

Monthly EM&A Report (January 2024)

0185/21/ED/612 02

Sai O Trunk Sewer Sewage Pumping Station



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21 February 2024

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 <u>Monthly EM&A Report (January 2024)</u>

Reference is made to the Environmental Team's submission of the Monthly EM&A Report for January 2024 (ET's ref.:0185/21/ED/0612 02) certified by the ET Leader and provided to us via e-mail on 21 February 2024.

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 12.4.1.1 of EM&A Manual for the captioned project.

The ET Leader is reminded that it is the ET's responsibility to ensure the report be timely submitted to the Director of Environmental Protection as per Conditions 3.4 of the EP-597/2021.

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 Fugro

SGJV

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

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Ramboll Hong Kong Limited 英環香港有限公司

21/F, BEA Harbour View Centre, 56 Gloucester Road, Wan Chai, Hong Kong Tel: 852.3465 2888 Fax: 852.3465 2899 www.ramboll.com

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Client Information

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

Environmental Team

Initials	Name	Role	Signature
МР	Calvin M.P. Leung	Environmental Team Leader	Caloin Leing
КН	Toby K.H. Wan	Environmental Consultant	C.R.M.



EXECUTIVE SUMMARY

- i. This Monthly 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 24th Monthly EM&A Report for the Project which summaries findings of the EM&A programme during the reporting period from 1st January 2024 to 31st January 2024.

Breaches of Environmental Quality Performance Limits (Action & Limit levels)

- iii. No Action and Limit Level exceedance was recorded for air quality and construction noise monitoring in the reporting month.
- iv. No corrective actions were required according to the Event-Action Plans.

Complaint Log

v. No complaints were received in the reporting period.

Notifications of any Summons and Successful Prosecutions

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

Reporting Change

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

Future Key Issues

viii. The main works will be anticipated in the next month are as follow:

ABWF Works

- Interior finish pump room
- Exterior and roof finish
- External works

E&M Works and OP

- CLP works transformer room
- E&M works pump room below and above ground



Contents

1.	INTRODUCTION	8
1.1	Background	8
1.2	Project Organization	9
1.3	Construction Programme and Activities	10
1.4	Works undertaken during the month	10
1.5	Status of Environmental Licences, Notification and Permits	11
2.	AIR QUALITY	12
2.1	Monitoring Requirement	12
2.2	Monitoring Equipment	12
2.3	Monitoring Parameters and Frequency	12
2.4	Monitoring Methodology	13
2.5	Maintenance and Calibration	14
2.6	Monitoring Locations	14
2.7	Monitoring Results	14
3.	NOISE	16
3.1	Monitoring Requirement	16
3.2	Monitoring Equipment	16
3.3	Monitoring Parameters and Frequency	16
3.4	Monitoring Methodology	17
3.5	Maintenance and Calibration	17
3.6	Monitoring Locations	18
3.7	Monitoring Results	18
3.8	Comparison of Noise Monitoring data with EIA Predictions	19
4.	SITE INSPECTION AND AUDIT	20
4.1	Site Inspection	20
4.2	Advice on the Solid and Liquid Waste Management Status	20
5.	NON-COMPLIANCE, COMPLAINTS, NOTIFICATIONS OF SUMMONS AND SUCCESSFE	JL
	PROSECUTIONS	21
5.1	Non-compliance (Exceedances of AL levels)	21
5.2	Complaints, Notification of Summons and Prosecution	21
6.	IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURE	22
6.1	Implementation Status	22
7.	FUTURE KEY ISSUES	23
7.1	Construction Programme for the Next Month	23
7.2	Key Issues for the Coming Month	23
7.3	Monitoring Schedules for the Next Month	23
0185/2 Page 4		UGRO

8.	CONCLUSION AND RECOMMENDATION	24
8.1	Conclusions	24
8.2	Comment and Recommendations	24



Tables

- Table 1.1
 Contact Information of Key Personnel
- **Table 1.2** Environmental Licenses, Notification and Permits Summary
- **Table 2.1**Air Quality Monitoring Equipment
- **Table 2.2** Monitoring Parameters and Frequencies of Noise Monitoring
- Table 2.3
 Air Quality Monitoring Locations
- Table 2.4
 Summary of Air Quality Monitoring Results
- Table 3.1
 Construction Noise Monitoring Equipment
- **Table 3.2** Monitoring Parameters and Frequencies of Noise Monitoring
- **Table 3.3** Construction Noise Monitoring Location
- **Table 3.4** Summary of Construction Noise Monitoring Results
- **Table 3.5** Comparison of Noise monitoring data with EIA predictions



Figures

- Figure 1.1 Location of the proposed Sai O Trunk Sewer SPS
- Figure 2.1 Air Quality Monitoring Location
- Figure 3.1 Noise Monitoring Locations

Appendices

- Appendix A Project Organization Chart
- Appendix B Construction Programme
- **Appendix C** Equipment Calibration Certificates
- **Appendix D** Environmental Monitoring Schedule
- **Appendix E** Air Quality & Construction Noise Monitoring Results
- **Appendix F** Air Quality & Construction Noise Monitoring Graphs
- Appendix G Action and Limit Level
- Appendix H Event and Action Plan
- Appendix I Weather and Meteorological Conditions during Reporting Month
- Appendix J Wind Data
- **Appendix K** Summary of Site Environmental Audit in the Reporting Month
- Appendix L Waste Flow Table
- **Appendix M** Cumulative Statistics on Environmental Complaints, Notifications of Summons and Successful Prosecutions
- **Appendix N** Implementation Status of Environment Mitigation Measures (Construction Phase)
- Appendix O Outstanding Issues and Deficiencies



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 20,600m³ 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**.
- 1.1.3 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 24th Monthly EM&A report to document the findings of site inspection activities and EM&A programme for this project from 1st January 2024 to 31st January 2024 (reporting period) and is submitted to fulfil Condition 3.4 of the EP and Section 12.4 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 A**. The key personnel contact names and numbers are summarized in **Table 1.1**.

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

Table 1.1 – Contact Information of Key Personnel



1.3 Construction Programme and Activities

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

1.4 Works undertaken during the month

1.4.1 Major construction activities were undertaken in the reporting month were:

ABWF Works

- Interior finish pump room
- Exterior and roof finish
- External works

E&M Works and OP

- CLP works transformer room
- E&M works pump room below and above ground



1.5 Status of Environmental Licences, Notification and Permits

1.5.1 A summary of the relevant permits, licenses and/or notifications on environmental protection for this project is presented in **Table 1.2**.

Permit/ Notification/ License	Reference No	Valid From	Valid Till
Environmental Permit	EP-597/2021	28-Sep-2021	NA
Notification of Construction Works under APCO	494463	18-Apr-2018	31-Dec-2024
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	NA

Notes:

NA = Not Applicable



2. AIR QUALITY

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.

2.2 Monitoring Equipment

- 2.2.1 1-hour TSP air quality monitoring was performed using High Volume Sampler (HVS) deployed at the designated monitoring station. The HVS shall meet all the requirements of the EM&A Manual.
- 2.2.2 Wind data monitoring equipment is provided at the conspicuous locations for logging wind speed and wind direction near to the air quality monitoring location. The equipment installation location is agreed with the ER and the IEC.
- 2.2.3 The model of the air quality monitoring equipment used is summarized in **Table 2.1**.

Item	Brand	Model	Equipment	Serial No.
	Tisch	TE-5170 (TSP)	High Volume Sampler	HVS-05
		TE-300-310X	-Mass Flow Controller	3088
1		TE-5005X	-Blower Motor Assembly	2083
		TE-5007X	-Mechanical Timer	5159
		TE-5009X	-Continuous Flow Recorder	5483
2	Global Water	GL500-7-2	Wind Station	WS-03
3	Tisch	TE-5025A	Calibration Kit	2456

Table 2.1 – Air Quality Monitoring Equipment

2.3 Monitoring Parameters and Frequency

2.3.1 The parameters and frequencies of impact noise monitoring is summarized in **Table 2.2**.

Table 2.2 – Monitoring Parameters and Frequencies of Air Quality Monitoring

Parameter	Frequency
1-hour TSP	At least three times every 6 days when the highest dust impact occurs



2.4 Monitoring Methodology

HVS Installation

- 2.4.1 The following guidelines were adopted during the installation of HVS:
 - i. A horizontal platform with appropriate support to secure the samplers against gusty wind shall be provided;
 - ii. Two samplers shall be placed less than 2 meters apart;
 - iii. The distance between the sampler and an obstacle, such as buildings, must be at least twice the height that the obstacle protrudes above the sampler;
 - iv. A minimum of 2 metres of separation from walls, parapets and penthouses is required for rooftop samplers;
 - v. A minimum of 2 metres of separation from any supporting structure, measured horizontally is required;
 - vi. No furnace or incinerator flue is nearby;
 - vii. Airflow around the sampler is unrestricted;
 - viii. The sampler is more than 20 metres from the dripline;
 - ix. Any wire fence and gate, to protect the sampler, shall not cause any obstruction during monitoring;
 - x. Permission must be obtained to set up the samplers and to obtain access to the monitoring stations; and
 - xi. A secured supply of electricity is needed to operate the samplers.

Operating / Analytical Procedures

- 2.4.2 Prior to the commencement of the dust sampling, the flow rate of the HVS shall be properly set. The flow rate shall be indicated on the flow rate chart. The power supply should be checked to ensure the proper functioning of the sampler. The sampler is recommended to be operated for 5 minutes to establish thermal equilibrium before placing any filter media at the designated air monitoring station.
- 2.4.1 The filter holding frame should be removed by loosening the four nuts and placing carefully a weighted and conditioned filter at the centre with the stamped number upwards on a supporting screen.
- 2.4.2 The filter should be aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter. The filter holding frame should be tightened to the filter holder with swing bolts. The applied pressure should be sufficient to avoid air leakage at the edges.



- 2.4.3 A programmed timer should be used to control the duration of operation. Information should be recorded on the record sheet, which included the starting time, the weather condition and the filter number.
- 2.4.4 After sampling process is finished, the filter should be removed and sent to the laboratory for weighting. The elapsed time should also be recorded.
- 2.4.5 All filter papers should be equilibrated in a conditioning environment for 24 hours before weighting. The conditioning environment temperature should be between 25°C and 30°C and not vary by more than \pm 3°C; the relative humidity (RH) should be <50% and not vary by more than \pm 5%. A convenient working RH is 40%.

2.5 Maintenance and Calibration

- 2.5.1 The high-volume motors and their accessories should be properly maintained, including routine motor brushes replacement and electrical wiring checking, to ensure that the equipment and a continuous power supply were in good working condition.
- 2.5.2 Initial calibration of dust monitoring equipment shall be conducted upon installation and thereafter at bimonthly intervals. The transfer standard shall be traceable to the internationally recognized primary standard and be calibrated annually. The calibration certificate for the HVS is provided in **Appendix C**.

2.6 Monitoring Locations

- 2.6.1 In accordance with the EM&A Manual, air quality monitoring should be carried out at a designated monitoring location.
- 2.6.2 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.
- 2.6.3 The air quality monitoring location summarised in **Table 2.3** and shown in **Figure 2.1**.

Table 2.3 – Air Quality Monitoring Locations

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

2.7 Monitoring Results

- 2.7.1 The schedule of air quality monitoring in reporting month is provided in **Appendix D**.
- 2.7.2 The monitoring data of 1-hr TSP are summarized in **Table 2.4**. The Detailed air quality monitoring results & graphs are presented in **Appendix E** & **Appendix F** respectively.



