop and maintenance facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.	Construction Sites /Construction Phase	N/A
5.8.1.18	Disposal of chemical wastes should be carried out in compliance with the WDO. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the WDO should be followed to avoid leakage or spillage of chemicals.	Construction Sites / Construction Phase	Implemented
5.8.1.19	All the runoff and wastewater generated from the works areas should be treated so that it satisfies all the standards listed in the Technical Memorandum on Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters (TM-DSS).	Construction Sites / Construction Phase	Implemented
5.8.2.11	Chemical should be stored on site at bunded area and separate drainage system as appropriate should be provided to avoid any spilled chemicals from entering the storm drain in case of accidental spillage. Also, adequate tools for cleanup of spilled chemicals should be stored on site and appropriate training shall be provided to staffs to further prevent potential adverse water quality impacts from happening.	Project site / Design and Operation Phase	Partially Implemented
Waste Management Implication			
Construction Phase			
6.6.1.3	<u>Good Site Practices</u> Recommendations for good site practices during the construction phase include:	Construction Sites	
	• Nomination of approved personnel, such as a site manager, to be responsible for good site practices, and making arrangements for collection of all wastes generated at the site and effective disposal to an appropriate facility;		Implemented
	• Training of site personnel in proper waste management and chemical waste handling procedures;		Implemented
	• Provision of sufficient waste reception/ disposal points, of a suitable vermin-proof design that minimises windblown litter;		N/A
	• Arrangement for regular collection of waste for transport off-site and final disposal;		Implemented
	• Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers;		Implemented

EIA Ref.	Environmental Protection Measures	Location / Duration of Measures / Timing of Completion of Measures	Implementation Status
	• Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors;		Partially Implemented
	• A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be proposed; and		Implemented
	• A WMP should be prepared and should be submitted to the Engineer for approval. One may make reference to ETWB TCW No. 19/2005 for details.		Implemented
6.6.1.5	Waste Reduction Measures Recommendations to achieve waste reduction include:	Construction Sites	
	• Segregate and store different types of construction related waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal;		Implemented
	• Provide separate labelled bins to segregate recyclable waste such as aluminium cans from other general refuse generated by the work force, and to encourage collection by individual collectors;		Implemented
	• Any unused chemicals or those with remaining functional capacity shall be recycled;		N/A
	• Maximising the use of reusable steel formwork to reduce the amount of C&D material;		N/A
	• Prior to disposal of C&D waste, it is recommended that wood, steel and other metals shall be separated for re-use and / or recycling to minimise the quantity of waste to be disposed of to landfill;		Implemented
	• Adopt proper storage and site practices to minimise the potential for damage to, or contamination of, construction materials;		Implemented
	• Plan the delivery and stock of construction materials carefully to minimise the amount of surplus waste generated;		N/A
	• Adopt pre-cast construction method instead of cast-in-situ method for construction of concrete structures as much as possible; and		N/A
	• Minimise over ordering of concrete, mortars and cement grout by doing careful check before ordering.		N/A
6.6.1.7	<u>Storage of Waste</u> Recommendations to minimise the impacts include:	Construction Sites	
	• Waste, such as soil, should be handled and stored well to ensure secure containment, thus minimising the potential of pollution;		Implemented

EIA Ref.	Environmental Protection Measures	Location / Duration of Measures / Timing of Completion of Measures	Implementation Status
	• Maintain and clean storage areas routinely;		Implemented
	• Stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; and		Implemented
	• Different locations should be designated to stockpile each material to enhance reuse.		Implemented
6.6.1.8	Collection of WasteLicensed waste haulers should be employed for the collection and transportation of waste generated. The following measures should be enforced to minimise the potential adverse impacts:	Construction Sites	
	• Remove waste in timely manner;		Implemented
	• Waste collectors should only collect wastes prescribed by their permits;		Implemented
	• Impacts during transportation, such as dust and odour, should be mitigated by the use of covered trucks or in enclosed containers;		Implemented
	• Obtain relevant waste disposal permits from the appropriate authorities, in accordance with the WDO (Cap. 354), Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 345) and the Land (Miscellaneous Provisions) Ordinance (Cap. 28);		Implemented
	• Waste should be disposed of at licensed waste disposal facilities; and		Implemented
	• Maintain records of quantities of waste generated, recycled and disposed.		Implemented
6.6.1.10	Transportation of Waste In order to monitor the disposal of C&D materials at PFRFs and landfills and to control fly-tipping, a trip-ticket system should be established in accordance with DEVB TCW No. 6/2010. A recording system for the amount of waste generated, recycled and disposed, including the disposal sites, should also be set up. Warning signs should be put up to remind the designated disposal sites. CCTV should be installed at the vehicular entrance and exit of the site as additional measures to prevent fly-tipping.	Transportation Route of Waste / Construction Phase	Partially Implemented

