Quarterly EM&A Report (August 2022- October 2022)

0185/21/ED/0450 02

Sai O Trunk Sewer Sewage Pumping Station

RAMBOLL

Ref.: SHKSOSPSEM00_0_0064L.23

10 February 2023

By Fax (2827 0485)

Sun Hung Kai Properties Ltd.
42/F., Sun Hung Kai Centre
30 Harbour Road, Wan Chai, Hong Kong

Attention: Mr. Sunny Cheung

Dear Sir,

Re: Sai O Trunk Sewer Sewage Pumping Station
Environmental Permit No. EP-597/2021
Quarterly EM&A Report (August 2022 to October 2022)

Reference is made to the Environmental Team's submission of the Quarterly EM&A Report for August 2022 to October 2022 (ET's ref.:0185/21/ED/0450 02) certified by the ET Leader and provided to us via e-mail on 3 February 2023.

We are pleased to inform you that we have no further comments on the captioned submission. We write to verify the captioned submission in accordance with Condition 3.4 of EP-597/2021 and Section 12.1.1.2 of EM&A Manual for the captioned project.

Thank you very much for your attention and please feel free to contact the undersigned should you require further information.

Yours sincerely,
For and on behalf of
Ramboll Hong Kong Ltd.

Y H Hui
Independent Environmental Checker

c.c.	AECOM	Ms. Janice Tam / Mr. CK Man	(By Fax: 3894 5801)
	Fugro	Mr. Calvin Leung	(By Fax: 2450 6138)
	SGJV	Mr. Eddie Tse	(By Fax: 3894 5801)

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Document Control

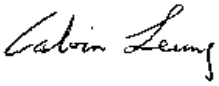
Document Information

Project Title	Sai O Truck Sewer Sewage Pumping Station
Document Title	Quarterly EM&A Report (August 2022- October 2022)
Fugro Project No.	0185/21
Fugro Document No.	0185/21/ED/0450
Issue Number	02
Issue Status	For Verification

Client Information

Client	Light Time Investments Limited
Client Address	42/F, Sun Hung Kei Centre, 30 Harbour, Wan Chai, Hong Kong
Client Contact	Mr. Sunny Cheung

Environmental Team

Initials	Name	Role	Signature
MP	Calvin M.P. Leung	Environmental Team Leader	
CY	Cyrus C.Y. Lai	Senior Environmental Consultant	
WC	Roy W.C. Cheung	Assistant Environmental Consultant	
MS	Michelle T. Shum	Assistant Environmental Consultant	

Executive Summary

i. This Quarterly Environmental Monitoring and Audit (EM&A) Report is prepared for Sai O Trunk Sewer Sewage Pumping Station. Light Time Investments Limited 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 3rd Quarterly EM&A Report presents the environmental monitoring and audit works for the period between 1st August 2022 and 31st October 2022. The major activities in the reporting period informed by the Contractor are summarized in **Table I**.

Table I: Major construction activities undertaken in the reporting period

	August 2022	September 2022	October 2022
Sai O Pumping Station	Pump Room – ELS • Clutch pipe pile and king post • Instrumentation, dewatering well and pumping system	Pump Room – ELS • Clutch pipe pile and king post • Instrumentation, dewatering well and pumping system • Excavate to 500mm below S1 • Install S1, cast concrete packing Rising Main and Gravity Sewer • Clutch pipe	Pump Room – ELS • Install S1, casting concrete packing • Excavate to 500mm below S2 • Install S2, cast concrete packing • Excavate to 500mm below S3 Rising Main and Gravity Sewer • Clutch pipe

Breaches of Action and Limit Levels

iii. No Action/ Limit Level exceedance was recorded for 1-hr of impact air quality at the site area in the reporting quarter.

iv. No Action/ Limit Level exceedance was recorded for impact noise monitoring at the site area in the reporting quarter.

Complaint, Notification of Summons and Successful Prosecution

v. Referring to the Contractor's information, no environmental complaint, notification of summons and successful prosecution was received in the reporting quarter.

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1. INTRODUCTION

1.1 Background

1.1.1 The proposed Sai O Trunk Sewer Sewage Pumping Station (Sai O Trunk Sewer SPS) is a part of Public Works Programme Item 4125DS - Tolo Harbour Sewerage of Unsewered Areas, Stage II, is a core component of the proposed trunk sewerage system in Ma On Shan along Sai Sha Road. It is required to receive all sewage flows along Sai Sha Road from Kei Ling Ha Lo Wai to Cheung Muk Tau and the adjacent residential development, health care institution and education institutions, and then convey the sewage to Sha Tin Sewage Treatment Works.

1.1.2 Based on the latest design, the installed capacity per day of the proposed Sai O Trunk Sewer SPS is about 20,600m^3 for coping with the sewerage needs of both existing and future developments. Location of the proposed Sai O Trunk Sewer SPS is shown in **Figure 1**.

1.1.3 The proposed Sai O Trunk Sewer SPS include the following main components:

- Loading/unloading bay
- Inlet chamber
- Coarse screen channel
- Distribution chamber
- Wet wells
- Valve chamber
- Emergency storage tank
- Deodorizing unit
- Switch room
- Transformer room

1.1.4 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-230/2021) on 4 June 2021. The Environmental Permit (EP) (EP No. EP-597/2021) was issued by EPD on 28 September 2021.

1.1.5 Fugro Technical Services Limited (FTS) has been appointed as the Environmental Team (ET) by Light Time Investments Limited to undertake the Environmental Team services for the Project and implement the EM&A works under Sai O Trunk Sewer Sewage Pumping Station (hereinafter referred as "the Project").

1.1.6 This is the Third Quarterly EM&A Report prepared by FTS. This report presents a summary of the environmental monitoring and audit works, list of activities and mitigation measures proposed by the ET for the Project in 1st August 2022 to 31st October 2022.

1.2 Project Organization

1.2.1 The key personnel contact information for the Project are summarized in **Table 1.1**.

Table 1.1: Contact Information of Key Personnel

Party	Position	Name	Telephone
Project Proponent (PP) (Light Time Investments Ltd.)	Senior Project Manager	Mr. Sunny Cheung	3894 5934
Engineer's Representative (ER) (AECOM Asia Co. Ltd.)	Senior Resident Engineer	Mr. C.K. Man	3894 5919
Independent Environmental Checker (IEC) (Ramboll Hong Kong Ltd.)	Independent Environmental Checker	Mr. Y.H. Hui	3465 2888
Contractor (Sanfield-Gammon Construction JV Company Ltd.)	Environmental Officer	MS. Carrie Kwan	3894 5816
Environmental Team (ET) (Fugro Technical Services Ltd.)	Environmental Team Leader (ETL)	Mr. Calvin Leung	3565 4441

1.3 Construction Programme and Activities

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

Table 1.2: Major construction activities undertaken in the reporting period table

	August 2022	September 2022	October 2022
Sai O Pumping Station	Pump Room – ELS • Clutch pipe pile and king post • Instrumentation, dewatering well and pumping system	Pump Room – ELS • Clutch pipe pile and king post • Instrumentation, dewatering well and pumping system • Excavate to 500mm below S1 • Install S1, cast concrete packing Rising Main and Gravity Sewer • Clutch pipe	Pump Room – ELS • Install S1, casting concrete packing • Excavate to 500mm below S2 • Install S2, cast concrete packing • Excavate to 500mm below S3 Rising Main and Gravity Sewer • Clutch pipe

1.4 Status of Environmental Licenses, Notifications and Permits

1.4.1 A summary of the relevant environmental licenses, permits and/or notifications on environmental protection for this Contract is presented in **Table 1.3**.

Table 1.3: Relevant Environmental Licenses, Permits and/or Notifications

Environmental License / Permit / Notification	Reference Number	Valid From	Valid Till
Environmental Permit	EP-597/2021	28-Sep-2021	NA
Notification of Construction Works under APCO	432718	18-Apr-2018	31-May-2023
Billing Account under Construction Waste Disposal Charging Scheme	7031695	28-Aug-2018	NA
Effluent Discharge License under WPCO	WT00040139-2021	11-Mar-2022	31-Mar-2027
Chemical Waste Producer Registration	8334-741-S4115-01	14-Aug-2018	31-Aug-2023
Construction Noise Permit	GW-RN0629-22	1-Aug-2022	31-Oct-2022

Notes:
NA=Not Applicable

2. SUMMARY OF EM&A REQUIREMENT AND MONITORING RESULTS

2.1 Monitoring Requirement

2.1.1 In accordance with the EM&A Manual, 1-hour Total Suspended Particulates (TSP) levels should be measured at the designated air quality monitoring station 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.

2.1.2 In accordance with the EM&A Manual, 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.

2.2 Monitoring Locations

2.2.1 In accordance with the approved EM&A Manual, air quality monitoring should be carried out at a designated monitoring location.

2.2.2 As limitation of stable electricity supply & safety concern could not be obtained from the designated dust monitoring location, an alternative monitoring location (CA_M1(a)) was proposed to measure 1-hour TSP levels in accordance with EP Condition 3.1 & Section 2.2.1.20 of the EM&A manual. The alternative monitoring location (CA_M1(a)) was approved by EPD on 15 December 2021.

2.2.3 The air quality monitoring location is summarized in **Table 2.1** and shown in **Figure 2**.

Table 2.1: Summary of Impact Air Quality Monitoring Stations

Monitoring Location ID	Location
CA_M1(a)	Construction Site Boundary near Hong Kong Baptist Theological Seminary (HKBTS) Staff & Students Quarters

2.2.4 In accordance with the EM&A Manual, noise monitoring should be carried out at 2 designated monitoring locations.

2.2.5 The noise monitoring locations are summarized in **Table 2.2** and shown in **Figure 3** .

Table 2.2: Summary of Impact Noise Monitoring Stations

Monitoring Location ID	Location	Type of Measurement*
CN_M1	In front of the HKBTS Staff & Students Quarters	Free Field
CN_M2	In front of the HKBTS Administration and Education Block	Façade

Note: Correction of +3 dB(A) shall be made to the free field measurements.