Table 2.4 – Summary of Air Quality Monitoring Results

Monitoring Station	Average (μg/m³)	Range (µg/ m ³)	Action Level (μg/ m³)	Limit Level (µg/ m³)	
	1-hour TSP				
CA_M1(a)	143.6	94.6 – 231.9	339	500	

- 2.7.3 No Action and Limit level exceedance was recorded in the reporting month.
- 2.7.4 No effect that arose from the other special phenomena and work progress of the concerned site was noted during the current monitoring month.
- 2.7.5 The Action and Limit Levels for impact air quality monitoring have been set and are presented in **Appendix G**.
- 2.7.6 The Event and Action Plan for Air Quality is given in **Appendix H**.
- 2.7.7 The weather conditions during the monitoring are provided in **Appendix I**.
- 2.7.8 The wind data obtained from the on-site wind station during the reporting period is provided in **Appendix J**.



3. NOISE

3.1 Monitoring Requirement

3.1.1 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.

3.2 Monitoring Equipment

- 3.2.1 As referred to the requirements of the Technical Memorandum (TM) issued under the NCO, the sound level meters in compliance with the International Electro technical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications should be used for carrying out the noise monitoring. Immediately prior to and following each noise measurement, the accuracy of the sound level meter should be checked using an acoustic calibrator generating a known sound pressure level at a known frequency. The measurements may be accepted as valid only if the difference between calibration levels obtained before and after the noise measurement is less than 1.0 dB (94 dB ± 0.1 dB).
- 3.2.2 The model of the noise monitoring equipment used is summarized in **Table 3.1**.

Item	Brand	Model	Equipment	Serial No.		
1	Casella	CEL-63X Series	Integrating Sound Level Meter	1488300		
2	Casella	CEL-120/1	Calibrator	1677126		
3	Smart Sensor	AR816	Anemometer	AM-001		

Table 3.1 – Construction Noise Monitoring Equipment

3.3 Monitoring Parameters and Frequency

3.3.1 The parameters and frequencies of impact noise monitoring is summarized in **Table 3.2**.

Table 3.2 – Monitoring Parameters and Frequencies of 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



3.4 Monitoring Methodology

- 3.4.1 Noise measurement should be conducted as the following procedures:
 - The monitoring station will set at a point 1m from the exterior of the sensitive receivers building façade and set at a position 1.2m above the ground. (In case façade measurement is not feasible on-site, a free field correction of +3dB(A) will be applied.)
 - The battery condition was checked to ensure good functioning of the meter.
 - Parameters such as frequency weighting, the time weighting and the measurement time will set as follows:
 - frequency weighting: A
 - time weighting: Fast
 - measurement time: 30 minutes
 - Prior to and after noise measurement, the meter shall be calibrated using the calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after measurement is more than 1.0 dB, the measurement will be considered invalid and repeat of noise measurement is required after re-calibration or repair of the equipment.
 - Noise measurement should be paused during periods of high intrusive noise if possible and observation shall be recorded when intrusive noise is not avoided.
 - Noise measurements shall not be made in fog, rain, wind with a steady speed exceeding 5 m/s or wind with gusts exceeding 10 m/s. The wind speed shall be checked with a portable wind speed meter capable of measuring the wind speed in m/s. Calibration certificate of the anemometer is provided in **Appendix C**.

3.5 Maintenance and Calibration

- 3.5.1 Maintenance and calibration procedures should also be carried out, including:
 - The microphone head of the sound level meter and calibrator should be cleaned with a soft cloth at quarterly intervals.
 - The sound level meter and calibrator should be calibrated annually by a HOKLAS laboratory.
 - Relevant calibration certificates are provided in **Appendix C**.



3.6 Monitoring Locations

- 3.6.1 In accordance with the EM&A Manual, noise monitoring should be carried out at 2 designated monitoring locations.
- 3.6.2 The noise monitoring locations are summarised in **Table 3.3** and shown in **Figure 3.1**.

Table 3.3 – Construction Noise Monitoring Location

Monitoring Location ID	Location	Measurements
CN_M1	In front of the HKBTS Staff & Students Quarters	Free Field
CN_M2	In front of the HKBTS Administration and Education Block	Façade
Nate: Coursetion of 12 dD/A) shall he made to the free field measurements	

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

3.7 Monitoring Results

- 3.7.1 The schedule of noise monitoring in reporting month is provided in **Appendix D**.
- 3.7.2 The noise monitoring data are summarized in **Table 3.4**. The Detailed noise monitoring results & graphs are presented in **Appendix E** & **Appendix F** respectively.

Table 3.4 – Summary of Construction Noise Monitoring Results

Frequency	Location	Correct	ed L _{Aeq}	Action Level	Limit Level		
and Period		Range (dB(A))	Average (dB(A))				
0700-1900 hours in	CN_M1	60.7 – 64.9	64.4	When one documented	70dB(A) during normal teaching period and		
normal weekdays LAeq (30min)	ekdays CN M2 58	58.3 – 60.5	60.1	complaint is received	examination periods 65 dB(A) during		

Remark:

1. CN_M1: Free-field measurement (+3 dB(A) correction has been applied).

- 3.7.3 No Action / Limit Level exceedance of location CN_M1 & CN_M2 was recorded for construction noise in the reporting month.
- 3.7.4 Construction Noise and Road traffic noise along Nin 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.
- 3.7.5 The Action and Limit Levels for Construction Noise have been set and are presented in **Appendix G**.
- 3.7.6 The Event and Action Plan for Construction Noise is given in **Appendix H**.
- 3.7.7 No raining and wind with speed over 5 m/s was observed during noise monitoring according to the onsite observation. The weather conditions during the monitoring month are provided in **Appendix I**.



3.8 Comparison of Noise Monitoring data with EIA Predictions

3.8.1 The noise monitoring data was compared with the EIA predictions as summarized in **Table 3.5**.

Monitoring Station	EIA ID	Maximum Predicted Mitigated Construction Noise Level L _{eq} (30min) dB(A)	Maximum Construction Noise Level in January 2024 L _{eq} (30min) dB(A)				
CN_M1	N1b	72	64.9				
CN_M2	N2	66	60.5				

Table 3.5 – Comparison of Noise monitoring data with EIA predictions

Notes:

Predicted Construction Noise Levels extracted from Table 4.8 of EIA Report, AEIAR-230/2021

3.8.2 The construction noise monitoring results 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).



4. SITE INSPECTION AND AUDIT

4.1 Site Inspection

- 4.1.1 Site audits were carried out by ET on weekly basis to monitor the implementation of proper environmental management practices and mitigation measures in the Project site.
- 4.1.2 In the reporting month, 5 site inspections were carried out on 5, 8, 15, 22 and 29 January 2024.
- 4.1.3 No outstanding issues were reported during the reporting month. The Site Environmental Audit are summarized in **Appendix K**.

4.2 Advice on the Solid and Liquid Waste Management Status

- 4.2.1 The Contractor registered as a chemical waste producer for the Contract. Sufficient numbers of receptacles were available for general refuse collection and sorting.
- 4.2.2 The monthly summary of waste flow table is detailed in **Appendix L**.
- 4.2.3 If off-site disposal is required, the excavated marine mud from the land-based works shall be disposed of at the designated disposal 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.
- 4.2.4 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.



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

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

- 5.1.1 No Action and Limit Level exceedance was recorded for 1-hr TSP level at CA_M1(a) in the reporting month.
- 5.1.2 No Action / Limit Level exceedance was recorded for construction noise at CN_M1 & CN_M2 in the reporting month.

5.2 Complaints, Notification of Summons and Prosecution

- 5.2.1 No environmental complaint, notification of summons and successful prosecution were received in the reporting month.
- 5.2.2 Cumulative complaint log, summaries of complaints, notification of summons and successful prosecutions are presented in **Appendix M**.
- 5.2.3 No corrective actions were required.



6. IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURE

6.1 Implementation Status

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



7. FUTURE KEY ISSUES

7.1 Construction Programme for the Next Month

ABWF Works

- Interior finish pump room
- Exterior and roof finish
- External works

E&M Works and OP

- CLP works transformer room
- E&M works pump room below and above ground
- E&M works external

7.2 Key Issues for the Coming Month

7.2.1 Potential environmental impacts arising from the above construction activities are mainly associated with construction dust, construction noise, waste management, and landscape and visual impact issues.

7.3 Monitoring Schedules for the Next Month

7.3.1 The tentative schedule for environmental monitoring in the coming month is provided in **Appendix D**.



8. CONCLUSION AND RECOMMENDATION

8.1 Conclusions

- 8.1.1 1-hour TSP impact monitoring was carried out in the reporting month. No Action and Limit Level exceedance was recorded in the reporting month.
- 8.1.2 Construction noise monitoring was carried out in the reporting month. No Action / Limit Level exceedance at CN_M1 & CN_M2 was recorded during the period.
- 8.1.3 Five environmental site inspections were carried out in the reporting month. No recommendations on mitigation measures was given to the Contractor for remediating the deficiencies identified during the site inspections.
- 8.1.4 Three landscape and visual site audits were carried out in the reporting month. Recommendations on mitigation measures for Permit/ Licenses were given to the Contractor for remediating the deficiencies identified during the site inspections.
- 8.1.5 Referring to the Contractor's information, no environmental complaint, notification of summons and successful prosecution was received in the reporting month.

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 month, the following recommendations were provided:

Air Quality Impact

• No specific observation was identified in the reporting month.

Construction Noise Impact

• No specific observation was identified in the reporting month.

Water Quality Impact

• No specific observation was identified in the reporting month.

Chemical Waste and Waste Management

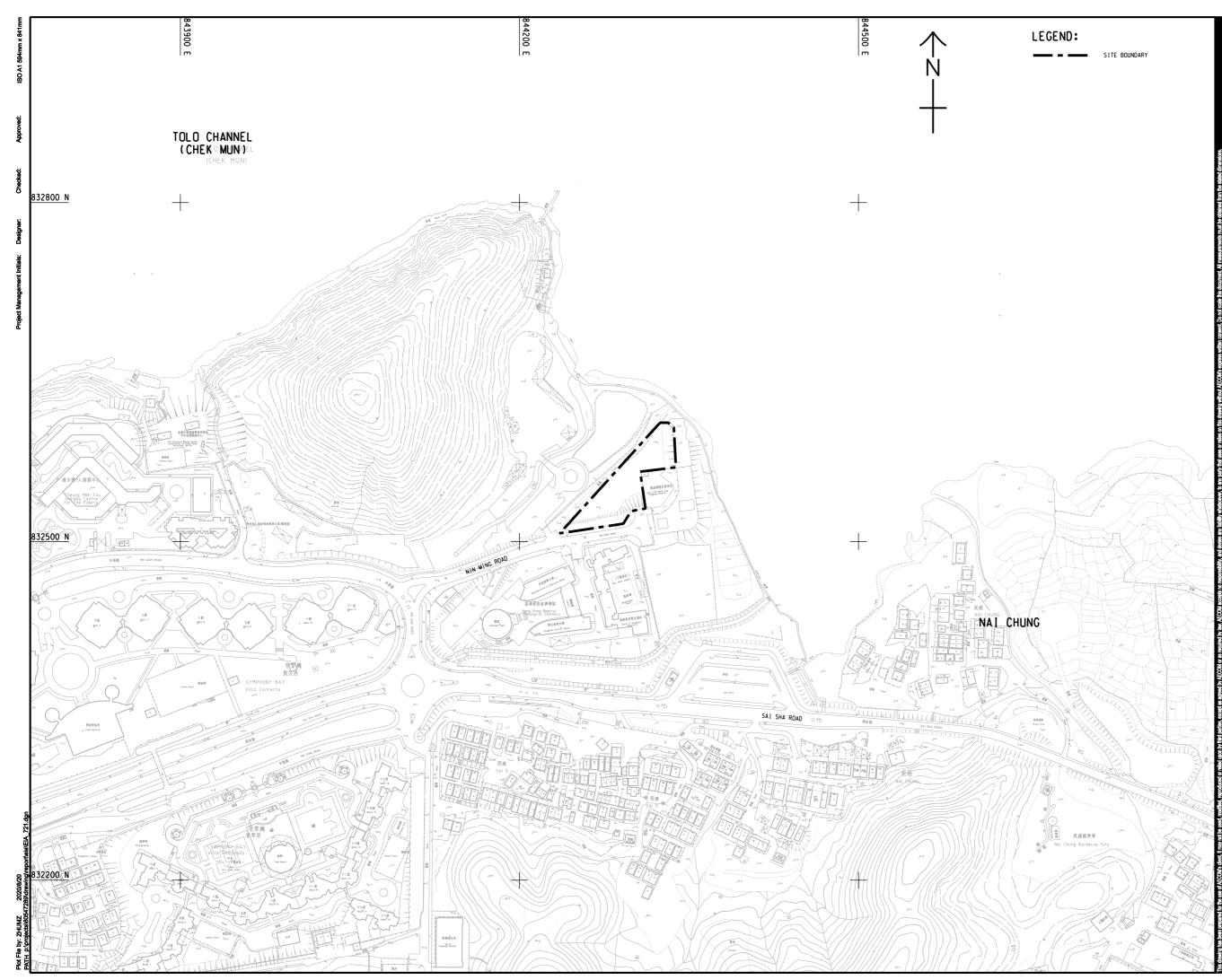
- No specific observation was identified in the reporting month.
- Landscape and Visual Impact
- No specific observation was identified in the reporting month. <u>Permit/Licenses</u>
- No specific observation was identified in the reporting month.