EIA Ref.	Environmental Protection Measures	Location / Duration of Measures / Timing of Completion of Measures	Implementation Status
6.6.1.12	<u>Construction and Demolition Material</u> Careful design, planning together with good site management can reduce over-ordering and generation of C&D materials such as concrete, mortar and cement grouts. Formwork should be designed to maximize the use of standard wooden panels, so that high reuse levels can be achieved. Alternatives such as steel formwork or plastic facing should be considered to increase the potential for reuse	Construction Sites	N/A
6.6.1.13	The excavated material arising from site formation and foundation works should be reused on-site as backfilling material and for landscaping works as far as practicable. Other mitigation requirements are listed below:	Construction Sites	
	• A WMP, which becomes part of the EMP, should be prepared in accordance with ETWB TCW No.19/2005;		Implemented
	• A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be adopted for easy tracking; and		Implemented
	• In order to monitor the disposal of C&D materials at public filling facilities and landfills and to control fly-tipping, a trip-ticket system should be adopted (refer to DEVB TCW 06/2010).		Implemented
6.6.1.14	It is recommended that specific areas should be provided by the Contractors for sorting and to provide temporary storage areas (if required) for the sorted materials. Control measures for temporary stockpiles on-site should be taken in order to minimise the noise, generation of dust and pollution of water. These measures include:	Construction Sites	
	• Surface of stockpiled soil should be regularly wetted with water especially during dry season;		Implemented
	• Disturbance of stockpile soil should be minimised;		Implemented
	• Stockpiled soil should be properly covered with tarpaulin especially when heavy storms are predicted; and		Implemented
	• Stockpiling areas should be enclosed where space is available.		Implemented

EIA Ref.	Environmental Protection Measures	Location / Duration of Measures / Timing of Completion of Measures	Implementation Status
6.6.1.15	The Contactor should prepare and implement an EMP in accordance with ETWB TCW No.19/2005, which describes the arrangements for avoidance, reuse, recovery, recycling, storage, collection, treatment and disposal of different categories of waste to be generated from construction activities. Such a management plan should incorporate site-specific factors, such as the designation of areas for segregation and temporary storage of reusable and recyclable materials. The EMP should be submitted to the Engineer for approval. The Contractor should implement waste management practices in the EMP throughout the construction stage of the Project. The EMP should be reviewed regularly and updated by the Contractor, preferably on a monthly basis.	Construction Sites	Implemented
6.6.1.16	The Contractor would be responsible for devising a system to work for on-site sorting of C&D materials and promptly removing all sorted and process materials arising from the construction activities to minimise temporary stockpiling on-site. The system should be included in the EMP identifying the source of generation, estimated quantity, arrangement for on-site sorting, collection, temporary storage areas and frequency of collection by recycling Contractors or frequency of removal off-site.	Construction Sites	Implemented
6.6.1.17 – 6.6.1.18	The sediment should be excavated, handled, transported and disposed of in a manner that would minimise adverse environmental impacts. To minimise sediment disposal, it is proposed to reuse the Type 1 sediment generated (e.g. as backfilling materials) as far as possible. Requirements of the Air Pollution Control (Construction Dust) Regulation, where relevant, shall be adhered to during excavation, transportation and disposal of the sediment.	Construction Sites	N/A
6.6.1.19	Workers shall, if necessary, wear appropriate personal protective equipments (PPE) when handling contaminated sediments. Adequate washing and cleaning facilities shall also be provided on site.	Construction Sites	Implemented
6.6.1.20	For off-site disposal, the basic requirements and procedures specified under ETWB TC(W) No. 34/2002 shall be followed.	Transportation Route of Waste / Construction Phase	Implemented
6.6.1.24	Stockpiling of contaminated sediments should be avoided as far as possible. If temporary stockpiling of contaminated sediments is necessary, the excavated sediment should be covered by tarpaulin and the area should be placed within earth bunds or sand bags to prevent leachate from entering the ground, nearby drains and surrounding water bodies. The stockpiles should be completely paved or covered by linings in order to avoid contamination to underlying soil or groundwater. Separate and clearly defined areas should be provided for stockpiling of contaminated and uncontaminated materials. Leachate, if any, should be collected and discharged according to the Water Pollution Control Ordinance (WPCO).	Construction Sites	Partially Implemented