2.3 Results and Observations

2.3.1 The Action and Limit Levels of air quality monitoring are summarized in **Table 2.3**.

Table 2.3: Action and Limit Level for Impact Air Quality Monitoring

Monitoring Station	Action Level (µg/ m^3)	Limit Level (µg/ m^3)
1-hour TSP		
CA_M1(a)	339	500

2.3.2 The results of impact 1-hr TSP monitoring in this reporting quarter are summarized in **Table 2.4**. Graphical presentation of the monitoring result in the reporting quarter is given in **Appendix B.**

Table 2.4: Summary of Impact Air Quality Monitoring Results

Reporting Month	Monitoring Station	Average (µg/m^3)	Range (µg/ m^3)	Action Level (µg/ m^3)	Limit Level (µg/ m^3)
August 2022	CA_M1(a)	112.6	71.4 – 150.7	339	500
September 2022		94.4	40.3 – 190.1		
October 2022		112.3	74.4 – 179.8		

2.3.3 The Event and Action Plan for Air Quality is given in **Appendix C**

2.3.4 Summary of impact air quality exceedances recorded in the reporting quarter at each impact monitoring station is given in **Table 2.5**. No Action/ Limit Level exceedance was recorded during the reporting period.

Table 2.5: Summary of Impact Air Quality Exceedances

Monitoring Station	Exceedance Level	No. of Exceedances
CA_M1(a)	Action	0
	Limit	0
Total	Action	0
	Limit	0

2.3.5 The Action and Limit Levels of impact noise monitoring are summarized in **Table 2.6**.

Table 2.6: Action and Limit Levels for Impact Noise Monitoring

Parameter	Frequency
LAeq (30 min) (L10 and L90 will be recorded for reference)	At each station at 0700-1900 hours on normal weekdays at a frequency of once a week when construction activities are underway

2.3.6 The results of impact noise monitoring in this reporting quarter are summarized in **Table 2.7**. Graphical presentation of the monitoring result is given in **Appendix B.**

2.3.7 The Event and Action Plan for Construction Noise is given in **Appendix C**.

Table 2.7: Summary of Impact Noise Monitoring Results

Reporting Month	Monitoring Station	Average ($\mu g/m^3$)	Range ($\mu g/ m^3$)	Action Level ($\mu g/ m^3$)	Limit Level ($\mu g/ m^3$)
August 2022	CN_M1	62.6	60.1 – 65.6	When one documented complaint is received	70dB(A) during normal teaching period and 65 dB(A) during examination periods
	CN_M2	57.9	56.2 – 59.8		
September 2022	CN_M1	66.3	65.3 – 67.8		
	CN_M2	60.0	59.1 – 60.7		
October 2022	CN_M1	60.5	57.4 – 62.2		
	CN_M2	55.4	50.6 – 57.9		

2.3.8 Summary of impact noise exceedances recorded in the reporting quarter at each impact monitoring station are presented in **Table 2.8**. No exceedance was recorded during the reporting period.

Table 2.8: Summary of Impact Noise Exceedances

Monitoring Station	Exceedance Level	No. of Exceedance
CN_M1	Action	0
	Limit	0
CN_M2	Action	0
	Limit	0

2.3.9 Road traffic noise along Ning Ming Road was observed at CN_M1 & CN_M2 during the monitoring month. No effect that arose from the other special phenomena was noted during the current monitoring month.

2.3.10 The noise monitoring data was compared with the EIA predictions as summarized in **Table 2.9.**

Table 2.9: Comparison of Noise Monitoring Data with EIA Predictions

Reporting Month	Monitoring Station	EIA ID	Maximum Predicted Mitigated Construction Noise Level L_{eq} (30min) dB(A)	Maximum Construction Noise Level in the Reporting Month
August 2022	CN_M1	N1b	72	65.6
	CN_M2	N2	66	59.8
September 2022	CN_M1	N1b	72	67.8
	CN_M2	N2	66	60.7
October 2022	CN_M1	N1b	72	62.2
	CN_M2	N2	66	57.9

2.3.11 The construction noise monitoring result at CN_M1 and CN_M2 were below the Maximum Predicted Mitigated Construction Noise Level in the approved Environmental Impact Assessment (EIA) Report (Register No.: AEIAR-230/2021).

3. SITE INSPECTION AND AUDIT

3.1 Site Inspection

3.1.1 Site audits were carried out weekly to ensure that appropriate environmental protection and pollution control mitigation measures are properly implemented for the construction works activities associated with the Project.

3.1.2 A summary of the mitigation measures implementation schedule is provided in **Appendix D**.

3.1.3 In the reporting quarter, weekly site inspections were carried out. No outstanding issues were reported during the reporting quarter.

3.1.4 Details of observations recorded during the site inspections are presented in **Table 3.1**.

Table 3.1: Observations and Recommendations of Site Audit

Parameters	Date	Observations and Recommendations
Air Quality	5th September 2022	Grouting Station should be maintained semi-enclosed in 3 sides and top with tarpaulin sheet for fine dust control.
	7th October 2022	
	24th October 2022	
	13th September 2022	NRMM Label for regulated equipment shall be replaced
	19th September 2022	Cement bags should be covered entirely with tarpaulin sheet
Noise	Not Applicable	No particular observation
Water Quality	5th September 2022	Oil stain shall be removed from the surface
Chemical and Waste Management	Not Applicable	No particular observation
Landscape and Visual Impact	Not Applicable	No particular observation
Permit / Licenses	Not Applicable	No particular observation
Others	Not Applicable	No particular observation

3.2 Advice on the Solid and Liquid Waste Management Status

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

3.2.2 The quarterly summary of waste flow table is detailed in **Appendix E**.

3.2.3 If off-site disposal is required, the excavated marine mud from the land-based works shall be disposed of at the designated disposal site 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.

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

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

4.1 Non-compliance (Exceedances of Action & Limit levels)

4.1.1 No Action / Limit Levels exceedance was recorded for 1-hr TSP at CA_M1(a) in the reporting month.

4.1.2 No Action / Limit Level exceedance was recorded for construction noise at CN_M1 & CN_M2 in the reporting month.

4.2 Complaints, Notification of Summons and Prosecution

4.2.1 No environmental complaint, notification of summons and successful prosecution were received in the reporting quarter.

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

4.2.3 No corrective actions were required.

5. IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURE

5.1 Implementation Status

5.1.1 The Contractor had implemented environmental mitigation measures and requirements as stated in the EIA Report, the EP and EM&A Manual. **Appendix F** summarized the Implementation Status of Environmental Mitigation Measures.

6. CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

6.1.1 Air quality impact monitoring were carried out in the reporting quarter. No exceedance was recorded.

6.1.2 Noise impact monitoring were carried out in the reporting quarter. No exceedance was recorded.

6.1.3 Fourteen weekly site inspection were carried out in August 2022, September 2022 and October 2022. Recommendations on mitigation measures for Permit/ Licenses were given to the Contractor for remediating the deficiencies identified during the site inspections.

6.1.4 Six landscape and visual site audits were carried out in the reporting period. Recommendations on mitigation measures for Permit / Licenses were given to the Contractor for remediating the deficiencies identified during the site inspections.

6.1.5 Referring to the Contractor's information, no environmental complaint, notification of summons and successful prosecution was received in the reporting month.

6.2 Comment and Recommendations

6.2.1 The recommended environmental mitigation measures, as proposed in the EA report and EM&A Manual shall be effectively implemented to minimize the potential environment 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.

6.2.2 According to the environmental audit performed in the reporting quarter, the following recommendations were made:

Air Quality Impact

- The contractor was reminded that the grouting station should be maintained semi-enclosed in 3 sides and top with tarpaulin sheet for fine dust control.
- The contractor was reminded to replace the NRMM Label for regulated equipment.
- The contractor was reminded to cover the cement bags entirely with tarpaulin sheet.

Construction Noise Impact

- No specific observation was identified in the reporting quarter.

Water Quality Impact

- The contractor was reminded to remove the oil stain from the surface.

Chemical and Waste Management

- No specific observation was identified in the reporting quarter.

Landscape and Visual Impact

- No specific observation was identified in the reporting quarter.

Permit / Licenses

- No specific observation was identified in the reporting quarter.

Figure 1

Location of the proposed Sai O Trunk Sewer SPS

ISO A1 594mm x 841mm

Approved:

Checked:

Designer:

Project Management Initials:

843900 E

844200 E

844500 E

N

LEGEND:

SITE BOUNDARY

TOLO CHANNEL
(CHEK MUN)

832800 N

832500 N

832200 N

NIN MING ROAD

SAI SHA ROAD

NAI CHUNG

SAI O

SYMPHONY BAY
Villa Concerto

SYMPHONY BAY
Villa Rhapsody

Cheung Mok Tau
Pavilion Centre
for the Elderly

Hong Kong Baptist
Theological Seminary

Nai Chung Barbecue Site

Pump No. 3 Sai O

Plot File by: ZHUMZ 2020/8/20
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AECOM

PROJECT
項目

TOLO HARBOUR SEWERAGE OF UNSEWERED AREAS STAGE 2 - INVESTIGATION, DESIGN AND CONSTRUCTION

CLIENT
業主

渠務署
Drainage Services Department

CONSULTANT
工程顧問公司

AECOM Asia Company Ltd.
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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. 核狀