Figure 1.1

Location of the proposed Sai O Trunk SPS







PROJECT

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



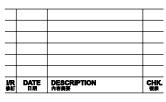
算法 新聞 Drainage Services De

CONSULTANT 工程期間公司

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SUB-CONSULTANTS 分列工和期間公司

ISSUE/REVISION



STATUS

SCALE 比例

DIMENSION UNIT

A1 1 : 1500

METRES

KEY PLAN



60547289

SHEET TITLE

LOCATION OF THE PROPOSED SAI O TRUNK SEWER SEWAGE PUMPING STATION

SHEET NUMBER

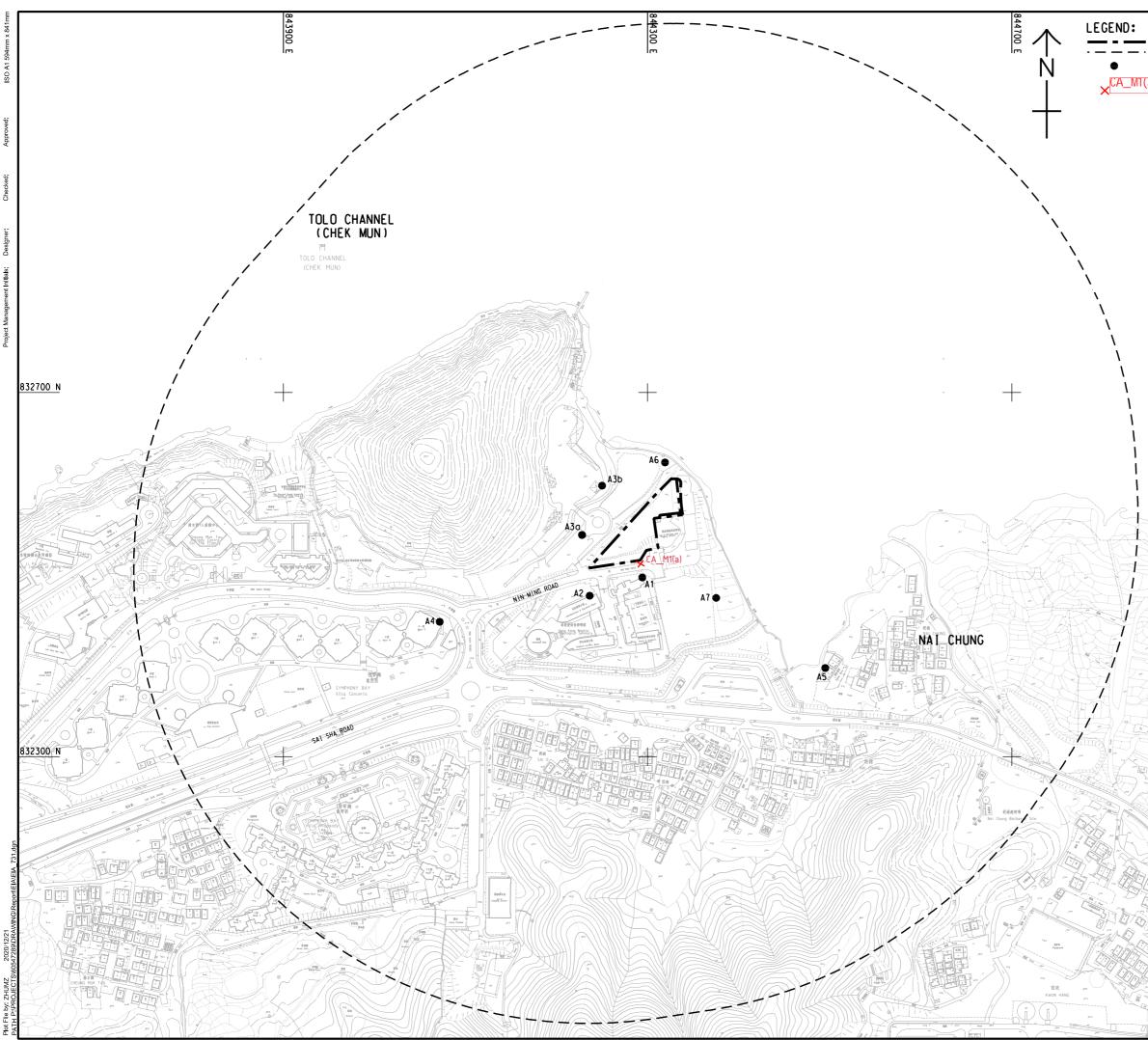
60547289/EM&A/FIGURE 1.1

CONTRACT NO.

Figure 2.1

Air Quality Monitoring Location





SITE BOUNDARY 500m ASSESSMENT AREA South Assessment Area
 Representative Air
 Sensitive Receiver
 CA_MI(a) PROPOSED AIR QUALITY MONITORING
 POINT DURING CONSTRUCTION PHASE



PROJECT

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



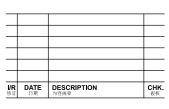
築務署 Drainage Services Department

CONSULTANT

AECOM Asia Company Ltd. www.aecom.com

SUB-CONSULTANTS 分句工程範因公司

ISSUE/REVISION



STATUS

SCALE

DIMENSION UNIT

A11:2000

METRES

PROJECT NO.

CONTRACT NO.

60547289

SHEET TITLE

LOCATIONS OF PROPOSED DUST MOINTORING POINT

SHEET NUMBER

s dra

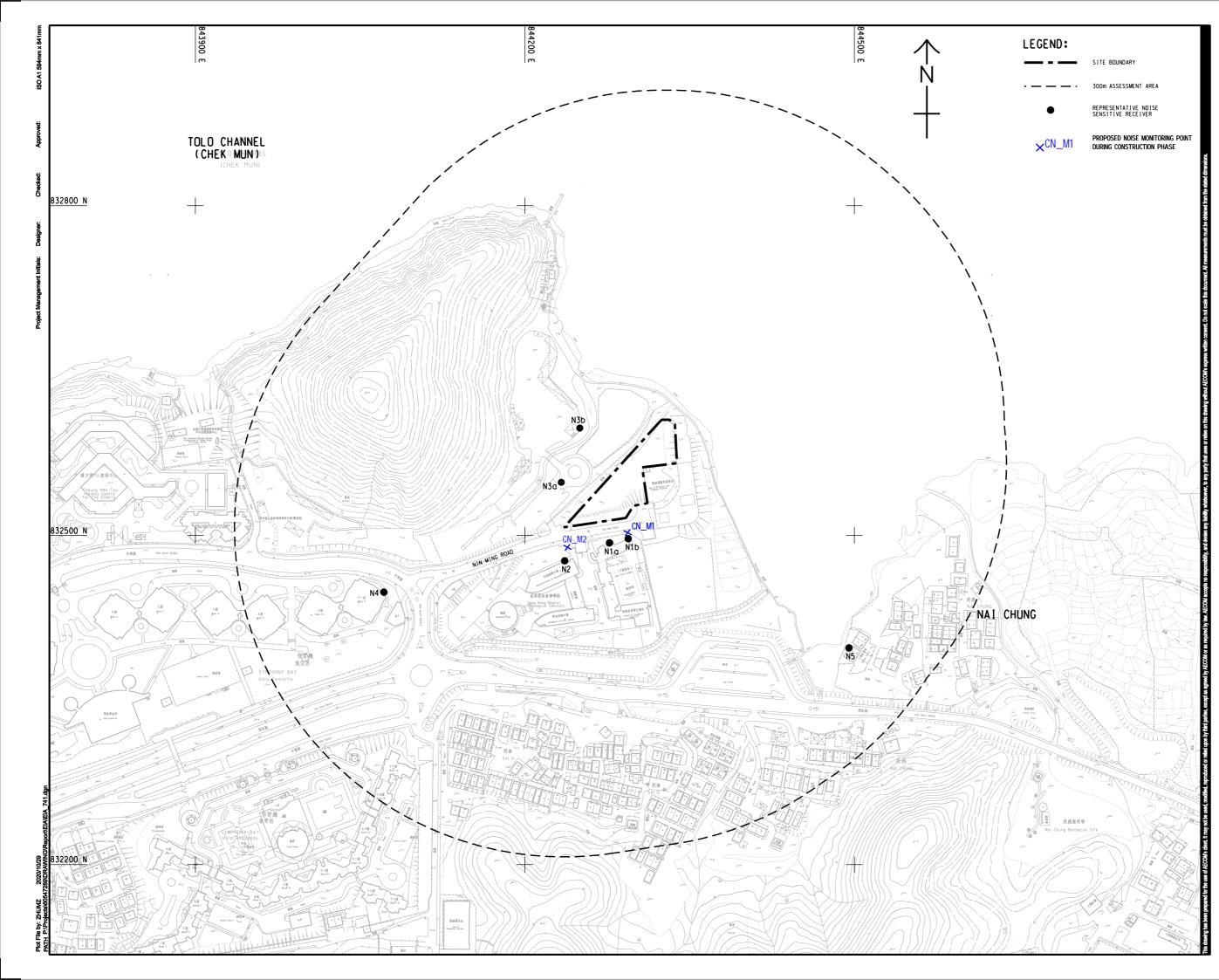
60547289/EM&A/FIGURE 2.1

POINT DURING CONSTRUCTION PHASE
~
i A
IN ALATR
THELL VILLEY
$-+++++26\times$
75 <u>22</u> -467 V 734
KX>>>>XX///////
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Figure 3.1

Noise Monitoring Locations







PROJECT

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



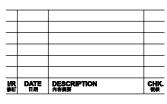
算法 新考 Drainage Services De

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ISSUE/REVISION



STATUS

SCALE 比例

DIMENSION UNIT

CONTRACT NO.

A1 1 : 1500

METRE

KEY PLAN #헤르

PROJECT NO.