EIA Ref.	Environmental Protection Measures	Location / Duration of Measures / Timing of Completion of Measures	Implementation Status
6.6.1.25	In order to minimise the potential odour / dust emissions during excavation and transportation of the sediment, the excavated sediments shall be wetted during excavation / material handling and shall be properly covered when placed on trucks or barges. Loading of the excavated sediment to the barge shall be controlled to avoid splashing and overflowing of the sediment slurry to the surrounding water.	Construction sites & transportation route of waste / Construction phase	N/A
6.6.1.26	The barge transporting the sediments to the designated disposal sites shall be equipped with tight fitting seals to prevent leakage and shall not be filled to a level that would cause overflow of materials or laden water during loading or transportation. In addition, monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by the DEP.	Transportation route of waste / Construction phase	N/A
6.6.1.27	Suitable containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor shall employ a licensed collector to transport and dispose of the chemical wastes, to the licensed CWTC, or other licensed facilities, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	Construction and OperationPhases	Implemented
6.6.1.28	It is recommended to place clearly labelled recycling bins at designated locations with convenient access. Other general refuse should be separated from chemical and industrial waste by providing separated bins or skips for storage to maximise the recyclable volume. A reputable licensed waste collector should be employed to remove general refuse on a daily basis to minimise odour, pest and litter impacts.	Construction and Operation Phases	Implemented
6.6.1.29	Should buildings are found with potential ACM, sufficient and reasonable lead time shall be allowed for preparation, vetting and implementation of Asbestos Investigation Report and Asbestos Abatement Plan in accordance with Air Pollution Control Ordinance before commencement of any demolition or site clearance work.	Demolition	N/A
Land Contamination			

EIA Ref.	Environmental Protection Measures	Location / Duration of Measures / Timing of Completion of Measures	Implementation Status
7.8.1.2 - 7.8.1.3;7.8.2.1	Prior to the commencement of the SI works, a review of the Contamination Assessment Plan (CAP) should be conducted to confirm whether the proposed SI works (e.g. sampling locations, testing parameters etc.) are still valid. Supplementary CAP(s), presenting findings of the review, the latest site conditions and updated sampling strategy and testing protocol, should be submitted to EPD for endorsement. The SI works should be carried out according to EPD's agreed supplementary CAP(s).SI works should be carried out according to the supplementary CAP endorsed by EPD. Following completion of SI works and receipt of laboratory test results, Contamination Assessment Report(s) ((CAR)(s)) should be prepared to present the findings of the SI works and to discuss the presence, nature and extent of contamination.If contamination is identified, Remedial Action Plan(s) ((RAP)(s)) which provides details of the remedial actions for the identified contaminated soil and / or groundwater should be endorsed by EPD. The possible remediation methods are detailed in Section 5.2 of the CAP provided in Appendix 7.1 of the EIA Report.Remediation action, if necessary, will be carried out according to EPD endorsed RAP(s) and Remediation Report(s) (RR(s)) will be submitted after completion of the remediation action. The RR(s) should be endorsed by EPD prior to the commencement of construction works at the respective identified contaminated areas (if any).	Existing YLSTW /Construction Phase (afterdecommissioning of theconcerned facilities / areasbut prior to the constructionworks at the concernedfacilities / areas)	Implemented
7.8.3.1	The mitigation measures will be recommended in the RAP and would typically include the following:	Project Site / Construction Phase	
	• Excavation profiles must be properly designed and executed with attention to the relevant requirements for environment, health and safety;		Implemented
	• Excavation shall be carried out during dry season as far as possible to minimise contaminated runoff from contaminated soils; Supply of suitable clean backfill material (or treated soil) after excavation;		N/A
	• Stockpiling site(s) shall be lined with impermeable sheeting and bunded. Stockpiles shall be fully covered by impermeable sheeting to reduce dust emission. If this is not practicable due to frequent usage, regular watering shall be applied. However, watering shall be avoided on stockpiles of contaminated soil to minimise contaminated runoff.		Implemented
	• Vehicles containing any excavated materials shall be suitably covered to limit potential dust emissions or contaminated wastewater run-off, and truck bodies and tailgates shall be sealed to prevent any discharge during transport or during wet conditions;		Implemented
	• Speed control for the trucks carrying contaminated materials shall be enforced;		Implemented