STATUS
階段

SCALE
比例

A1 1 : 1500

DIMENSION UNIT
尺寸單位

METRES

KEY PLAN
索引圖

PROJECT NO.
項目編號

60547289

CONTRACT NO.
合約編號

SHEET TITLE
圖紙名稱

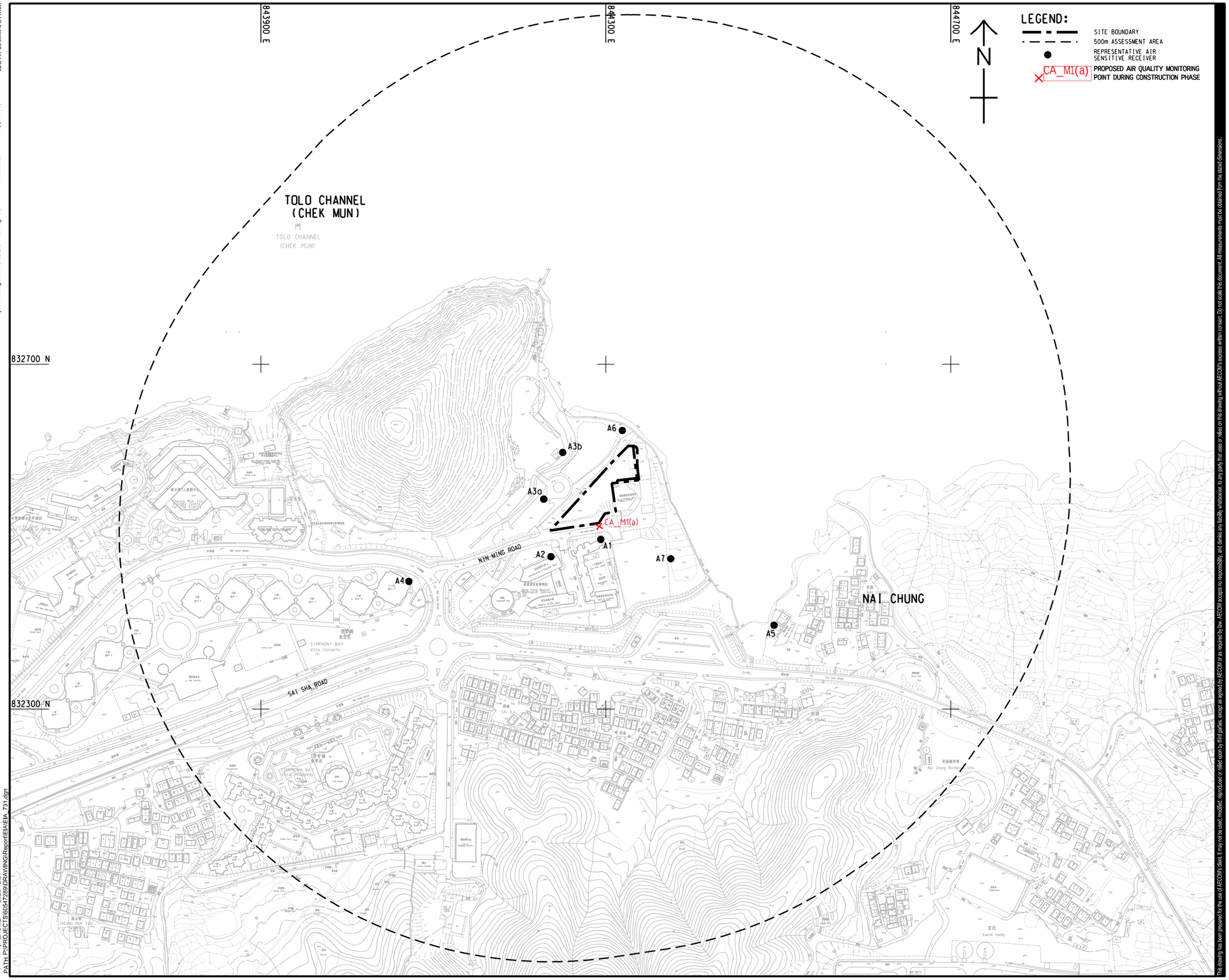
LOCATION OF THE PROPOSED SAI O TRUNK SEWER SEWAGE PUMPING STATION

SHEET NUMBER
圖紙編號

60547289/EM&A/FIGURE 1.1

Figure 2

Air Quality Monitoring Location



AECOM

PROJECT 項目

TOLO HARBOUR SEWERAGE OF UNSEWERED AREAS STAGE 2 - INVESTIGATION, DESIGN AND CONSTRUCTION

CLIENT 業主

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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 單位
METRES

KEY PLAN 索引圖

PROJECT NO. 項目編號
60547289

CONTRACT NO. 合約編號

SHEET TITLE 圖紙名稱
LOCATIONS OF PROPOSED DUST MOINTORING POINT

SHEET NUMBER 圖紙編號
60547289/EM&A/FIGURE 2.1

Figure 3

Noise Monitoring Location

ISO A1 594mm x 841mm

Approved:

Checked:

Designer:

Project Management Initials:

843900 E

844200 E

844500 E

N

832800 N

832500 N

832200 N

TOLO CHANNEL
(CHEK MUN)

LEGEND:

SITE BOUNDARY

300m ASSESSMENT AREA

REPRESENTATIVE NOISE SENSITIVE RECEIVER

CN_M1 PROPOSED NOISE MONITORING POINT DURING CONSTRUCTION PHASE

N3b

N3a

CN_M1

CN_M2

N1a

N1b

N2

N4

N5

NAI CHUNG

NIN MING ROAD

SAI SHA ROAD

SAI O

Cheung Mok Tau Holiday Centre for the Elderly

SYMPHONY BAY Villa Concerto

Hong Kong Baptist Theological Seminary

Nai Chung Barbecue Site

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AECOM

PROJECT
項目

TOLO HARBOUR SEWERAGE OF UNSEWERED AREAS STAGE 2 - INVESTIGATION, DESIGN AND CONSTRUCTION

CLIENT
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ISSUE/REVISION
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I/R 修訂	DATE 日期	DESCRIPTION 內容摘要	CHK. 核狀