60547289

SHEET TITLE

LOCATIONS OF PROPOSED NOISE MOINTORING POINT

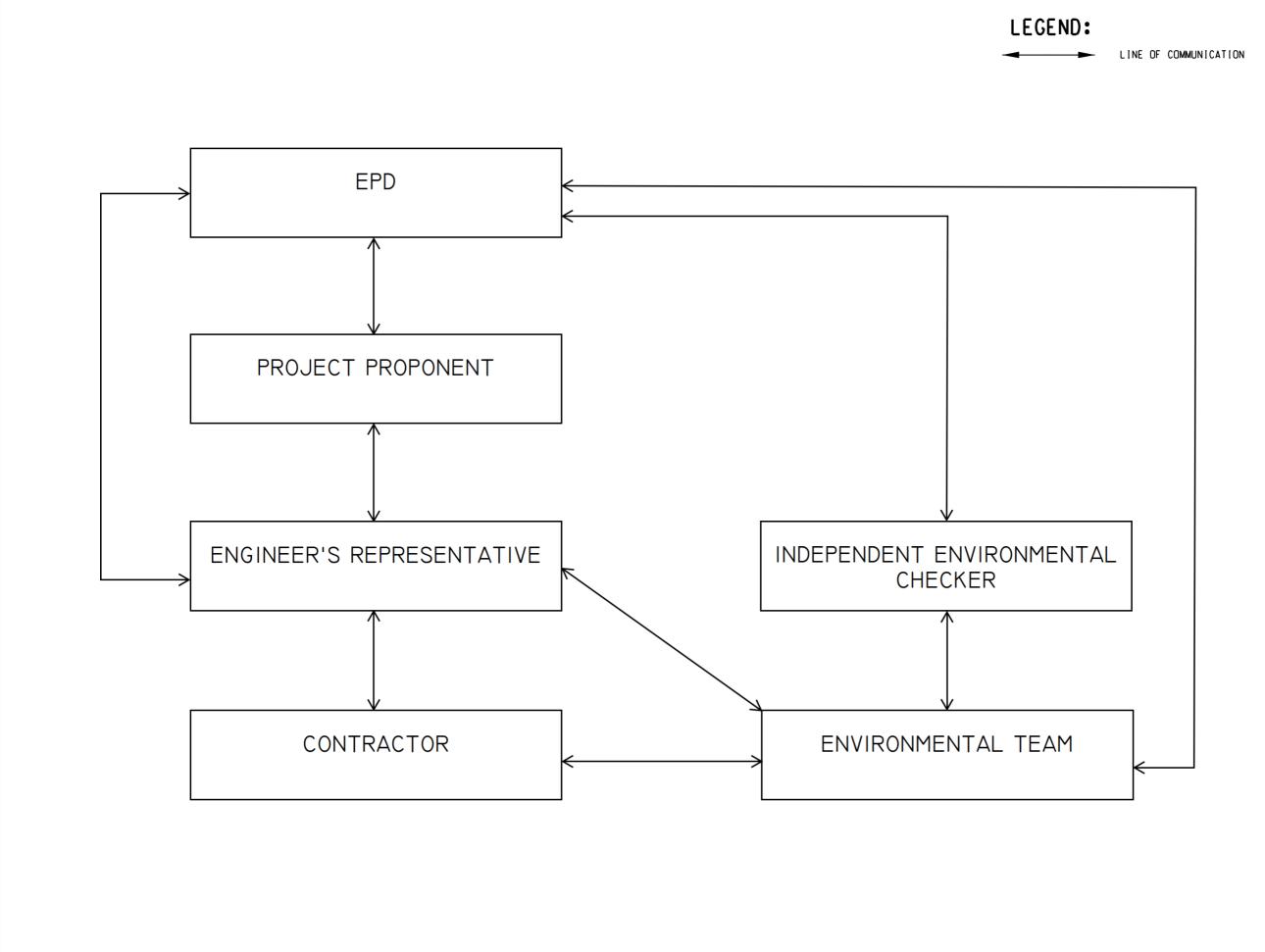
SHEET NUMBER

60547289/EM&A/FIGURE 3.1

Appendix A

Project Organization Chart







PROJECT मा

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



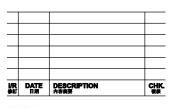
集務署 Drainage Services De

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ISSUE/REVISION



STATUS

SCALE

DIMENSION UNIT

CONTRACT NO.

A11: AS SHOUWN

KEY PLAN #헤르

PROJECT NO.

60547289

SHEET TITLE

PROJECT ORGANISATION

SHEET NUMBER

60547289/EM&A/FIGURE 1.2

Appendix B

Construction Programme

fugro

1	Activity	Days	Start	Finish		20	023						•		2024						
	,					December				January				February				March			
					03	10	17	24	31	07	14	21	28	04	11	18	25	03	10	17	24
Waterworks (Outside Green Area with 4 WF (Refer to Detailed Prog)																				
WW1145	Testing of Waterworks from Work Front 1 to Work Front 4	53	30-Jun-23 A	05-Jan-24	· · · · · · · · · · · · · · · · · · ·	!	!	!													
Sai O Pumpin	ng Station (Section 4)																				
ABWF Works	i de la constante de la constan																				
SOPS5010	Interior finish - pump room	52	25-Aug-23 A	28-Feb-24							· · · · · · · · · · · · · · · · · · ·	-	,		1		<u> </u>				
SOPS5020	Exterior finish	52	04-Sep-23 A	28-Eah-24																	
SOPS5030	Roof finish	52	29-Sep-23 A	28-Feb-24			1	1		!	1	1	!			!					
SOPS5040	External works	40	07-Oct-23 A	28-Feb-24																	
E&M Works a	and OP																				
SOPS6020	E&M works - pump room below ground	71	09-Oct-23 A	02-Mar-24												i	-	— {			
SOPS6030	E&M works - pump room above ground	82	09-Oct-23 A	23-Mar-24							1									:	4
SOPS6040	E&M works - external	49	08-Jan-24	07-Mar-24												1					
SOPS6050	FS inspection	6	01-Mar-24	07-Mar-24																	
SOPS6060	Testing and Commissioning	23	02-Mar-24	28-Mar-24															1	1	
SOPS6070	OP inspection	6	22-Mar-24	28-Mar-24						}	{					}				-	<u> </u>

SAI SHA ROAD WIDENING P. 4	Date	
	09-Jan-24	
THREE MONTHLY ROLLING PROGRAMME AS OF 31/01/2024		
SSR - RMCP 89V	/	

Revision	Checked	Appr

Appendix C

Equipment Calibration Certificates



Air Quality Monitoring Equipment





19/F, Fugro House – KCC2, 1 Kwai On Rd, Kwai Chung, NT, Hong Kong

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Model		Tisch TE-51	70			Date	of Calibration	28-San-22		
Equipment No.: HVS-05					Date of Calibration: 28-Sep-23 Next Calibration Date: 27-Nov-23					
Locatio		1103-00				MEXI Cdl	Technician:			
LUCatio	JII.			0		TIONS	Technician			
		Sea Level	Pressure (hPa):	101	1.60	Cor	rected Pressu	ıre (mm Hg):	759	
		Те	mperature (°C):	3	30.3		Tem	perature (K):	303	
							-			
CALIBRATION ORIFICE										
		Model	Tisch TE-5025A	1			Qstd Slope:	2.08482		
		Serial No.:	2456			Q	std Intercept:			
	Calibr	ation Date:	1-Jun-23				Expiry Date:			
				CAL	IBR/	ATIONS				
Plate	H2O (L)	H2O (R)	H2O	Qstd		I 1	IC		LINEAR	
No.	(in)	(in)	(in)	(m ³ /m	in)	(chart)	(corrected)		GRESSION	
18	6.20	-7.20	13.400		753	57.00		Slope =	22.3792	
13	4.90	-6.00	10.900		583	51.00		Intercept =	16.3483	
10	3.40	-4.20	7.600		324	47.00		Corr. coeff.=	0.9943	
7	2.20	-3.50	5.700		148	42.00		con. coen	0.5545	
, 5	1.20	-1.90	3.100		851	36.00				
5	1.20	-1.50	5.100	0.	001	50.00	55.00			
Calcul	ations:									
)(Tstd/Ta))-b]		FLOW RATE CHART					
IC = I[:	Sqrt(Pa/Pstd)(Istd/Ia)]				60.00				
Ostd =	standard fl	ow rate							>	
-	prrected cha					50.00				
l = act	ual chart res	ponse				50.00				
	alibrator Qs									
	alibrator Qst				Ξ.	40.00				
	•		g calibration (d alibration (mm l	•	Jse					
	298 deg K	re during ca		iy)	por	30.00				
	760 mm Ho	1			t					
	-				Actual chart respons	20.00				
			of sampler flow	v:	alc	20.00				
1/m((l)	[Sqrt(298/Ta	av)(Pav/760))]-b)		vctu					
				4	10.00					
m = sampler slope b = sampler intercept										
I = chart response						0.00				
Tav = daily average temperature					0.000	0.500	1.000 1.5			
Pav = daily average pressure							Standard	Flow Rate (m	°/min)	
		/					il.			
Calibr	ated by : _	Wod	Date :_28 <u>Se</u>	p 2023	5	Supervised	WKK I	Date	e : 28 <u>Sep 202</u>	
	·····	r y -			`	1	,		- <u></u>	

** End of Report **





19/F, Fugro House – KCC2, 1 Kwai On Rd, Kwai Chung, NT, Hong Kong

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Model		Tisch TE-51	70			Date	<u>ہ</u>	f Calibration:	24-Nov-23	
Equipment No.: HVS-05								bration Date:		
Locatio								Technician:		
				CC	DNDI	TIONS				
									<i>,</i>	
			Pressure (hPa):		9.60	C	orr	rected Pressu		765
		Te	mperature (°C):		22.5			Tem	perature (K):	296
				CALIBR	ATIC	ON ORIFI	CE			
		Madalı	Tisch TE-5025A	1				Qstd Slope:	2.08482	
		Serial No.:	2456				0	std Intercept:		
	Calibr	ation Date:	1-Jun-23				ч.	Expiry Date:		
		-								
				CAI	LIBR/	ATIONS				
Plate	H2O (L)	H2O (R)	H2O	Qstd		I		IC	l	INEAR
No.	(in)	(in)	(in)	(m ³ /m	in)	(chart))	(corrected)	REG	RESSION
18	5.80	-6.40	12.200	1.	.702	57.0	00	57.42	Slope =	23.2445
13	4.90	-4.80	9.700	1.	.519	51.0	00	51.38	Intercept =	17.1458
10	3.60	-3.40	7.000	1.	.293	47.0	00	47.35	Corr. coeff.=	0.9967
7	2.30	-2.50	4.800		.073	42.0		42.31		
5	1.20	-1.60	2.800	0.	.823	36.0	00	36.27		
Calcul	ations:									
	= 1/m[Sqrt(F Sqrt(Pa/Pstc)(Tstd/Ta))-b]			FLOW RATE CHART				
						70.00				
-	standard fl									
	orrected cha ual chart res	•				60.00 -				>
	alibrator Qs	•				50.00				
b = ca	alibrator Qst	d intercept) (j)	50.00 -				
			g calibration (d		-	40.00				
	ctual pressu 298 deg K	re during ca	libration (mm ł	Hg)	lod	10.00				
	760 mm Hg	a a a a a a a a a a a a a a a a a a a			res	30.00				
		, ,			hart					
For subsequent calculation of sampler flow:				alc	20.00 -					
1/m((l)[Sqrt(298/Tav)(Pav/760)]-b)				Actual chart response						
m = sampler slope					10.00 -					
b = sampler intercept										
l = ch	nart respons	e				0.00	0	0.500	1.000 1.50	0 2.000
		e temperatu	ire			0.000	~		Flow Rate (m ³	
Pav =	daily averag	e pressure							· ·	,