EIA Ref.	Environmental Protection Measures	Location / Duration of Measures / Timing of Completion of Measures	Implementation Status
	• Vehicle wheel and body washing facilities at the site's exist points shall be established and used; and		Implemented
	• Pollution control measures for air emissions (e.g. from biopile blower and handling of cement), noise emissions (e.g. from blower or earthmoving equipment), and water discharges (e.g. runoff control from treatment facility) shall be implemented and complied with relevant regulations and guidelines.		Implemented
Ecological Impact (Terrestrial and Aquatic)			
Construction Phase			
8.10.2.1	Avoidance of Recognised Site of Conservation Importance Construction works are designed to be confined to the boundary of the existing YLSTW that direct impacts on all other sites of conservation importance within the assessment area, including the Ramsar Site, Priority Site, WCA, WBA, SSSI and CA would be avoided.	Project site / Construction Phase	Implemented
8.10.2.3 – 8.10.2.4	Avoidance of Demolition Works Using Breakers Mounted on Excavators and Percussive Piling during Dry Season In order to minimise the construction noise disturbance on overwintering waterbirds, the noisy construction works, i.e. all percussive piling works and demolition using breakers mounted on excavators, would therefore be scheduled outside the dry season (i.e. November to March, which is the peak overwintering period of waterbirds).	Construction sites /Construction Phase	Implemented
8.10.2.5	Restriction of Construction Hours No construction activities with the use of PME should be conducted within 100m from any night roost confirmed by the pre-construction survey after 18:00 during wet season and 17:30 during dry season to avoid disturbance to the nearby ardeids night roosts.	Construction sites / Construction Phase	Implemented
8.10.3.2 – 8.10.3.3	Minimising Construction Noise Disturbance Impacts through Consideration of Alternative Construction Methods Demolition using concrete crusher is quieter than demolition using breaker that its construction noise level is comparable to other general construction activities and concrete crusher would be used for demolition works to be undertaken during dry season months. The quieter foundation methods, including bored piling, raft foundation and shallow foundation, would be adopted as far as possible.	Construction sites / Construction Phase	Implemented

EIA Ref.	Environmental Protection Measures	Location / Duration of Measures / Timing of Completion of Measures	Implementation Status
8.10.3.4 – 8.10.3.5	<u>Minimising Construction Noise Disturbance Impacts Through Careful Phasing of Construction Activities</u> Percussive piling works and demolition using breakers mounted on excavators would typically be completed over two wet seasons and not be undertaken in the same construction zone at the same time to localise the construction disturbance and to reduce the duration of high level of disturbances on sensitive wetland habitats and associated waterbirds nearby each construction zone. Facilities in the eastern side of the Project site (i.e. Phase 1A and Phase 1B) are scheduled to be developed first that the new structures could screen the works in the middle and western parts of the site in later stage of the construction phase after the structures in Phase 1A and Phase 1B are completed, hence minimising the construction noise and human disturbance on sensitive wetland habitats adjacent to the Project site in Shan Pui River, including the confluence of Shan Pui River and Kam Tin River and ardeid night roost to the immediate east of the Project site.	Project site / Construction Phase	Implemented
8.10.3.6 – 8.10.3.8	<u>Minimising Construction Noise Disturbance Impacts through Use of Noise Barriers</u> Noise barriers with absorptive materials of about 4m high will be erected along the northern, eastern and western sides of the site, throughout the construction phase to screen the construction noise and human disturbance to the waterbirds foraging in ponds in Fung Lok Wai and Shan Pui River during construction phase. Adequate noise barriers should also be provided for demolition works using breakers mounted on excavators and percussive piling works, to further minimise the construction noise disturbance from these construction activities. Movable noise barriers should be provided to breaker mounted on excavator used for demolition works as discussed in Section 4.8 and acoustic mat should be provided to the piling plants around the rig. The contractor should provide enclosure for construction equipment, especially static plants, as appropriate to minimise the noise disturbance as far as practicable.	Construction sites / Construction Phase	Implemented