STATUS
階段

SCALE 比例
A1 1 : 1500

DIMENSION UNIT 尺寸單位
METRES

KEY PLAN
索引圖

PROJECT NO. 項目編號
60547289

CONTRACT NO. 合約編號

SHEET TITLE
圖紙名稱

LOCATIONS OF PROPOSED NOISE MOINTORING POINT

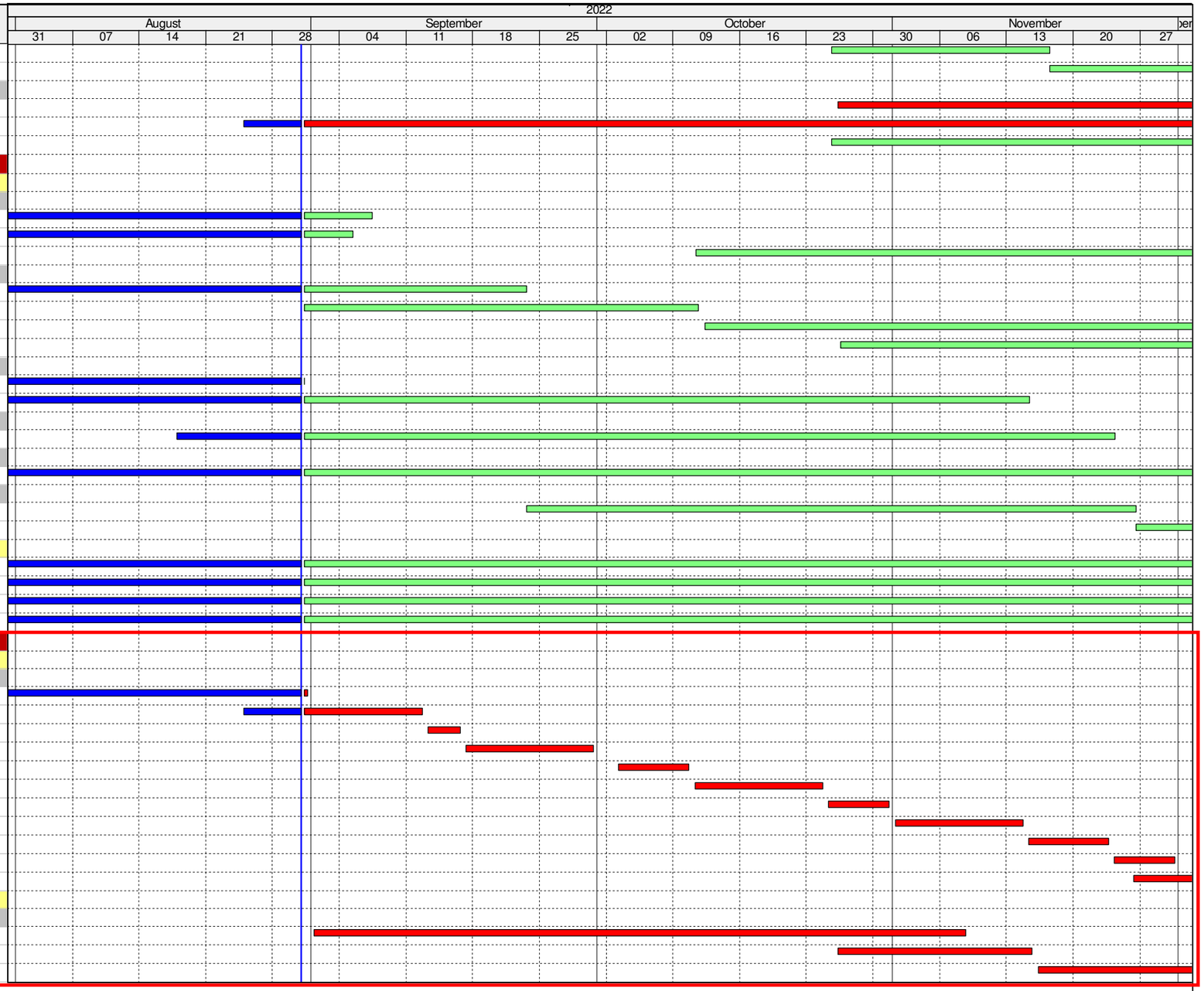
SHEET NUMBER
圖紙編號

60547289/EM&A/FIGURE 3.1

Appendix A

Construction Programme

ID	Activity	Days	Start	Finish
TTSPS1063	Waterproofing works	20	25-Oct-22	17-Nov-22
TTSPS1074	Place planter soil for Green Roof includes Irrigation System	20	17-Nov-22	10-Dec-22
External Works and ABWF/E&M Works				
TTSPS1120	E&M works	140	26-Oct-22	18-Apr-23
TTSPS1130	ABWF works (interior finish and building envelope)	112	25-Aug-22 A	31-Dec-22
TTSPS1132	Remaining Boundary Wall and Additional Manhole	90	25-Oct-22	14-Feb-23
Works Outside Green Area (Section 3 of the Works)				
(1) Pipe Jacking for DN1800 Rising Main				
Section 1 (684m) - Shaft 3 to Shaft 4				
RM1093	Lay twin DN630 pipes, pressure test and grouting to Shaft 4 (454m)	126	15-Mar-22 A	07-Sep-22
RM1095	Construct Shaft 3A	84	30-Aug-21 A	05-Sep-22
RM1098	Construct Inspection Chamber at Shaft 3A	78	11-Oct-22	13-Jan-23
Section 2 (615m) - Shaft 6 to Shaft 7				
RM1152	Lay twin DN630 pipes	132	02-Dec-21 A	23-Sep-22
RM1155	Grouting and testing for twin pipes	33	31-Aug-22	11-Oct-22
RM1280	Final pressure test (Shaft 1 to 7)	52	12-Oct-22	10-Dec-22
RM1300	Construct Manhole at Shaft 7	78	26-Oct-22	01-Feb-23
Section 3 (147m) - Shaft 5 to Shaft 4				
RM1320	Set Up in Shaft 5	24	23-Aug-21 A	31-Aug-22
RM1370	Construct Manhole at Shaft 4	78	18-Jul-22 A	15-Nov-22
Section 4 (312m) - Shaft 6 to Shaft 5				
RM1460	Construct Manhole at Shaft 6	78	18-Aug-22 A	24-Nov-22
Section 5 (420m) - Shaft 7 to Ma On Shan (Gravity Sewer by Trench Method)				
RM1290	Gravity sewer M4.01 to M4.15 (363m)	490	25-Oct-21 A	01-Jun-23
Final Pressure, Backfilling and Reinstatement				
RM1240	Final pressure test	53	23-Sep-22	26-Nov-22
RM1245	Backfilling and reinstatement at Shaft 4 and Shaft 7	53	26-Nov-22	03-Feb-23
Waterworks Outside Green Area with 4 WF (Refer to Detailed Prog)				
WW1110	Waterworks - Work Front 1 (659m)	947	02-Dec-19 A	28-Mar-23
WW1120	Waterworks - Work Front 2 (960m)	711	31-Jul-20 A	11-Mar-23
WW1130	Waterworks - Work Front 3 (1240m, 70%)	801	31-Mar-20 A	06-Dec-22
WW1140	Waterworks - Work Front 4 (1600m)	850	02-Jan-20 A	08-Mar-23
Sai O Pumping Station (Section 4)				
Pump Room				
ELS				
SOPS2020	Clutch pipe pile (140 nrs) and king post (3 nrs, avg 39m/pile) (2rigs)	70	31-May-22 A	31-Aug-22
SOPS2030	Instrumentation, dewatering well and pumping system	15	25-Aug-22 A	12-Sep-22
SOPS2040	Excavate to 500mm below S1 (3600 cu.m)	4	13-Sep-22	16-Sep-22
SOPS2050	Install S1, cast concrete packing (90 welding connections)	12	17-Sep-22	30-Sep-22
SOPS2060	Excavate to 500mm below S2 (3600 cu.m)	6	03-Oct-22	10-Oct-22
SOPS2070	Install S2, cast concrete packing (90 welding connections)	12	11-Oct-22	24-Oct-22
SOPS2080	Excavate to 500mm below S3 (3600 cu.m)	6	25-Oct-22	31-Oct-22
SOPS2090	Install S3, cast concrete packing (90 welding connections)	12	01-Nov-22	14-Nov-22
SOPS2100	Excavate to formation level	8	15-Nov-22	23-Nov-22
SOPS2110	Plate load test	6	24-Nov-22	30-Nov-22
SOPS2130	Install noise cover	24	26-Nov-22	23-Dec-22
Rising Main and Gravity Sewer				
ELS				
SOPS3000	Clutch pipe pile	56	01-Sep-22	08-Nov-22
SOPS3010	Instrumentation, dewatering well and pumping system	18	26-Oct-22	15-Nov-22
SOPS3020	Earthwork and ELS (3 layers of supports)	72	16-Nov-22	14-Feb-23



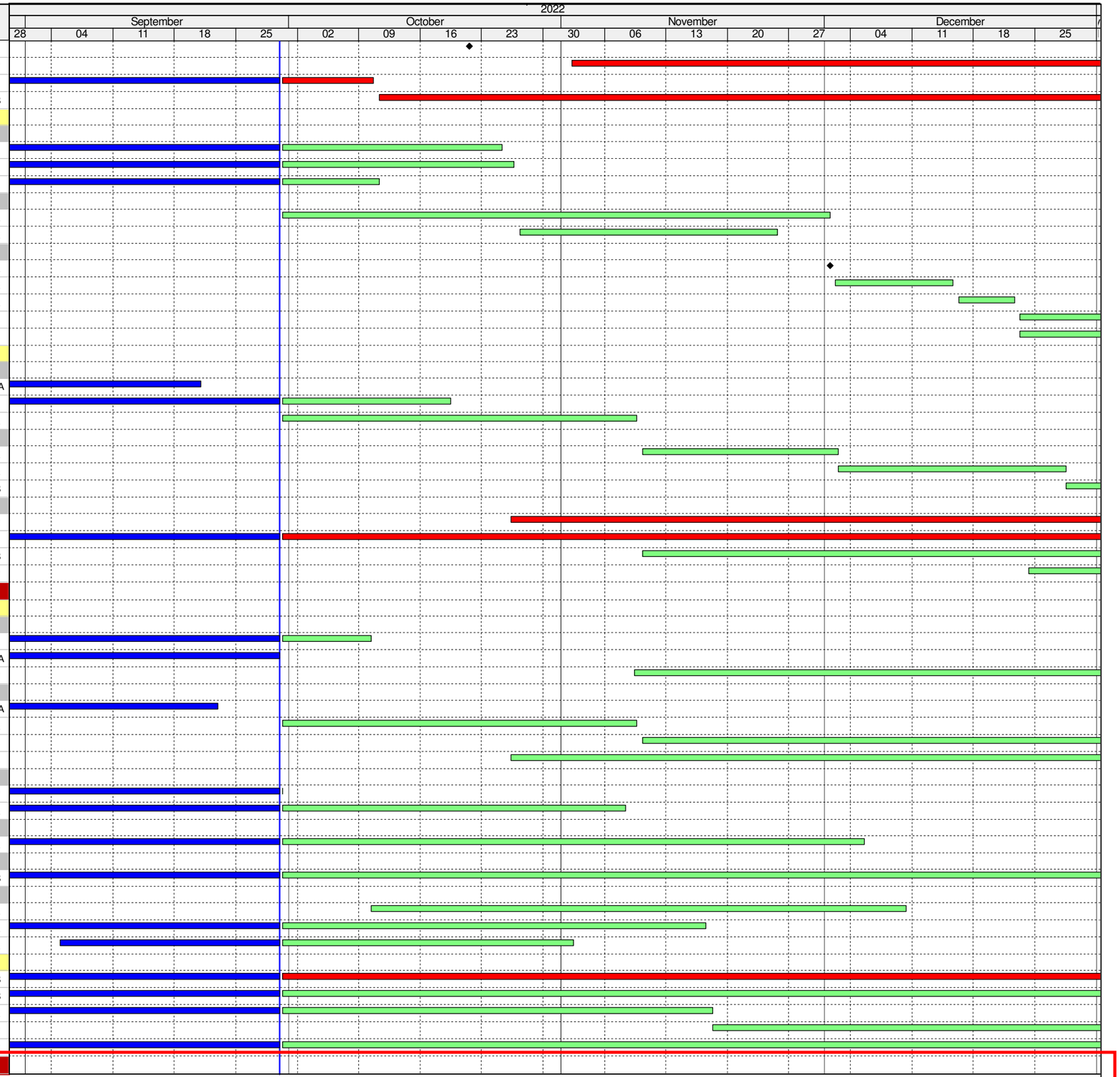
SAI SHA ROAD WIDENING

THREE MONTHLY ROLLING PROGRAMME AS OF 31/08/2022

SSR - RMCP 73W

Date	Revision	Checked	Appr...
31-Aug-22			

ID	Activity	Days	Start	Finish
TTR1500	Completion of FB Piling at Tseng Tau Road Westbound	0		21-Oct-22
TTR1518	Noise Barrier RW27-RW29 (say, 6 large bays)	80	02-Nov-22	09-Feb-23
TTR1522	RW 6 - BA14	36	26-Aug-22 A	10-Oct-22
TTR1524	RW 6 - RC works (15 bays)	170	11-Oct-22	09-May-23
Area 7.3 - Outstanding Works at Tseng Tau Road				
Additional Works at Tseng Tau Road				
A2130	Drainage & Waterworks near Site C	127	15-Apr-22 A	25-Oct-22
A2140	Revise road contour at Site C Entrance under EI270	70	23-May-22 A	26-Oct-22
A2180	Lower Telecom Duct for 132kV Lead-in	48	22-Jun-22 A	11-Oct-22
Stage 1 Eastbound Lane including Footpath / Cycle Track / Planter				
A2150	Footpath, cycle track and amenity	52	30-Sep-22	01-Dec-22
A2160	Raise manhole cover and road re-surfacing	26	27-Oct-22	25-Nov-22
Stage 2 - Westbound Lane				
A1725	Implement TTA (divert 1 lane traffic to Eastbound Lane)	0		01-Dec-22
A1730	Remove temp pavement	12	02-Dec-22	15-Dec-22
A1740	Excavation for road kerb	6	16-Dec-22	22-Dec-22
A1750	Construct K1 road kerb, 320m	18	23-Dec-22	16-Jan-23
A1752	Install manhole covers & gully gratings	12	23-Dec-22	09-Jan-23
Tseng Tau Pumping Station				
Remaining Structure				
TTSPS1091	Construct super structure of deodorization room	52	08-Jul-22 A	21-Sep-22 A
TTSPS1093	Construct transformer room	72	08-Jul-22 A	19-Oct-22
TTSPS1094	Staircase, plinth and other concrete works	33	30-Sep-22	09-Nov-22
Green Roof				
TTSPS1063	Waterproofing works	20	10-Nov-22	02-Dec-22
TTSPS1074	Place planter soil for Green Roof includes Irrigation System	20	02-Dec-22	28-Dec-22
TTSPS1075	Planting works on green roof	53	28-Dec-22	04-Mar-23
External Works and ABWF/E&M Works				
TTSPS1120	E&M works	140	26-Oct-22	18-Apr-23
TTSPS1130	ABWF works (interior finish and building envelope)	112	25-Aug-22 A	28-Jan-23
TTSPS1132	Remaining Boundary Wall and Additional Manhole	90	10-Nov-22	01-Mar-23
TTSPS1135	External works (fencing, planter, EVA, signage, etc)	82	24-Dec-22	06-Apr-23
Works Outside Green Area (Section 3 of the Works)				
(1) Pipe Jacking for DN1800 Rising Main				
Section 1 (684m) - Shaft 3 to Shaft 4				
RM1093	Lay twin DN630 pipes, pressure test and grouting to Shaft 4 (454m)	126	15-Mar-22 A	10-Oct-22
RM1095	Construct Shaft 3A	84	30-Aug-21 A	30-Sep-22 A
RM1098	Construct Inspection Chamber at Shaft 3A	78	09-Nov-22	15-Feb-23
Section 2 (615m) - Shaft 6 to Shaft 7				
RM1152	Lay twin DN630 pipes	132	02-Dec-21 A	23-Sep-22 A
RM1155	Grouting and testing for twin pipes	33	30-Sep-22	09-Nov-22
RM1280	Final pressure test (Shaft 1 to 7)	52	10-Nov-22	12-Jan-23
RM1300	Construct Manhole at Shaft 7	78	26-Oct-22	31-Jan-23
Section 3 (147m) - Shaft 5 to Shaft 4				
RM1320	Set Up in Shaft 5	24	23-Aug-21 A	30-Sep-22
RM1370	Construct Manhole at Shaft 4	78	18-Jul-22 A	08-Nov-22
Section 4 (312m) - Shaft 6 to Shaft 5				
RM1460	Construct Manhole at Shaft 6	78	18-Aug-22 A	05-Dec-22
Section 5 (420m) - Shaft 7 to Ma On Shan (Gravity Sewer by Trench Method)				
RM1290	Gravity sewer M4.01 to M4.15 (363m)	490	25-Oct-21 A	20-May-23
Final Pressure, Backfilling and Reinstatement				
RM1240	Final pressure test	53	10-Oct-22	10-Dec-22
RM1245	Backfilling and reinstatement at Shaft 4 and Shaft 7	53	27-Jun-22 A	17-Nov-22
RM1250	Backfilling and reinstatement at Shaft 6 and Shaft 5	53	05-Sep-22 A	02-Nov-22
Waterworks Outside Green Area with 4 WF (Refer to Detailed Prog)				
WW1110	Waterworks - Work Front 1 (659m)	947	02-Dec-19 A	02-May-23
WW1120	Waterworks - Work Front 2 (960m)	711	31-Jul-20 A	24-Mar-23
WW1130	Waterworks - Work Front 3 (1240m, 70%)	801	31-Mar-20 A	18-Nov-22
WW1135	Waterworks - Work Front 3, 2nd work front for remaining 30%	78	18-Nov-22	24-Feb-23
WW1140	Waterworks - Work Front 4 (1600m)	850	02-Jan-20 A	06-Feb-23
Sai O Pumping Station (Section 4)				