Calibrated by : Mo CAUN YUN Date : _24 Nov 2023 _ Supervised by : _____ Date : 27 Nov 2023



RECALIBRATION **DUE DATE:** June 1, 2024

n m e n t a l Bertificate of Calibration

			Calibration	Certificati	on Informat	ion		
Cal. Date:	tor: Jim Tisch			meter S/N:	438320	Ta:	295	°К
Operator:						Pa:	Pa: 751.8	
Calibration	Model #:	TE-5025A	Calil	prator S/N:	2456			
		Vol. Init	Vol. Final	ΔVol.	ΔTime	ΔP	ΔΗ]
	Run	(m3)	(m3)	(m3)	(min)	(mm Hg)	(in H2O)	
	1	1	2	1	1.4360	3.2	2.00	
	2	3	4	1	1.0210	6.4	4.00	
	3	5	6	1	0.9080	8.0	5.00	
	4	7	8	1	0.8670	8.8	5.50	
	5	9	10	1	0.7170	12.8	8.00	
			E	Data Tabula	tion			
	Vstd	Qstd	$\sqrt{\Delta H \left(\frac{Pa}{Pstd}\right)}$)(<u>Tstd</u>)		Qa	$\sqrt{\Delta H (Ta/Pa)}$	
	(m3)	(x-axis)	(y-ax	is)	Va	(x-axis)	(y-axis)	
	0.9951	0.6929	1.413	37	0.9957		0.8859	
	0.9908 0.9704 1.99				0.9711	1.2528		
	0.9887	The second se				1.0896	1.4007	
	0.9876	1.1391	2.344	which it is a second domain of the second data	0.9883	1.1399	1.4690	
	0.9823	1.3700	2.827	The second se	0.9830	1.3710	1.7717	
			and the second se	.08482 0.02977 OA		m= b=	1.30548	
	QSID	r=	0.999	Contraction of the local division of the loc	QA	r=	-0.01866 0.99997	
				Calculatio				
	Vstd=	∆Vol((Pa-∆P)	/Pstd)(Tstd/Ta)	Va=	ΔVol((Pa-Δl	P)/Pa)	
	Qstd=	/std/∆Time			Qa=	Va/∆Time		
		massive and an an and a	For subsequ	ent flow ra	te calculation	ns:		
	Qstd=	1/m ((√∆H(-	Pa <u>(Tstd</u> Pstd Ta))-b)	$Qa = 1/m\left(\left(\sqrt{\Delta H(Ta/Pa)}\right)-b\right)$			
	Standard	Conditions						
Tstd:		and the second se		[RECA	IBRATION	
Pstd:	Construction of the owner	nm Hg			LIS EPA reco	mmendsar	nual recalibratio	n nor 1000
AH: calibrate	or manomete	ey er reading (ir	H2O)				legulations Part 5	
	ter manome						Reference Meth	
	solute temp						ended Particulate	
Pa: actual ba	arometric pro		lg)				re, 9.2.17, page 3	
o: intercept							,, page .	
n: slope								

Tisch Environmental, Inc. 145 South Miami Avenue

Village of Cleves, OH 45002

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



CALIBRATION REPORT OF WIND METER

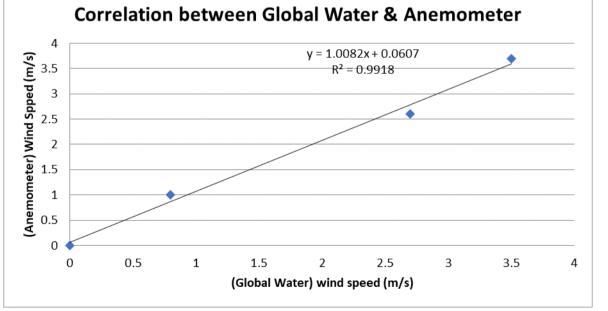
EP No.: EP Location:		tion	Date of Calibration: Next Calibration Date: Technician:	24-Nov-2023 28-Feb-2024 Yin Ho			
Brand: Model:	Global Water GL500-7-2	Equipment ID:	WS-03				
			Anemometer				
Brand: Model:	Smart Sensor AR816	Equipment ID:	AM-001				
			Procedures:				
1.	1. Wind Still Test: The wind speed sensor was held by hand until stabilized.						
2.	Wind Speed Test:	By direct comparison the reading between the wind speed sensor and the Anemometer.					
3.	Wind Direction Test:	ind Direction Test: The wind meter was calibrated in-situ and compared with a marine compass from four directions.					

Wind Still Test:

Wind Speed (m/s)
0.00

Wind Speed Test:





Remarks:

1. Actual Wind Speed Value (m/s) = 0.9065 x (Reading of Global Water Instrument) + 0.0794

2. Correlation coefficient $(R^2) = 0.9943$

3. Acceptable Range: R² >=0.99

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CALIBRATION REPORT OF WIND METER

Wind Direction Test:

	Marine Compass (o)
0	1
45	47
92	94
270	273

Report Date: 27/11/2023

CToby Wan **Project Consultant**



FUGRO TECHNICAL SERVICES LIMITED

Fugro Development Centre 5 Lok Yi Street, Tai Lam Tuen Mun, NT Hong Kong

Report No. : 212769CA233072

Page 1 of 1

CALIBRATION CERTIFICATE OF ANEMOMETER

Client Supplied Information

Client : Fugro Technical Services Ltd.

Project : Calibration Services

Details of Unit Under Test, UUT

Description :	Anemometer
Manufacturer :	Smart Sensor
Model No.	AR816
Serial No. :	NA
Equipment ID.:	AM-001
Calibration Date :	23-Apr-2024

Laboratory Information

Next

Details of Reference Equipment –								
Descripti	ion : Reference Anemometer							
Equipment ID.:		R-101-4	२-101-4					
Date of Calibration	on :	24-Apr-2023	Ambient Temperature		22 °C			
Calibration Locat	ion :	Calibration Laboratory of FTS						
Method Used : In-house method R-C-279								

Calibration Results :

Reference Reading	UUT Reading	Error
(m/s)	(m/s)	(m/s)
2.00	2.0	0.0
4.00	4.0	0.0
6.00	6.0	0.0
8.00	8.2	0.2
10.02	10.3	0.3

Remark :

1. The equipment being used in this calibration is traceable to recognized National Standards.

2. The reported readings in this calibration are an average from 10 trials.

Checked by : Date : 27-4-2022	Certified by : KT. Toung Date : N-4-203
CA-R-297 (22/07/2009)	Leung Kwok Tai (Assistant Manager)

** End of Report **

Noise Monitoring Equipment





FUGRO TECHNICAL SERVICES LIMITED

Fugro Development Centre 5 Lok Yi Street, Tai Lam Tuen Mun, NT Hong Kong

Report no.: 212769CA233276

Page 1 of 1

CALIBRATION CERTIFICATE OF SOUND LEVEL METER

Client Supplied Information

Client : Materialab Consultants Ltd. Project : Calibration Services

Details of Unit Under Test, UUT -

:	Sound Level Meter		
1	Casella		
	Meter	Microphone	Preamplifier
:	CEL-63X	CE-251	CEL-495
:	1488300	04727	005347
:	N/A		
:	14-Jul-2024		
:	EN 61672-1: 2003 Clas	ss 1	
	ו0	: Casella Meter : CEL-63X : 1488300 : N/A : 14-Jul-2024	Casella Meter Microphone CEL-63X CE-251 1488300 04727 N/A

Laboratory Information

Details of Reference Equipment

Details of Reference Equipment -									
	Description	: B & K Acou	ustic Multifunction Cali	brator 4226	(Tradition	nal free	e field set	ting)	
	Equipment ID.	: R-108-1							
	Date of Receipt	Date of Receipt : 13-Jul-2023							
	Date of Calibration	: 15-Jul-202	3						
	Calibration Location	n : Calibration	Laboratory of FTS	Ambient 7	Temperati	ure :	20±2	°C	
	Method Used	: By direct c	omparison	mparison Relative Humidity			<80% F	₹.H.	
	Calibration Result	s:						-	
	Paramet	ters	Mean Value (Specific	ation L	.imit(dB)			
		4000Hz	1.3		2.6	to	-0.6		
		2000Hz	1.3		2.8	to	-0.4		
	A-weigthing	1000Hz	0.0		1.1	to	-1.1		
	frequency	500Hz	-3.3		-1.8	to	-4.6		
	response	250Hz	-8.8		-7.2	to	-10.0		
		125Hz	-16.2		-14.6	to	-17.6		
		63Hz	-26.2		-24.7	to	-27.7		
	Differential level	94dB-104dB	0.0			± 0.6			

Remarks :

linearity

- 1. The equipment used in this calibration is traceable to recognized National Standards.
- 3. For calibration: Reference SPL are 94, 104 & 114dB, range setting is 20-140dB & time weighting is fast

0.0

3. The mean value is the average of four measurements.

104dB-114dB

4. The equipment does comply with EN 61672-1: 2003 Class 1 sound level meter for the above measurement.

 ± 0.6

5. The values given in this Calibration Certificate only relate to the values at the time of the test and any uncertainties will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during tranportation, overloading, mis-handling or the capability of any other laboratory to repeat the measurement.

 \mathcal{A} Date : 2/-7-202 Certified by : _ K I Loung Date: 7-7-2023 Checked by : Leung Kwok Tai (Assistant Manager) CA-R-297 (22/07/2009) ** End of Report **

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Fugro Development Centre 5 Lok Yi Street, Tai Lam Tuen Mun, NT Hong Kong

Page 1 of 1

Report no.: 212769CA233246(1)

CALIBRATION CERTIFICATE OF SOUND CALIBRATOR

Client : Materialab Consultants Ltd.

Project : Calibration Services

Client Supplied Information

Details of Unit Under Test, UUT -

Description		:	Sound Calibrator
Manufacturer		1	Casella (Model CEL-120/1)
Serial No.		:	1677126
Equipment ID		÷	N/A
Next Calibration Date	;	04-	-Jul-2024
Specification Limit	÷	ΕN	60942: 2003 Class 1

Laboratory Information

Details of Calibration Equipment -

Deceriation	Defenses Occurding to the		
Description :	Reference Sound level meter		
Equipment ID. :	R-119-2		
Date of Receipt :	04-Jul-2023		
Date of Calibration :	05-Jul-2023		
Calibration Location :	Calibration Laboratory of FTS	Ambient Temperature :	20 ± 2 °C
Method Used :	By direct comparison	Relative Humidity :	< 80 % RH

Calibration Results :

Parameters (Setting of UUT)	Mean Value (error of measurement)	Specification Limit(dB)		
94dB	0.3 dB	10.4dD		
114dB	0.3 dB	±0.4dB		

Remarks :

- 1. The equipment used in this calibration is traceable to recognized National Standards.
- 2. The mean value is the average of four measurements.
- 3. The unit under test complies with the specification limit.
- 4. The values given in this Calibration Certificate only relate to the unit-under-test and the values measured at the time of the test. Any uncertainties quoted will not include allowances for the environmental changes, variation and shock during transportation, or the capability of any other laboratory to repeat the measurement.