EIA Ref.	Environmental Protection Measures	Location / Duration of Measures / Timing of Completion of Measures	Implementation Status
8.10.3.9	Use of Quality Powered Mechanical Equipment The contractor should source QPMEs for construction as far as practicable to further minimise the overall construction noise and other disturbance to the nearby wetland habitats and associated waterbirds to the maximum practical extent.	Construction sites / Construction Phase	Implemented
Ecology & Fisheries Impact			
8.12.1.4, 9.7	Groundwater observation wells and recharge wells will be provided at the northern and western side of the site. Groundwater table will be closely monitored at the observation well. In case of any unlikely events of abnormal drawdown of groundwater table near the excavation area, groundwater dewatering will stop and water will be pumped into the recharge wells to recover the normal groundwater table as necessary.	Construction Phase	N/A
Fisheries Impact			
9.7	The implementation of good site practices during construction could minimise the potential water quality impacts from the land-based construction works. Mitigation measures recommended in the Water Quality Impact Assessment (Section 5) for controlling water quality impact would also serve to protect fisheries resources and activities from indirect impacts.	Construction and Operation Phase	N/A
Landscape and Visual Impact			
Table 10.11	Preservation of Existing Vegetation (CM1) All the existing Trees to be retained and not to be affected by the Project shall be carefully protected during construction accordance with DEVB TCW No. 7/2015 - Tree Preservation and the latest Guidelines on Tree Preservation during Development issued by GLTM Section of DevB. Any existing vegetation in landscaped areas and natural terrain not to be affected by the Project shall be carefully preserved.	Project site / Construction Phase	Partially Implemented
Table 10.11	Transplanting of Affected Trees (CM2) Trees unavoidably affected by the works shall be transplanted as far as possible in accordance with DEVB TCW No. 7/2015 - Tree Preservation and the latest Guidelines on Tree Transplanting issued by GLTM Section of DevB.	Project site / Construction Phase	Implemented

EIA Ref.	Environmental Protection Measures	Location / Duration of Measures / Timing of Completion of Measures	Implementation Status
Table 10.11	Compensatory Tree Planting (CM3) Any trees to be felled under the Project shall be compensated in accordance with DEVB TCW No. 7/2015 - Tree Preservation. For trees to be compensated on slopes, the guidelines for tree planting stipulated in GEO Publication No. 1/2011 will be followed.	Project site / Construction Phase	N/A
Table 10.11	Control of Night-time Lighting Glare (CM4) All the night time lighting shall be avoided except for safety purpose. No light glare shall illuminate directly outside the site.	Project site / Construction Phase	Implemented
Table 10.11	Erection of Decorative Screen Hoarding (CM5) Site hoardings, if any, shall be painted in dull green colour	Project site / Construction Phase	Implemented
Table 10.11	Management of Construction Activities and Facilities (CM6) Construction activities shall be well scheduled and avoid powered mechanical equipment's operating simultaneously. All stockpiling areas and idled area shall be covered by tarpaulin sheet or hydroseeded as far as possible.	Project site / Construction Phase	Implemented
Hazard to Life			
Construction Phase			
11.5.6.9-11.5.6.12	• Implementation of those major construction works and movement of plants and vehicles would be stringently controlled to have a setback of at least 15m clear distance, or physical barrier with an empty digester / gas holder from the digesters / gas holders in operation;	Project site / Construction Phase	N/A
	• For those construction works to be carried out in close proximity to the 15m zone from digesters / gas holders in operation, the height of plants for those major construction shall be limited to 15m such that the plants would not damage digesters /gas holders in such incident as plant collapse or overturning;		N/A
	• Whenever practicable, the construction sequence shall be arranged with empty unit(s) for separating the major construction works from these digesters / gas holders in use; and		N/A