SAI SHA ROAD WIDENING

THREE MONTHLY ROLLING PROGRAMME AS OF 30/09/2022

SSR - RMCP 74W

Date	Revision	Checked	Appr...
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ELS				
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SOPS2050	Install S1, cast concrete packing (90 welding connections)	12	28-Sep-22 A	12-Oct-22
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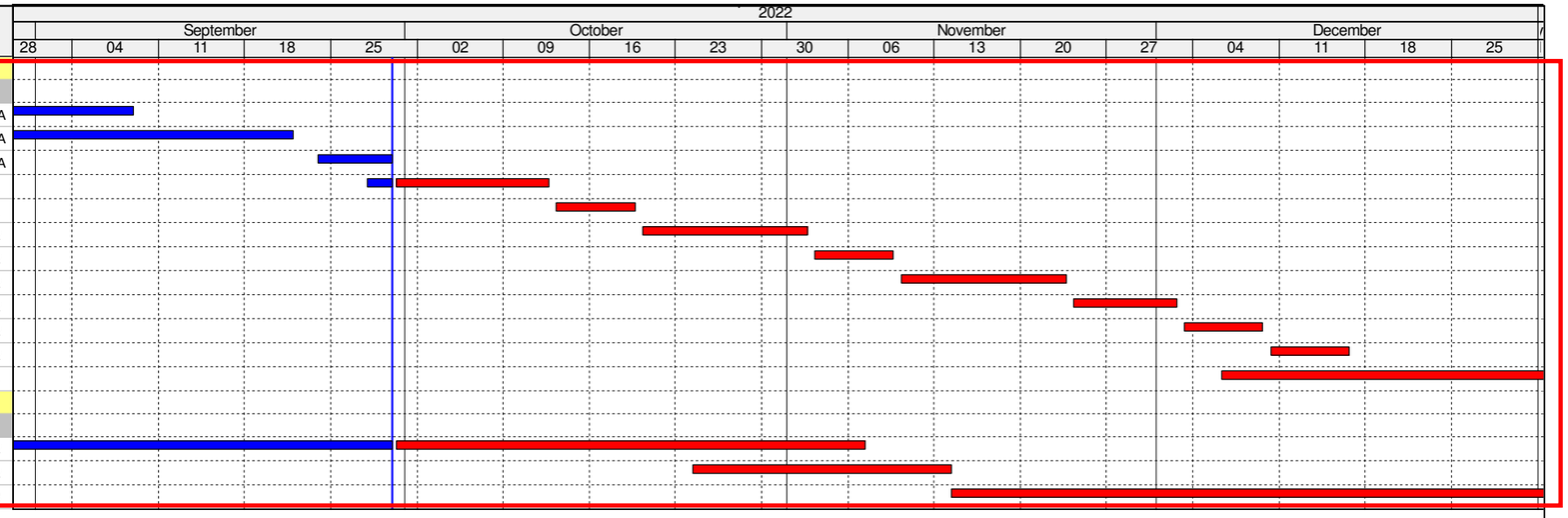
SOPS2070	Install S2, cast concrete packing (90 welding connections)	12	20-Oct-22	02-Nov-22
SOPS2080	Excavate to 500mm below S3 (3600 cu.m)	6	03-Nov-22	09-Nov-22
SOPS2090	Install S3, cast concrete packing (90 welding connections)	12	10-Nov-22	23-Nov-22
SOPS2100	Excavate to formation level	8	24-Nov-22	02-Dec-22
SOPS2110	Plate load test	6	03-Dec-22	09-Dec-22
SOPS2120	Blinding at -7.610mPD and vertical blinding including removal of formwork	6	10-Dec-22	16-Dec-22
SOPS2130	Install noise cover	24	06-Dec-22	05-Jan-23
Rising Main and Gravity Sewer				
ELS				
SOPS3000	Clutch pipe pile	56	22-Aug-22 A	07-Nov-22
SOPS3010	Instrumentation, dewatering well and pumping system	18	24-Oct-22	14-Nov-22
SOPS3020	Earthwork and ELS (3 layers of supports)	72	14-Nov-22	13-Feb-23



SAI SHA ROAD WIDENING

THREE MONTHLY ROLLING PROGRAMME AS OF 30/09/2022

SSR - RMCP 74W

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WW1140	Waterworks - Work Front 4 (1600m)	850	02-Jan-20 A	23-Feb-23
Sai O Pumping Station (Section 4)				
Pump Room				
ELS				
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SOPS2070	Install S2, cast concrete packing (90 welding connections)	12	18-Oct-22 A	31-Oct-22 A
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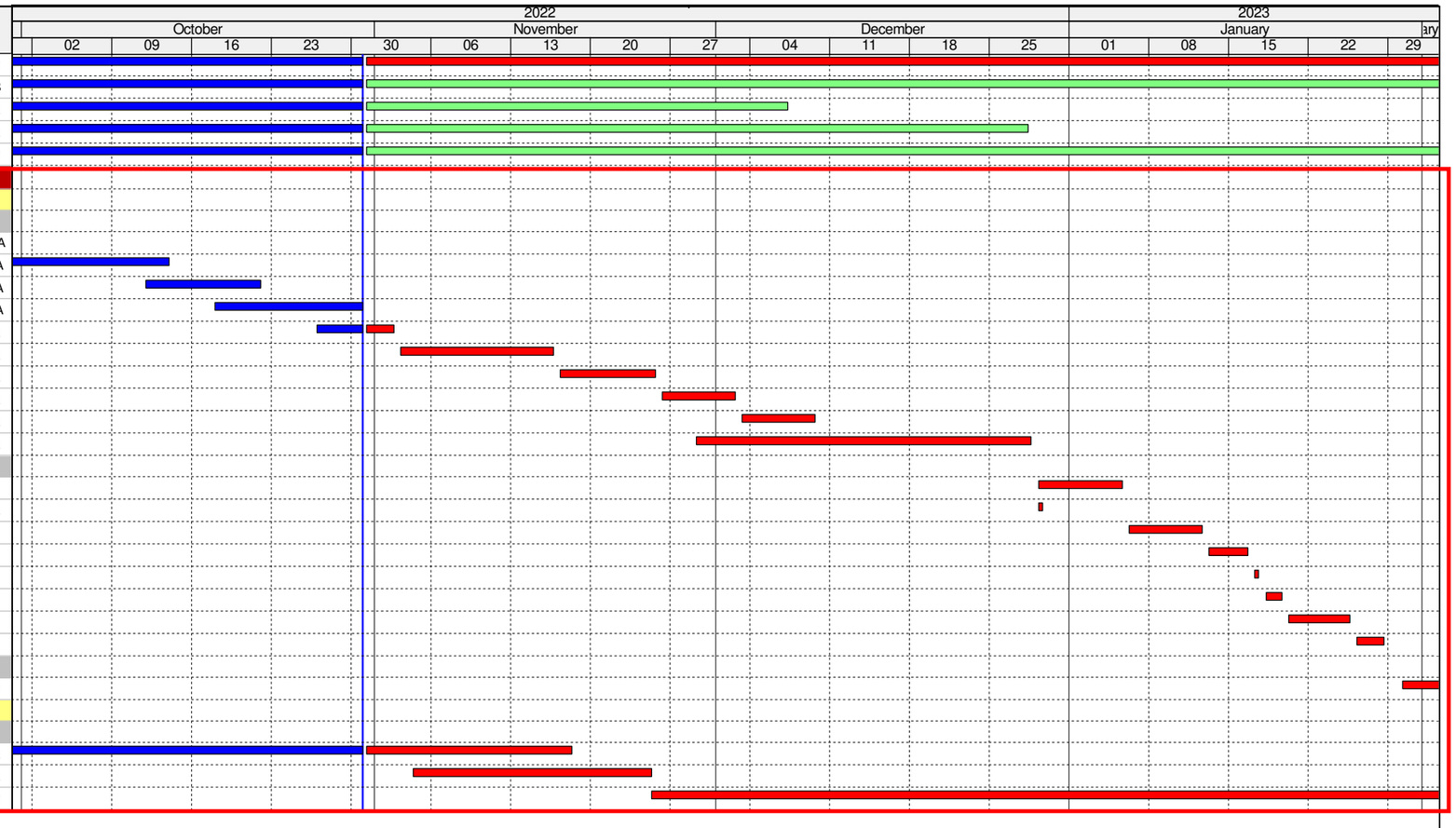
SOPS2090	Install S3, cast concrete packing (90 welding connections)	12	03-Nov-22	16-Nov-22
SOPS2100	Excavate to formation level	8	17-Nov-22	25-Nov-22
SOPS2110	Plate load test	6	26-Nov-22	02-Dec-22
SOPS2120	Blinding at -7.610mPD and vertical blinding including removal of formwork	6	03-Dec-22	09-Dec-22
SOPS2130	Install noise cover	24	29-Nov-22	28-Dec-22
Structure - Base Slab to CJ 500mm below S3 (-5.50 mPD)				
SOPS2200	Base slab - waterproofing on blinding (horizontal, sloping and vertical)	6	29-Dec-22	05-Jan-23
SOPS2210	Base slab - external formwork	1	29-Dec-22	29-Dec-22
SOPS2220	Base slab - rebar	6	06-Jan-23	12-Jan-23
SOPS2230	Base slab - internal formwork and kicker	3	13-Jan-23	16-Jan-23
SOPS2240	Base slab - concreting	1	17-Jan-23	17-Jan-23
SOPS2250	Base slab - remove formwork and trim CJ	2	18-Jan-23	19-Jan-23
SOPS2260	Base slab - waterproofing on vertical concrete face	2	20-Jan-23	25-Jan-23
SOPS2270	Base slab - Backfilling to 500mm below S3	3	26-Jan-23	28-Jan-23
Structure - Base Slab and Wall to CJ 500mm below S2 (-0.50 mPD))				
SOPS2300	Base slab - remove S3 and concrete packing	4	30-Jan-23	02-Feb-23
Rising Main and Gravity Sewer				
ELS				
SOPS3000	Clutch pipe pile	56	22-Aug-22 A	18-Nov-22
SOPS3010	Instrumentation, dewatering well and pumping system	18	04-Nov-22	25-Nov-22
SOPS3020	Earthwork and ELS (3 layers of supports)	72	25-Nov-22	24-Feb-23