Date : 247-2022 Certified by : FT Joung Date : 24-7-2023 Leung Kwok Tai (Assistant Manager) Checked by :_ CA-R-297 (22/07/2009)

Appendix D

Environmental Monitoring Schedule



Project: EP-597/2021 Sai O Trunk Sewer Sewage Pumping Station

Impact Air Quality & Noise Monitoring Schedule (January 2024)

Mon	Tue	Wed	Thur	Fri	Sat
1	2	3	4	5	6
			 AQM 	Site Inspection	
			• NM		
8	9	10	11	12	13
Site Inspection		 AQM 			
		• NM			
15	16	17	18	19	20
Site Inspection	AQM				
	• NM				
22	23	24	25	26	27
Site Inspection					AQM
AQM					
• NM					
29	30	31			
Site Inspection					
	Mon 1 8 • Site Inspection 15 • Site Inspection 22 • Site Inspection AQM • NM 29	MonTue12128 • Site Inspection915 • Site Inspection16 • AQM • NM22 • Site Inspection • AQM • NM2322 • Site Inspection • AQM • NM30	MonTueWed12312108910• Site Inspection101516• Site Inspection17• Site Inspection232223• Site Inspection24• NM242930	MonTueWedThur12341234• AQM • NM11• AQM • NM• NM8 • Site Inspection910 • AQM • NM1115 • Site Inspection16 • AQM • NM171822 • Site Inspection • AQM • NM23242521 • Site Inspection • AQM • NM30311	MonTueWedThurFri123 4 5 1 2 3 4 5 \cdot AQM \cdot NM \cdot NM \cdot Site Inspection89 10 11 12 \cdot Site Inspection \cdot AQM \cdot NM 11 15 16 17 18 19 \cdot Site Inspection \cdot AQM \cdot NM 22 \cdot Site Inspection \cdot AQM 24 25 22 \cdot Site Inspection $-$ AQM \cdot NM 24 25 26 29 30 31 $-$ Control

Remarks

1. Actual monitoring may be subjected to change due to any safety concern or adverse weather condition;

Air Quality Monitoring(AQM): 3 x 1-hours TSP Monitoring in every 6 days;
 Monitoring Locations: CA_M1(a) Construction Site Boundary near Hong Kong Baptist Theological Seminary (HKBTS) Staff & Students Quarters

 Noise Monitoring(NM): one set of Leq (30 min) between 0700 and 1900 hours on normal weekdays once a week; Monitoring Locations: CN_M1 In front of the HKBTS Staff & Students Quarters Monitoring Locations: CN_M2 In front of the HKBTS Administration and Education Block

4. Site Inspection: Once a week



Project: EP-597/2021 Sai O Trunk Sewer Sewage Pumping Station

Impact Air Quality & Noise Monitoring Schedule (February 2024)

Sun	Mon	Tue	Wed	Thur	Fri	Sat	
				1	2 • AQM • NM	3	
4	5 • Site Inspection	6	7	8 • AQM • NM	9	10	
11	12	13	14 • AQM • NM	15	16 • Site Inspection	17 ו	
18	19 • Site Inspection	20 • AQM • NM	21	22	23	24	
25	26 • Site Inspection • AQM • NM	27	28	29			

Remarks

1. Actual monitoring may be subjected to change due to any safety concern or adverse weather condition;

 Air Quality Monitoring(AQM): 3 x 1-hours TSP Monitoring in every 6 days; Monitoring Locations: CA_M1(a) Construction Site Boundary near Hong Kong Baptist Theological Seminary (HKBTS) Staff & Students Quarters

 Noise Monitoring(NM): one set of Leq (30 min) between 0700 and 1900 hours on normal weekdays once a week; Monitoring Locations: CN_M1 In front of the HKBTS Staff & Students Quarters Monitoring Locations: CN_M2 In front of the HKBTS Administration and Education Block

4. Site Inspection: Once a week



Appendix E

Air Quality & Construction Noise Monitoring Results

UGRO

1-hr TSP Monitoring Results

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

				Elapsed-Ti	me Meter	Sampling	Temperature	Atmospheric	Filte	r Paper V	Neight	1	Flow Rate	÷	Total		Concer	itration				
Start Date	Start Time	Weather Condition	Filter Identification No.	Start	Stop	Time (min)	(K)	Pressure (mmHg)	Initial Weight	Final Weight	Particulate Weight	Intial	Final	Average	Volume (m ³)	Value	Average	Action Level	Limit Level			
	9:08	Fine	M12779	6221.41	6222.41	60	295.5	763.3	2.8330	2.8424	0.009	0.99	0.99	0.99	59.65	157.6						
4-Jan-24	10:10	Fine	M12780	6222.41	6223.41	60	295.5	763.3	2.8368	2.8439	0.007	0.99	0.99	0.99	59.65	119.0	151.4	339	500			
	11:14	Fine	M12781	6223.41	6224.41	60	295.5	763.3	2.8373	2.8479	0.011	0.99	0.99	0.99	59.65	177.7			1			
	9:11	Fine	M12762	6221.41	6222.41	60	297.7	762.2	2.8577	2.8633	0.006	0.99	0.99	0.99	59.19	94.6						
10-Jan-24	10:14	Fine	M12763	6222.41	6223.41	60	297.7	762.2	2.8527	2.8584	0.006	0.99	0.99	0.99	59.19	96.3	100.4	100.4	339	500		
	11:18	Fine	M12786	6223.41	6224.41	60	297.7	762.2	2.8304	2.8392	0.009	1.33	1.33	1.33	79.89	110.2						
	9:02	Fine	M12767	6224.41	6225.41	60	290.3	766.6	2.8612	2.8730	0.012	1.36	1.36	1.36	81.82	144.2	140.3	140.3	140.3	140.3		
16-Jan-24	10:06	Fine	M12770	6225.41	6226.41	60	290.3	766.6	2.8293	2.8400	0.011	1.28	1.28	1.28	76.57	139.7					140.3	140.3
	11:09	Fine	M12778	6226.41	6227.41	60	290.3	766.6	2.8248	2.8360	0.011	1.36	1.36	1.36	81.82	136.9						
	9:03	Fine	M13372	6224.41	6225.41	60	286.3	772.5	2.6940	2.7043	0.010	1.30	1.30	1.30	77.87	132.3	159.2	9.2 339				
22-Jan-24	10:08	Fine	M13373	6225.41	6226.41	60	286.3	772.5	2.6878	2.7012	0.013	1.30	1.30	1.30	77.87	172.1			500			
	11:13	Fine	M13374	6226.41	6227.41	60	286.3	772.5	2.7061	2.7196	0.013	1.30	1.30	1.30	77.87	173.4						
	9:18	Fine	M12771	6227.41	6228.41	60	292.4	765.9	2.8412	2.8552	0.014	1.01	1.01	1.01	60.38	231.9	166.5					
27-Jan-24	10:19	Fine	M12772	6228.41	6229.41	60	292.4	765.9	2.8400	2.8500	0.010	1.01	1.01	1.01	60.38	165.6		166.5	166.5	339	500	
	11:26	Fine	M12773	6229.41	6230.41	60	292.4	765.9	2.8354	2.8437	0.008	1.36	1.36	1.36	81.31	102.1			1			
															Min	94.6						

 Min
 94.6

 Max
 231.9

 Average
 143.6





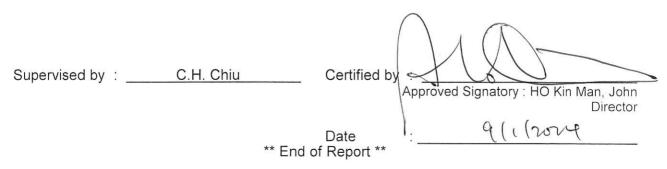
Report No. : 215334EN233907(4)

Page 1 of 1

Test Report on Analysi	Test Report on Analysis of Filters							
Information Supplied by	Information Supplied by Client							
Client	:	Fugro Technical Services Ltd.						
Client's address	•	13/F, Fugro House – KCC2, No.1 Kwai On Road, Kwai Chung, N.T., H.K.						
Project	•	Provision of ET Services for Sai O Trunk Sewer Sewage Pumping Station						
Sample description	:	3 samples of TSP filter paper						
Sample identification	:	-						
Sampling date	÷	-						
Test required	:	Provision of conditioned & tared filter paper and subsequent reconditioning and reweighing of returned filter paper for TSP monitoring						
Laboratory Information								
Filter paper I.D.	:	M12779, M12780, M12781						
Date of receipt of sample	e:	04/01/2024						
Date test completed		05/01/2024						
Test method used	:	USEPA Method 40 CFR Part 50 Appendix B.						

Results :

Filter paper I.D.	Initial wt. of filter, g	Final wt. of filter, g
M12779	2.8330	2.8424
M12780	2.8368	2.8439
M12781	2.8373	2.8479



Note : This report refers only to the sample(s) tested and the result(s) applied to the sample(s) as received.



Report No. : 215334EN240415

Page 1 of 1

Test Report on Analysis of Filters

Information Supplied by Client

Client	:	Fugro Technical Services Ltd.
Client's address	:	13/F, Fugro House – KCC2, No.1 Kwai On Road, Kwai Chung, N.T., H.K.
Project	:	Provision of ET Services for Sai O Trunk Sewer Sewage Pumping Station
Sample description	:	3 samples of TSP filter paper
Sample identification	:	-
Sampling date	•	-
Test required	:	Provision of conditioned & tared filter paper and subsequent reconditioning and reweighing of returned filter paper for TSP monitoring
Laboratory Information		
Filter paper I.D.	:	M12762, M12763, M12786
Date of receipt of sample	Э:	10/01/2024
Date test completed	•	11/01/2024
Test method used	:	USEPA Method 40 CFR Part 50 Appendix B.

Results :

Filter paper I.D.	Initial wt. of filter, g	Final wt. of filter, g
M12762	2.8577	2.8633
M12763	2.8527	2.8584
M12786	2.8304	2.8392

Supervised by :	C.H. Chiu		Certified by	Approved Signatory : HO I	Kin Man, John Director
		** End o	Date f Report **	9/2/202	<u> </u>

Note : This report refers only to the sample(s) tested and the result(s) applied to the sample(s) as received.

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Test Report on Analysis of Filters

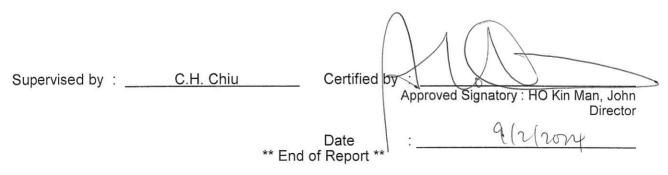
Report No. : 215334EN240415(1)

Page 1 of 1

Test Report on Analysi								
Information Supplied by (Information Supplied by Client							
Client	:	Fugro Technical Services Ltd.						
Client's address	•	13/F, Fugro House – KCC2, No.1 Kwai On Road, Kwai Chung, N.T., H.K.						
Project	:	Provision of ET Services for Sai O Trunk Sewer Sewage Pumping Station						
Sample description	:	3 samples of TSP filter paper						
Sample identification	•	-						
Sampling date	:	-						
Test required	:	Provision of conditioned & tared filter paper and subsequent reconditioning and reweighing of returned filter paper for TSP monitoring						
Laboratory Information								
Filter paper I.D.	:	M12767, M12770, M12778						
Date of receipt of sample	e :	16/01/2024						
Date test completed	÷	17/01/2024						
Test method used	:	USEPA Method 40 CFR Part 50 Appendix B.						

Results :

Filter paper I.D.	Initial wt. of filter, g	Final wt. of filter, g	
M12767	2.8612	2.8730	
M12770	2.8293	2.8400	
M12778	2.8248	2.8360	



Note : This report refers only to the sample(s) tested and the result(s) applied to the sample(s) as received.