EIA Ref.	Environmental Protection Measures	Location / Duration of Measures / Timing of Completion of Measures	Implementation Status
	• Physical barriers such as concrete blocks shall be set up at the 15m zone in order to avoid those construction plants or vehicles from colliding to the digester / gas holder units in use.		N/A
11.5.8	• Method statements and risk assessments shall be prepared and safety control measures shall be in place before commencement of work	Project site / Construction Phase	Implemented
	• All work procedures shall be complied with the operating plant procedures or guidelines and regulatory requirements;		Implemented
	• Work permit system, on-site pre-work risk assessment and emergency response procedure shall be in place before commencement of work;		Implemented
	• All construction workers shall equip with appropriate personal protective equipment (PPE) when working at the Project Site;		Implemented
	• Safety training and briefings shall be provided to all construction workers;		Implemented
	• Regular site safety inspections shall be conducted during the construction phase of the Project;		Implemented
11.9.1.2	• Ensure speed limit enforcement is specified in the contractor's method statement to limit the speed of construction vehicles onsite;	Project site / ConstructionPhase	Implemented
	• Conduct speed checks to ensure enforcement of speed limits and to ensure adequate site access control;		N/A
	• A lifting plan, with detailed risk assessment, should be prepared and endorsed for heavy lifting of large equipment;		Implemented
	• Vehicle crash barriers should be provided between the construction site and the operating biogas facilities;		N/A
	• Ensure that a hazardous are classification study is conducted and hazardous area maps are updated before the start of the construction activities to ensure ignition sources are controlled during both construction and operation phases;		Implemented
	• Ensure work permit system for hot work activities within the Project Site is specified in the contractor's method statement to minimize and control the ignition sources during the construction phase;		Implemented
	• Ensure effective communication system / protocol is in place between the contractors and the operation staff;		Implemented
	• Ensure the Project Construction Emergency Response Plan is integrated with the Emergency Response Plan for the YLEPP during construction phase. The plan should address stop work instructions to be promptly communicated to all construction workers performing hot works in case a confirmed biogas detection at the Project Site;		Partially Implemented

EIA Ref.	Environmental Protection Measures	Location / Duration of Measures / Timing of Completion of Measures	Implementation Status
	• Ensure that the construction activities do not impede the functions of fire and gas detection system, fire protection system, muster areas, fire-fighting vehicle access and escape routes;		Implemented
	• Ensure a Job Safety Analysis is conducted for construction activities of the Project during the construction phase, to identify and analyze hazards associated with the construction activities (e.g. lifting operations by cranes) onto the operating biogas facilities.		Implemented
	Potential risks of the construction activities shall be assessed, and risk precautionary measures shall be implemented in Contractor's works procedures.		Implemented

Note:

Implementation status: Implemented / Partially Implemented / Not Implemented / Not Applicable (N/A)

Sources / reference of the Implementation Status: Appendix B of EIA Report, AEIAR-220/2019

Appendix H

Cumulative statistics on Environmental Complaints,

Notifications of Summons and Successful Prosecutions

Environmental Complaints Log

Reference No.	Date of Complaint Received	Received From	Received By	Nature of Complaint	Date of Investigation	Outcome	Date of Reply

Cumulative Statistics on Complaints

Environmental Parameters	Cumulative No. Brought Forward	No. of Complaints This Month	Cumulative Project-to-Date
Air	0	0	0
Noise	0	0	0
Water	0	0	0
Waste	0	0	0
Total	0	0	0

Cumulative Statistics on Notification of Summons and Successful Prosecutions

Environmental Parameters	Cumulative No. Brought Forward	No. of Notification of Summons and Prosecutions This Month	Cumulative Project-to-Date
Air	0	0	0
Noise	0	0	0
Water	0	0	0
Waste	0	0	0
Total	0	0	0