SAI SHA ROAD WIDENING

THREE MONTHLY ROLLING PROGRAMME AS OF 31/10/2022

SSR - RMCP 75W

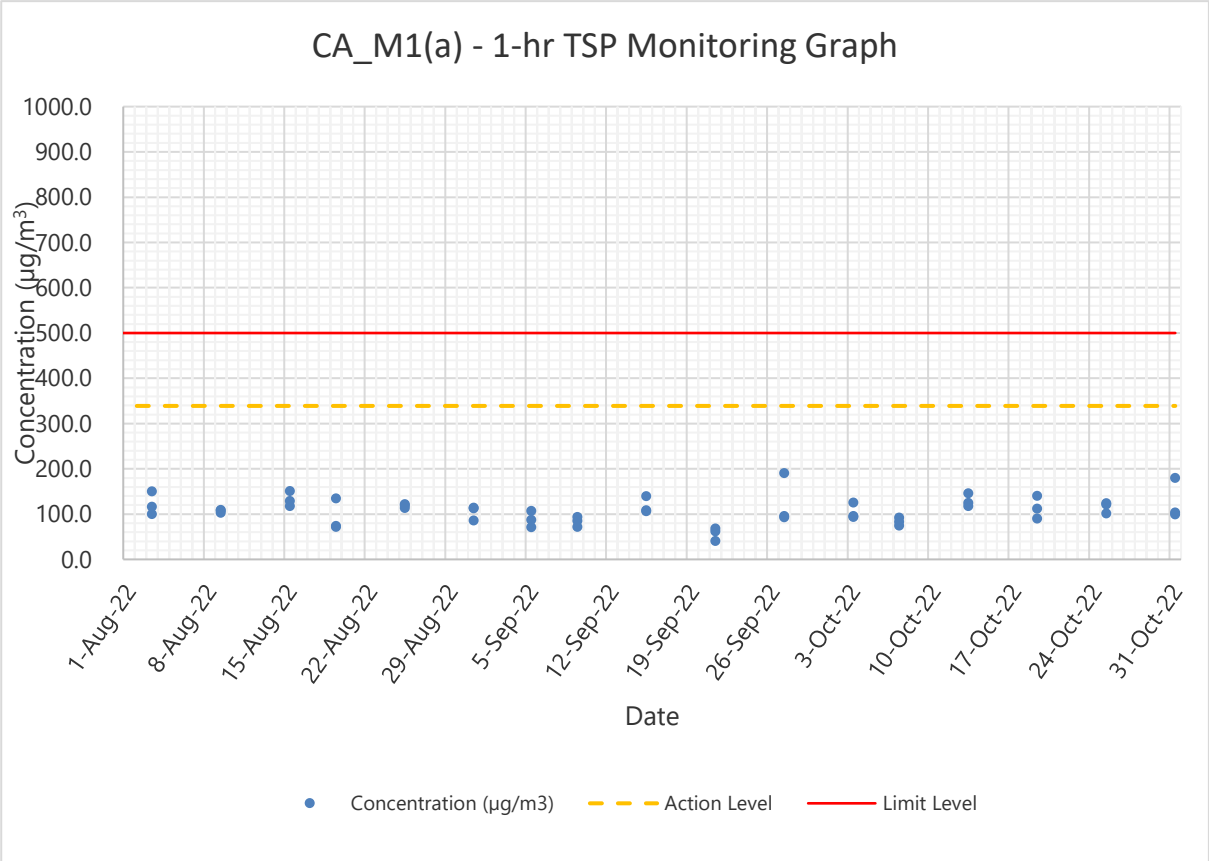
Date	Revision	Checked	Appr...
01-Nov-22			

Appendix B

Graphical Presentation of Monitoring Data

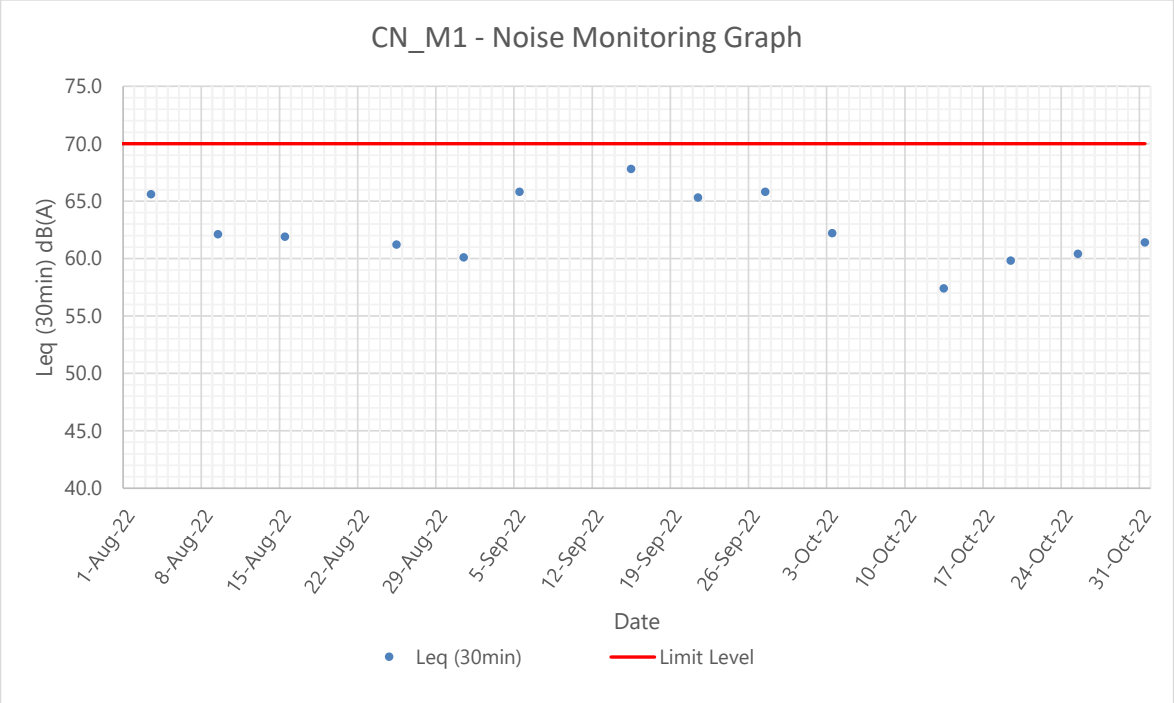
Air Quality Monitoring Results

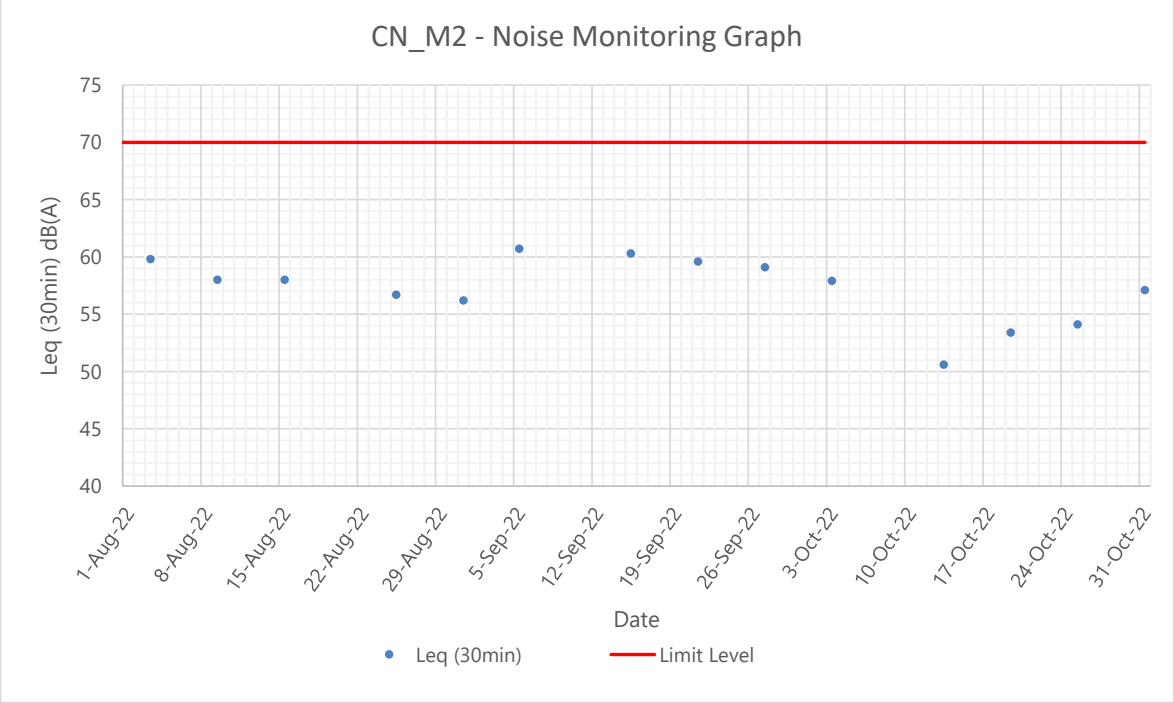
1-hr TSP Monitoring Graph



Noise Monitoring Results

Noise Monitoring Graph





Appendix C

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 Noise)

EVENT	ACTION			
	ET	IEC	ER	Contractor
Action Level	1. Notify IEC and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, ER and Contractor; 4. Discuss with the Contractor and formulate remedial measures; 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.