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Report No. : 215334EN240415(2)

Page 1 of 1

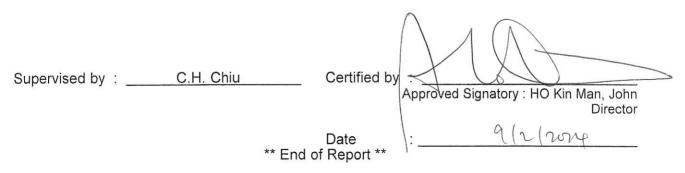
Test Report on Analysis of Filters

Information Supplied by Client

Client	()•() ()•()	Fugro Technical Services Ltd.
Client's address	•	13/F, Fugro House – KCC2, No.1 Kwai On Road, Kwai Chung, N.T., H.K.
Project	:	Provision of ET Services for Sai O Trunk Sewer Sewage Pumping Station
Sample description	:	3 samples of TSP filter paper
Sample identification	:	-
Sampling date	:	-
Test required	:	Provision of conditioned & tared filter paper and subsequent reconditioning and reweighing of returned filter paper for TSP monitoring
Laboratory Information		
Filter paper I.D.	:	M13372, M13373, M13374
Date of receipt of sample	e :	23/01/2024
Date test completed	:	24/01/2024
Test method used	÷	USEPA Method 40 CFR Part 50 Appendix B.

Results :

Filter paper I.D.	Initial wt. of filter, g	Final wt. of filter, g
M13372	2.6940	2.7043
M13373	2.6878	2.7012
M13374	2.7061	2.7196



Note : This report refers only to the sample(s) tested and the result(s) applied to the sample(s) as received.



Report No. : 215334EN240415(3)

Page 1 of 1

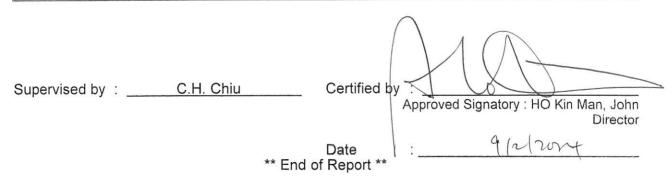
Test Report on Analysis of Filters

Information Supplied by Client

Client	:	Fugro Technical Services Ltd.
Client's address	:	13/F, Fugro House – KCC2, No.1 Kwai On Road, Kwai Chung, N.T., H.K.
Project	:	Provision of ET Services for Sai O Trunk Sewer Sewage Pumping Station
Sample description	;	3 samples of TSP filter paper
Sample identification	:	-
Sampling date	•	-
Test required :		Provision of conditioned & tared filter paper and subsequent reconditioning and reweighing of returned filter paper for TSP monitoring
Laboratory Information		
Filter paper I.D.	:	M12771, M12772, M12773
Date of receipt of sample	Э:	29/01/2024
Date test completed	÷	31/01/2024
Test method used	:	USEPA Method 40 CFR Part 50 Appendix B.

Results :

Filter paper I.D.	Initial wt. of filter, g	Final wt. of filter, g
M12771	2.8412	2.8552
M12772	2.8400	2.8500
M12773	2.8354	2.8437



Note : This report refers only to the sample(s) tested and the result(s) applied to the sample(s) as received.

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Noise Monitoring Results

Date	Weather	Wind Speed	Start Time	Noise Monitoring (30min)(dB(A))			
	weather	(m/s)		Corrected Leq	Leq	L90	L10
04-Jan-24	Fine	0.2	9:11	63.8	60.8	56.5	63.0
10-Jan-24	Fine	0.7	9:41	60.7	57.7	57.0	63.5
16-Jan-24	Fine	0.4	9:09	64.9	61.9	56.0	64.5
22-Jan-24	Fine	0.4	9:09	64.4	61.4	56.5	63.5
			Average :	63.7			
				64.3			
			Action Level :	When	one valid documen	ted complaint is re	ceived
Limit Level : 70dB(A) for schools and 65dB(A) during school examination period				nation periods			

Monitoring Location : CN_M1 In front of the HKBTS Staff & Students Quarters

Monitoring Location : CN_M2 In front of the HKBTS Administration and Education Block

Date Weather	Weather	Wind Speed	Start Time	Noise Monitoring (30min)(dB(A))			
	weather	(m/s)		Leq	L90	L10	
04-Jan-24	Fine	0.2	9:48	60.3	55.5	62.5	
10-Jan-24	Fine	0.6	10:19	58.3	56.5	61.5	
16-Jan-24	Fine	0.1	9:47	60.5	50.5	63.0	
22-Jan-24	Fine	0.4	9:47	59.9	49.5	62.5	
			Average :	59.8			
			Baseline Level:	62.5			
			Action Level :	When one valid documer	nted complaint is re	ceived	
			Limit Level :	: 70dB(A) for schools and 65dB(A) during school examination periods			

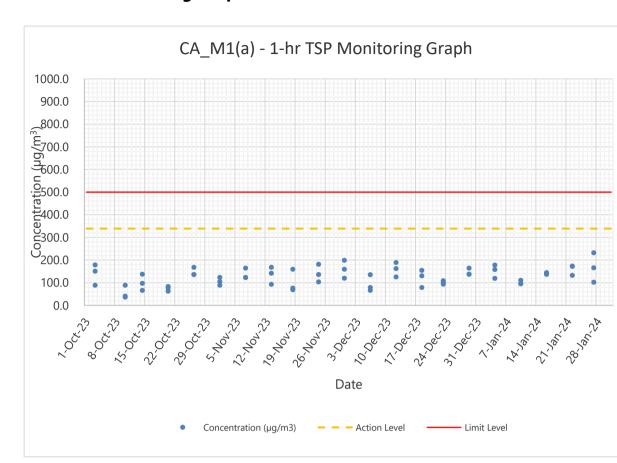
Remarks: 1. Noise results at CN_M1 were calculated by +3 dB (A) correction for free-field measurement.



Appendix F

Air Quality & Construction Noise Monitoring Graphs

UGRO



1-hr TSP Monitoring Graph



Noise Monitoring Graph



Date

Limit Level

• Leq (30min)





Appendix G

Action and Limit Level



Action and Limit Levels for Air Quality

Monitoring Parameter	Monitoring Station	Action Level	Limit Level
1-hour TSP	CA_M1(a)	339 μg/m³	500 μg/m³

Action and Limit Levels for Construction Noise

Monitoring Parameter	Monitoring Station	Action Level	Limit Level
0700-1900 hours in normal weekdays LA _{eq} (30min)	CN_M1	When one documented	70dB(A) during normal teaching period &
	CN_M2	complaint is received	65 dB(A) during examination periods

Remark:

CN_M1: Free-field measurement (+3 dB(A) correction has been applied).



Appendix H

Event and Action Plan



Event and Action Plan for Air Quality (Construction Dust)

		ΑСΤΙΟ	N	
EVENT	ET	IEC	ER	Contractor
Action level being exceeded by one sampling	 Identify source, investigate the causes of complaint and propose remedial measures; Inform Contractor, IEC and ER; Repeat measurement to confirm finding; and Increase monitoring frequency to daily. 	 Check monitoring data submitted by ET; Check Contractor's working method; and Review and advise the ET and ER on the effectiveness of the proposed remedial measures. 	1. Notify Contractor.	 Identify source(s), investigate the causes of exceedance and propose remedial measures; Implement remedial measures; and Amend working methods agreed with the ER as appropriate.
Action level being exceeded by two or more consecutive sampling	 Identify source; Inform Contractor, IEC and ER; Advise the Contractor and ER on the effectiveness of the proposed remedial measures; Repeat measurements to confirm findings; Increase monitoring frequency to daily; Discuss with IEC and Contractor on remedial actions required; If exceedance continues, arrange meeting with Contractor, IEC and ER; and If exceedance stops, cease additional monitoring. 	 Check monitoring data submitted by ET; Check Contractor's working method; Discuss with ET, ER and Contractor on possible remedial measures; Advise the ET and ER on the effectiveness of the proposed remedial measures; and Supervise Implementation of remedial measures. 	 Confirm receipt of notification of exceedance in writing; Notify Contractor; Ensure remedial measures properly implemented. 	 Identify source and investigate the causes of exceedance; Submit proposals for remedial measures to the ER with a copy to ET and IEC within three working days of notification; Implement the agreed proposals; and Amend proposal as appropriate.
Limit level being exceeded by one sampling	 Identify source, investigate the causes of exceedance and propose remedial measures; Inform Contractor, IEC, ER, and EPD; Repeat measurement to confirm finding; Increase monitoring frequency to daily; and Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results. 	 Check monitoring data submitted by ET; Check Contractor's working method; Discuss with ET and Contractor on possible remedial measures; Advise the ER on the effectiveness of the proposed remedial measures; and Supervise implementation of remedial measures. 	 Confirm receipt of notification of exceedance in writing; Notify Contractor; Ensure remedial measures properly implemented. 	 Identify source(s) and investigate the causes of exceedance; Take immediate action to avoid further exceedance; Submit proposals for remedial measures to ER with a copy to ET and IEC within three working days of notification; Implement the agreed proposals; and Amend proposal if appropriate.
Limit level being exceeded by two or more consecutive sampling	 Notify IEC, ER, Contractor and EPD; Identify source; Repeat measurement to confirm findings; Increase monitoring frequency to daily; Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; Arrange meeting with IEC and ER to discuss the remedial actions to be taken; Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; and If exceedance stops, cease additional monitoring. 	 Check monitoring data submitted by the ET; Discuss amongst ER, ET, and Contractor on the potential remedial actions; Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; and Supervise the implementation of remedial measures. 	 Confirm receipt of notification of exceedance in writing; In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented; Supervise the implementation of remedial measures; and 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. 	 Identify source(s) and investigate the causes of exceedance; Take immediate action to avoid further exceedance; Submit proposals for remedial measures to the ER with a copy to the IEC and ET within three working days of notification; Implement the agreed proposals; Revise and resubmit proposals if problem still not under control; and 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								
EVENI	ET	IEC	ER	Contractor						
Action Level	 Notify IEC and Contractor; Carry out investigation; Report the results of investigation to the IEC, ER and Contractor; Discuss with the Contractor and formulate remedial measures; and Increase monitoring frequency to check mitigation effectiveness. 	 Review the analyzed results submitted by the ET; Review the proposed remedial measures by the Contractor and advise the ER accordingly; and Supervise the implementation of remedial measures. 	 Confirm receipt of notification of failure in writing; Notify Contractor; Require Contractor to propose remedial measures for the analyzed noise problem; and Ensure remedial measures are properly implemented. 	 Submit noise mitigation proposals to IEC; and Implement noise mitigation proposals. 						
Limit Level	 Identify source; Inform IEC, ER, EPD and Contractor; Repeat measurements to confirm findings; Increase monitoring frequency; Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; Inform IEC, ER and EPD the causes and actions taken for the exceedances; Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; and If exceedance stops, cease additional monitoring. 	 Discuss amongst ER, ET, and Contractor on the potential remedial actions; Review Contractors remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; and Supervise the implementation of remedial measures. 	 Confirm receipt of notification of failure in writing; Notify Contractor; Require Contractor to propose remedial measures for the analyzed noise problem; Ensure remedial measures properly implemented; and 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. 	 Take immediate action to avoid further exceedance; Submit proposals for remedial actions to IEC within 3 working days of notification; Implement the agreed proposals; Resubmit proposals if problem still not under control; and Stop the relevant portion of works as determined by the ER until the exceedance is abated. 						