Appendix D

Environmental Mitigation

Implementation Schedule

Implementation Status of Environmental Mitigation Measures (Construction Phase)

EIA Ref. (No.)	Environmental Protection Measures (Construction Phase) [1]	Location & (Implementation Agent)	Implementation Status
	A) Air Quality		
3.7.1.1 (A1)	Sufficient dust suppression measures as stipulated under the *Air Pollution Control (Construction Dust) Regulation* (Cap. 311R), as well as good site practices and good housekeeping of the site should be properly implemented in order to minimise the construction dust generated. These measures include the followings::	All construction sites / construction phase / upon completion of all construction activities (Contractor)	
	a) Use of regular watering to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather;		Implemented
	b) Use of frequent watering for particularly dusty construction areas and areas close to ASRs;		Implemented
	c) Use of frequent watering or water sprinklers for major haul roads, material stockpiling areas and other dusty activities within the construction site;		Implemented
	d) 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 should be applied to aggregate fines;		Partially Implemented
	e) Provide hoarding of not less than 2.4 m high from ground level along the site boundary except for site entrance or exit;		Implemented
	f) Open temporary stockpiles should be avoided or covered. Prevent placing dusty material storage piles near ASRs;		N/A
	g) Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations;		N/O
	h) Establishment and use of vehicle wheel and body washing facilities at the exit points of the site;		Implemented
	i) Imposition of speed controls for vehicles on unpaved site roads, 8 km/hr is the recommended limit;		Implemented
	j) Routing of vehicles and position of construction plant should be at the maximum possible distance from ASRs;		Implemented
	k) Avoid position of material stockpiling areas, major haul roads and dusty works within the construction site close to concerned ASRs; and		Implemented
	l) Avoid unnecessary exposed earth.		Implemented
3.7.1.2 (A2)	Guidelines stipulated in EPD's *Recommended Pollution Control Clauses for Construction Contracts* should be incorporated in the contract documents to abate dust impacts. The clauses include:	All construction sites / construction phase / upon completion of all construction activities (Contractor)	
	a) The contractor shall observe and comply with the *Air Pollution Control Ordinance* and its subsidiary regulations, particularly the *Air Pollution Control (Construction Dust) Regulation.*		Implemented
	b) The contractor shall undertake at all times to prevent dust nuisance as a result of the construction activities.		Implemented
	c) The contractor shall ensure that there will be adequate water supply / storage for dust suppression.		Implemented
	d) The contractor shall devise, arrange methods of working and carrying out the works in such a manner so as to minimise dust impacts on the surrounding environment, and shall provide experienced personnel with suitable training to ensure that these methods are implemented.		Implemented
	e) Before the commencement of any work, the contractor may require to submit the methods of working, plant, equipment and air pollution control system to be used on the site for the engineer inspection and approval.		Implemented
3.4.1.4 (A3)	Control on fuel combustion from the use of PMEs	All construction sites / construction phase / upon completion of all construction activities (Contractor)	
	a) Legal control on the types of fuel allowed for use and their sulphur contents in commercial and industrial processes should be observed.		Implemented
	b) Only approved or exempted non-road mobile machinery should be allowed to be used in construction sites.		Implemented
	c) All construction plants are required to use ultra-low-sulphur diesel (ULSD) (defined as diesel fuel containing not more than 0.005% sulphur by weight).		Implemented

Note:

(1) Detailed EIA report and EM&A Manual reference refer to the Appendix B of approved EM&A Manual.

N/A: Not Available, N/O: Not Observed.

Implementation Status of Environmental Mitigation Measures (Construction Phase)

EIA Ref. (No.)	Environmental Protection Measures (Construction Phase) [1] B) Noise	Location & (Implementation Agent)	Implementation Status
4.8.1.2 (B1)	Good Site Practice The site practices listed below should be followed during construction works:	All construction sites / construction phase / upon completion of all construction activities (Contractor)	
	a) Only well-maintained PME to be operated on site and should be serviced regularly during construction;		Implemented
	b) Silencers or mufflers on construction equipment should be utilised (if appropriate) and should be properly maintained during the construction;		N/A
	c) Mobile plant, if any, should be sited as far away from NSRs as possible;		Implemented
	d) 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
	e) Plant known to emit noise strongly in one direction should, wherever possible, be orientated to direct noise away from the nearby NSRs; and		Implemented
	f) Material stockpiles and other structures should be effectively utilised, wherever practicable, in screening noise from on-site construction activities		Implemented
4.8.1.3 – 4.8.1.4 & Table 7 (B2)	Use of Quiet PME	All construction sites / construction phase / upon completion of all construction activities (Contractor)	Implemented
	The Contractors may adopt alternative quiet PME as long as it can be demonstrated that they would not result in construction noise impacts worse than those predicted in this EIA Report. Use of quiet plant should be made reference to the Powered Mechanical Equipment (PME) listed in the Technical Memorandum or the Quality Powered Mechanical Equipment (QPME) / other commonly used PME listed in Environmental Protection Department (EPD) web pages as far as possible which includes the Sound Power Level (SWLs) for specific quiet PME.		
4.8.1.5 (B3)	Use of Movable Noise Barriers/Acoustic Mats	All construction sites / construction phase / upon completion of all construction activities (Contractor)	Implemented
	Movable noise barriers that can be placed close to the construction equipment and moved along with the PME are effective for screening noise from NSRs. A typical design which has been used locally is a wooden framed barrier with a cantilevered upper portion of superficial density no less than 10 kg/m² on a skid footing with internal sound absorptive lining. This measure is particularly effective for low level zone of NSRs. A longer cantilevered top cover would be required to achieve screening benefits at upper floors of NSRs. The Contractor shall be responsible for the design and actual position of the movable noise barriers with due consideration given to the position and size of the PME, and the requirement of intercepting the line-of-sight from the NSRs to the PME, as well as ensuring that the barriers should have no opening and gap. It is anticipated that properly designed noise barriers would achieve a 5 dB(A) reduction for mobile PME and a 10 dB(A) reduction for static PME. Acoustic mat with surface mass of not less than 7kg/m2 would be used for plant items such as piling, oscillator and a 10 dB(A) noise reduction is anticipated.		
4.8.1.7 (B4)	Scheduling of Noisy Activities to outside Examination Period of HKBTS	All construction sites / construction phase / upon completion of all construction activities (Contractor)	
	To minimise the construction noise impact on HKBTS, the use of piling (oscillator) in ELS and concurrent use of concrete lorry mixer with other PMEs in steel fixing and concreting of structure should be avoided during the examination period of HKBTS.		Implemented
	Contractor should keep close communication with the operator of HKBTS to obtain the updated schedule of examination at the time conducting of the relevant construction works.		Implemented

Note:
(1) Detailed EIA report and EM&A Manual reference refer to the Appendix B of approved EM&A Manual.
N/A: Not Available, N/O: Not Observed.

Implementation Status of Environmental Mitigation Measures (Construction Phase)

EIA Ref. (No.)	Environmental Protection Measures (Construction Phase) [1]	Location & (Implementation Agent)	Implementation Status
	C) Water Quality		
5.8.1.1 (C1)	Construction Site Runoff	All construction sites / construction phase / upon completion of all construction activities (Contractor)	
	Proper site management measures should be implemented to control site runoff and drainage, and thereby prevent high sediment loadings from entering nearby watercourses. The contractor should follow the practices, and be responsible for the design, construction, operation and maintenance of all the mitigation measures as specified in ProPECC PN 1/94 "*Construction Site Drainage*". The design of the mitigation measures should be submitted by the contractor to the engineer for approval.		
	These mitigation measures should include the following practices:		
	a) At the start of site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct storm water to silt removal facilities.		Implemented
	b) Sand / silt removal facilities such as sand / silt traps and sediment basins should be provided to remove sand / silt particles from runoff to meet the requirements of the TM standard under the WPCO. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94, which states that the retention time for silt / sand traps should be 5 minutes under maximum flow conditions.		Implemented
	c) All drainage facilities and erosion and sediment control structures should always be regularly inspected and maintained to ensure proper and efficient operation and particularly during rainstorms. Deposited silt and grit should be regularly removed, at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.		Implemented
	d) Measures should be taken to minimise the ingress of site drainage into excavations. Water pumped out from foundation excavations should be discharged into storm drains via silt removal facilities.		Implemented
	e) If surface excavation works cannot be avoided during the wet season (April to October), temporarily exposed slope / soil surfaces should be covered by a tarpaulin or other means, as far as practicable, and temporary access roads should be protected by crushed stone or gravel, as excavation proceeds. Interception channels should be provided (e.g. along the crest / edge of the excavation) to prevent storm runoff from washing across exposed soil surfaces. Arrangements should always be in place to ensure that adequate surface protection measures can be safely carried out well before the arrival of a rainstorm. Other measures that need to be implemented before, during and after rainstorms are summarised in ProPECC PN 1/94.		Implemented
	f) All vehicles and plant should be cleaned before leaving a construction site. An adequately designed and sited wheel washing facility should be provided at every construction site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains.		Implemented
	g) Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric during rainstorms.		Implemented
5.8.1.2 – 5.8.1.3 (C2)	General Construction Activities	All construction sites / construction phase / upon completion of all construction activities (Contractor)	
	a) Debris and refuse generated on-site should be collected, handled and disposed of properly to avoid entering any nearby water bodies and public drainage system.		Implemented
	b) Stockpiles of cement and other construction materials should be kept covered when not being used.		Implemented
	c) Oils and fuels should only be used and stored in designated areas, which have pollution prevention facilities.		Implemented
	d) All fuel tanks and storage areas should be provided with locks and be sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank. Rainwater in the bunds should be cleared after each rain event. Waste oils, fuels and solvents collected within the bund should be handled and treated as chemical waste.		Implemented
5.8.1.4 (C3)	Sewage Effluent	All construction sites / construction phase / upon completion of all construction activities (Contractor)	Implemented
	Temporary sanitary facilities, such as portable chemical toilets, should be employed on-site where necessary to handle sewage from the workforce. A licensed contractor would be responsible for appropriate disposal of waste matter and maintenance of these facilities.		

EIA Ref. (No.)	Environmental Protection Measures (Construction Phase) [1]	Location & (Implementation Agent)	Implementation Status
	C) Water Quality		
5.8.1.5 (C4)	Construction Works in Close Proximity of Inland Waters The practices outlined in ETWB TC (Works) No. 5/2005 "Protection of natural streams/rivers from adverse impacts arising from construction works" should be adopted where applicable to minimise the water quality impacts upon any natural streams or surface water systems.	All construction sites / construction phase / upon completion of all construction activities (Contractor)	N/A

Note:
(1) Detailed EIA report and EM&A Manual reference refer to the Appendix B of approved EM&A Manual.
N/A: Not Available, N/O: Not Observed.

Implementation Status of Environmental Mitigation Measures (Construction Phase)

EIA Ref. (No.)	Environmental Protection Measures (Construction Phase) [1] D) Waste Management	Location & (Implementation Agent)	Implementation Status
6.5.1.3 (D1)	Good Site Practices Recommendations for good site practices during the construction phase include:	All construction sites / construction phase / upon completion of all construction activities (Contractor)	
	a) Nomination of approved personnel, such as a site manager, to be responsible for implementation of good site practices, arrangements for waste collection and effective disposal to an appropriate facility;		Implemented
	b) Training of site personnel in site cleanliness, concepts of waste reduction, reuse and recycling, proper waste management and chemical waste handling procedures;		Implemented
	c) Provision of sufficient waste reception / disposal points, and regular collection of waste;		Implemented
	d) Adoption of appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers;		Implemented
	e) Provision of regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors;		Implemented
	f) Adoption of a recording system for the amount of wastes generated, recycled and disposed (including the disposal sites); and		Implemented
	g) Preparation of Waste Management Plan (WMP), as part of the Environmental Management Plan (EMP).		Implemented
6.5.1.4 (D2)	Waste Reduction Measures Recommendations to achieve waste reduction are discussed as follow:	All construction sites / construction phase / upon completion of all construction activities (Contractor)	
	a) 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
	b) 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
	c) Recycle any unused chemicals or those with remaining functional capacity;		Implemented
	d) Maximise the use of reusable steel formwork to reduce the amount of C&D materials;		Implemented
	e) Adopt proper storage and site practices to minimise the potential for damage to, or contamination of construction materials;		Implemented
	f) Plan the delivery and stock of construction materials carefully to minimise the amount of waste generated; and		Implemented
	g) Minimise over ordering and wastage through careful planning during purchasing of construction materials.		Implemented
6.5.1.6– 6.5.1.7 (D3)	Reducing and Reuse of C&D Materials	All construction sites / construction phase / upon completion of all construction activities (Contractor)	
	a) 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 minimise 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.		Implemented
	b) To minimise off-site disposal of inert C&D material, the excavated inert materials with suitable characteristics / size should be reused on-site as fill material as far as practicable, such as for backfilling of the box culvert and drainage pipe works.		Implemented
	c) Prior to disposal of non-inert C&D materials, wood, steel and other metals should also be separated for reuse and / or recycle where practicable so as to minimise the quantity of waste to be disposed of to landfill.		Implemented
6.5.1.8 (D4)	Storage of C&D Materials Suitable areas should be designated within the works site boundaries for temporary stockpiling of C&D material. Within stockpile areas, the following measures should be taken to control potential environmental impacts or nuisance:	All construction sites / construction phase / upon completion of all construction activities (Contractor)	
	a) cover material during heavy rainfall;		Implemented
	b) locate stockpiles to minimise potential visual impacts; and		Implemented
	c) minimise land intake of stockpile areas as far as possible.		Implemented

EIA Ref. (No.)	Environmental Protection Measures (Construction Phase) [1] D) Waste Management	Location & (Implementation Agent)	Implementation Status
6.5.1.9 (D5)	Disposal of C&D Materials	All construction sites / construction phase / upon completion of all construction activities (Contractor)	
	a) In order to monitor the disposal of C&D materials at the designated public fill reception facility and landfill and to control fly-tipping, a trip-ticket system should be included.		Implemented
	b) When disposing inert C&D materials at a public filling reception facility, the material shall only consist of soil, rock, concrete, brick, cement plaster / mortar, inert building debris, aggregates and asphalt. The material shall be free from marine mud, household refuse, plastic, metals, industrial and chemical waste, animal and vegetable matter, and other material considered to be unsuitable by the Filling Supervisor.		Implemented
6.5.1.10 & 6.5.1.12 (D6)	Chemical Wastes	Construction and Operational Phase	
	a) If chemical waste is produced at the construction site / the SPS, the contractor would be required to register with the EPD as a Chemical Waste Producer.		Implemented
	b) Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately.		Implemented
	c) Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosives, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc.		Implemented
	d) The contractor shall use a licensed collector to transport and dispose of the chemical wastes at the CWTC or other licensed facility in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.		Implemented
6.5.1.11 & Table 6.2 (D7)	General Refuse	All construction sites / construction phase / upon completion of all construction activities (Contractor)	
	a) General refuse should be stored in enclosed bins or compaction units separate from C&D materials and chemical wastes.		Implemented
	b) A reputable waste collector should be employed by the contractor to remove general refuse / screenings from the site on a regular basis to minimise odour, pest and litter impacts.		Implemented
	c) Clearly labelled recycling bins should be provided on site to encourage segregation and recycling of aluminium and plastic wastes, and wastepaper to reduce general refuse production.		Implemented
	d) The contractor should carry out an education programme for workers in avoiding, reducing, reusing and recycling of materials generation. Posters and leaflets advising on the use of the bins should also be provided in the site as reminders. The recyclable waste materials should then be collected by reliable waste recycling agents on a regular basis.		Implemented
	e) The collected general refuse will be disposed of at NENT landfill.		Implemented

Note:
(1) Detailed EIA report and EM&A Manual reference refer to the Appendix B of approved EM&A Manual.
N/A: Not Available, N/O: Not Observed.

Implementation Status of Environmental Mitigation Measures (Construction Phase)

EIA Ref. (No.)	Environmental Protection Measures (Construction Phase) [1]	Location & (Implementation Agent)	Implementation Status
	E) Landscape and Visual		
Table 10.9 (E1)	CM1 – Preservation of Trees Trees to be retained in accordance with DEVB TCW No. 4/2020 - Tree Preservation.	All construction sites / construction phase / upon completion of all construction activities (Contractor)	N/A
Table 10.9 (E2)	CM2 – Compensatory Tree Planting Any trees to be felled under the Project shall be compensated in accordance with DEVB TCW No. 4/2020 - *Tree Preservation.*	All construction sites / construction phase / upon completion of all construction activities (Contractor)	N/A
Table 10.9 (E3)	CM3 – Control of Night-time Lighting Glare Any lighting provision of the construction works at night shall be carefully controlled to prevent light overspill to the nearby VSRs and into the sky.	All construction sites / construction phase / upon completion of all construction activities (Contractor)	Implemented
Table 10.9 (E4)	CM4 – Erection of Decorative Screen Hoarding Decorative Hoarding, which is compatible with the surrounding settings, shall be erected during construction to minimise the potential landscape and visual impacts due to the construction works and activities.	All construction sites / construction phase / upon completion of all construction activities (Contractor)	Implemented
Table 10.9 (E5)	CM5 – Management of Construction Activities and Facilities The facilities and activities at works sites and areas, which include site office, temporary storage areas, temporary works etc., shall be carefully managed and controlled on the height, deposition and arrangement to minimise any potential adverse landscape and visual impacts.	All construction sites / construction phase / upon completion of all construction activities (Contractor)	Implemented
Table 10.9 (E6)	CM6 – Reinstatement of Temporarily Disturbed Landscape Areas All hard and soft landscape areas disturbed temporarily during construction due to temporary excavations, temporary works sites and works areas shall be reinstated to equal or better quality, to the satisfaction of the relevant Government Departments.	All construction sites / construction phase / upon completion of all construction activities (Contractor)	N/A

Note:
(1) Detailed EIA report and EM&A Manual reference refer to the Appendix B of approved EM&A Manual.
N/A: Not Available, N/O: Not Observed

Appendix E

Waste Flow Table

Waste Flow Table (October 2022)

Monthly Ending	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated		Actual Quantities of Recyclables Generation			
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Chemical Waste	General Refuse	Felled Trees	Metals	Paper / Cardboard Packaging	Plastics
	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)
2022 Feb	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
2022 Mar	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
2022 Apr	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
2022 May	0.000	0.000	0.000	0.000	0.000	0.000	0.000	61.760	0.000	0.000	0.000	0.000
2022 Jun	0.649	0.000	0.000	0.000	0.649	0.000	0.000	0.610	0.000	0.000	0.000	0.000
2022 Jul	0.711	0.000	0.000	0.000	0.711	0.000	0.000	8.990	0.000	0.000	0.000	0.000
2022 Aug	0.839	0.000	0.000	0.000	0.839	0.000	0.000	10.890	0.000	0.000	0.000	0.000
2022 Sep	2.724	0.000	0.000	0.678	2.045	0.000	0.000	5.660	0.000	0.000	0.000	0.000
2022 Oct	4.924	0.000	0.000	2.467	2.457	0.000	0.000	7.510	0.000	0.000	0.000	0.000
2022 Nov												
2022 Dec												
Total	9.846	0.000	0.000	3.146	6.701	0.000	0.000	95.420	0.000	0.000	0.000	0.000

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.

Appendix F

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 Aspects	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 Aspects	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