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Appendix I

Weather and Meteorological

Conditions during Reporting Month



Weather Condition (January 2024)

			Air Temperatur	e	Mean	T ()
Date	Mean Pressure (hPa)	Maximum (°C)	Mean (°C)	Minimum (°C)	Relative Humidity (%)	Total Rainfall (mm)
1 January 2024	1019.9	22	19.9	18.8	75	0
2 January 2024	1019.1	20.5	18.7	17.8	76	0
3 January 2024	1020	21.6	18.8	15.7	64	0
4 January 2024	1020.9	19.6	17	15.4	67	0
5 January 2024	1020.2	22	18.8	16.6	75	0
6 January 2024	1020.1	23.8	20.2	17.8	76	0
7 January 2024	1021	21.8	19.9	18.6	71	0
8 January 2024	1019.6	20.6	19.1	17.7	73	Trace
9 January 2024	1017.2	23.9	20.5	18.1	77	Trace
10 January 2024	1018.6	23.2	20.3	17.9	67	0
11 January 2024	1020	21.5	18.9	17.6	69	Trace
12 January 2024	1019.1	21.8	18.9	17.1	75	0
13 January 2024	1019.9	22	19.6	17.8	57	0
14 January 2024	1021.1	23.8	20.7	18.5	56	0
15 January 2024	1021.2	24.8	20.9	18.8	71	0
16 January 2024	1022.1	20.5	18.7	17.5	75	0
17 January 2024	1020.4	20.6	19.2	17.7	72	0.1
18 January 2024	1017.7	24.2	21.2	19.1	74	0
19 January 2024	1016.3	24.2	21.1	19.2	76	0
20 January 2024	1016.3	24.6	21.4	19.5	75	0
21 January 2024	1020.3	21.3	19.1	16.3	68	Trace
22 January 2024	1023.3	18.5	15	9.8	72	0.5
23 January 2024	1028.5	10.4	7.9	6.3	75	2.7
24 January 2024	1029.2	12.5	9.2	6.5	59	0
25 January 2024	1028.7	15.5	12.3	9.5	56	0
26 January 2024	1027.3	17.8	15	13.1	61	0
27 January 2024	1025.8	18.8	15.5	13.1	67	1
28 January 2024	1026.4	15.7	13.7	11.7	83	2.4
29 January 2024	1023.4	17.8	15.9	14.3	82	Trace
30 January 2024	1020.7	20.2	18.3	16.8	88	Trace
31 January 2024	1019.4	20.2	19.3	17.9	92	Trace

Remark:

1. Trace means rainfall less than 0.05 mm.

Source: Hong Kong Observatory



Appendix J

Wind Data



Date & Time	Wind Speed (m/s)	Wind Direction	Date & Time	Wind Speed (m/s)	Wind Direction
01 Jan 2024 00:00	7.8	SES	02 Jan 2024 00:00	6.3	E
01 Jan 2024 01:00	3.6	SWS	02 Jan 2024 01:00	6.2	NEE
01 Jan 2024 02:00	4.7	S	02 Jan 2024 02:00	10.1	SE
01 Jan 2024 03:00	3.2	SES	02 Jan 2024 03:00	7.3	SWS
01 Jan 2024 04:00	5.2	SEE	02 Jan 2024 04:00	9.9	SEE
01 Jan 2024 05:00	3.4	SES	02 Jan 2024 05:00	3.7	E
01 Jan 2024 06:00	7.0	SEE	02 Jan 2024 06:00	8.2	E
01 Jan 2024 07:00	3.0	E	02 Jan 2024 07:00	7.1	SWS
01 Jan 2024 08:00	3.2	SES	02 Jan 2024 08:00	4.3	SE
01 Jan 2024 09:00	2.8	NEE	02 Jan 2024 09:00	9.2	SE
01 Jan 2024 10:00	4.4	E	02 Jan 2024 10:00	4.4	E
01 Jan 2024 11:00	3.7	E	02 Jan 2024 11:00	6.9	SEE
01 Jan 2024 12:00	7.4	SES	02 Jan 2024 12:00	4.4	SEE
01 Jan 2024 13:00	5.0	SE	02 Jan 2024 13:00	2.9	NEN
01 Jan 2024 14:00	4.8	SE	02 Jan 2024 14:00	2.7	NEN
01 Jan 2024 15:00	5.8	SES	02 Jan 2024 15:00	2.7	SE
01 Jan 2024 16:00	3.7	SES	02 Jan 2024 16:00	3.2	S
01 Jan 2024 17:00	3.6	S	02 Jan 2024 17:00	3.0	SW
01 Jan 2024 18:00	3.9	SWS	02 Jan 2024 18:00	2.8	E
01 Jan 2024 19:00	4.2	SWS	02 Jan 2024 19:00	3.4	NEN
01 Jan 2024 20:00	3.5	N	02 Jan 2024 20:00	2.8	E
01 Jan 2024 21:00	4.9	E	02 Jan 2024 21:00	2.8	SEE
01 Jan 2024 22:00	4.7	SEE	02 Jan 2024 22:00	2.7	SE
01 Jan 2024 23:00	4.2	SES	02 Jan 2024 23:00	2.7	NEN



Date & Time	Wind Speed (m/s)	Wind Direction	Date & Time	Wind Speed (m/s)	Wind Direction
03 Jan 2024 00:00	2.7	S	04 Jan 2024 00:00	2.7	SES
03 Jan 2024 01:00	2.8	SEE	04 Jan 2024 01:00	2.7	NEN
03 Jan 2024 02:00	2.7	SWS	04 Jan 2024 02:00	2.7	NE
03 Jan 2024 03:00	2.7	SE	04 Jan 2024 03:00	2.8	SW
03 Jan 2024 04:00	2.7	S	04 Jan 2024 04:00	2.8	E
03 Jan 2024 05:00	3.0	NE	04 Jan 2024 05:00	2.8	NE
03 Jan 2024 06:00	3.8	NEN	04 Jan 2024 06:00	2.8	SE
03 Jan 2024 07:00	7.5	NE	04 Jan 2024 07:00	3.1	SEE
03 Jan 2024 08:00	3.2	N	04 Jan 2024 08:00	2.8	E
03 Jan 2024 09:00	8.5	NEN	04 Jan 2024 09:00	3.1	NEE
03 Jan 2024 10:00	3.1	SE	04 Jan 2024 10:00	2.8	NEN
03 Jan 2024 11:00	3.9	NEN	04 Jan 2024 11:00	3.0	NE
03 Jan 2024 12:00	5.0	NEN	04 Jan 2024 12:00	2.8	NEE
03 Jan 2024 13:00	4.0	NEN	04 Jan 2024 13:00	2.7	E
03 Jan 2024 14:00	4.3	E	04 Jan 2024 14:00	3.6	SEE
03 Jan 2024 15:00	3.2	NE	04 Jan 2024 15:00	3.7	SE
03 Jan 2024 16:00	4.7	NEE	04 Jan 2024 16:00	4.1	S
03 Jan 2024 17:00	3.4	N	04 Jan 2024 17:00	5.3	SE
03 Jan 2024 18:00	2.8	NEN	04 Jan 2024 18:00	3.2	SE
03 Jan 2024 19:00	3.0	NEE	04 Jan 2024 19:00	2.8	S
03 Jan 2024 20:00	2.7	N	04 Jan 2024 20:00	2.8	S
03 Jan 2024 21:00	3.6	N	04 Jan 2024 21:00	2.7	NEE
03 Jan 2024 22:00	2.9	SEE	04 Jan 2024 22:00	2.7	NE
03 Jan 2024 23:00	2.7	E	04 Jan 2024 23:00	2.8	NEE



Date & Time	Wind Speed (m/s)	Wind Direction	Date & Time	Wind Speed (m/s)	Wind Direction
05 Jan 2024 00:00	2.8	NEE	06 Jan 2024 00:00	2.7	NEE
05 Jan 2024 01:00	2.7	SEE	06 Jan 2024 01:00	2.7	NEE
05 Jan 2024 02:00	2.8	SEE	06 Jan 2024 02:00	2.8	SE
05 Jan 2024 03:00	2.7	NE	06 Jan 2024 03:00	2.8	SES
05 Jan 2024 04:00	2.8	NE	06 Jan 2024 04:00	2.8	SES
05 Jan 2024 05:00	2.8	NEN	06 Jan 2024 05:00	2.8	SE
05 Jan 2024 06:00	2.9	NEE	06 Jan 2024 06:00	2.9	NEE
05 Jan 2024 07:00	2.7	S	06 Jan 2024 07:00	2.7	SES
05 Jan 2024 08:00	2.7	N	06 Jan 2024 08:00	2.7	NEE
05 Jan 2024 09:00	2.7	NEE	06 Jan 2024 09:00	2.7	NEE
05 Jan 2024 10:00	3.3	NEN	06 Jan 2024 10:00	2.6	NE
05 Jan 2024 11:00	2.9	NEN	06 Jan 2024 11:00	2.7	E
05 Jan 2024 12:00	2.7	NE	06 Jan 2024 12:00	2.7	NEN
05 Jan 2024 13:00	2.7	NEE	06 Jan 2024 13:00	3.4	NE
05 Jan 2024 14:00	5.0	SE	06 Jan 2024 14:00	3.0	SES
05 Jan 2024 15:00	3.0	SE	06 Jan 2024 15:00	7.2	SES
05 Jan 2024 16:00	4.2	SEE	06 Jan 2024 16:00	5.2	SEE
05 Jan 2024 17:00	2.7	SEE	06 Jan 2024 17:00	2.8	SWS
05 Jan 2024 18:00	2.8	NEE	06 Jan 2024 18:00	2.7	N
05 Jan 2024 19:00	2.7	SEE	06 Jan 2024 19:00	2.7	NEE
05 Jan 2024 20:00	2.7	SWS	06 Jan 2024 20:00	2.7	NE
05 Jan 2024 21:00	2.7	NEN	06 Jan 2024 21:00	2.7	N
05 Jan 2024 22:00	2.7	SE	06 Jan 2024 22:00	2.7	E
05 Jan 2024 23:00	2.7	SEE	06 Jan 2024 23:00	2.7	N



Date & Time	Wind Speed (m/s)	Wind Direction	Date & Time	Wind Speed (m/s)	Wind Direction
07 Jan 2024 00:00	2.7	NEE	08 Jan 2024 00:00	3.5	SEE
07 Jan 2024 01:00	2.7	NE	08 Jan 2024 01:00	4.7	NEE
07 Jan 2024 02:00	2.9	NEE	08 Jan 2024 02:00	6.2	SW
07 Jan 2024 03:00	2.8	SWS	08 Jan 2024 03:00	10.6	SES
07 Jan 2024 04:00	2.7	SES	08 Jan 2024 04:00	3.7	NEE
07 Jan 2024 05:00	2.7	NWW	08 Jan 2024 05:00	4.0	NE
07 Jan 2024 06:00	2.7	NEN	08 Jan 2024 06:00	3.2	SE
07 Jan 2024 07:00	2.8	NEE	08 Jan 2024 07:00	3.5	W
07 Jan 2024 08:00	2.7	E	08 Jan 2024 08:00	3.6	NEE
07 Jan 2024 09:00	3.1	E	08 Jan 2024 09:00	4.1	SE
07 Jan 2024 10:00	6.0	NEE	08 Jan 2024 10:00	5.3	SE
07 Jan 2024 11:00	5.5	SES	08 Jan 2024 11:00	2.7	NEE
07 Jan 2024 12:00	4.6	SES	08 Jan 2024 12:00	6.9	SEE
07 Jan 2024 13:00	6.2	SES	08 Jan 2024 13:00	2.9	SE
07 Jan 2024 14:00	5.2	SES	08 Jan 2024 14:00	3.8	SES
07 Jan 2024 15:00	4.0	SES	08 Jan 2024 15:00	3.1	NEE
07 Jan 2024 16:00	3.2	SES	08 Jan 2024 16:00	3.1	E
07 Jan 2024 17:00	3.8	SE	08 Jan 2024 17:00	3.0	NEE
07 Jan 2024 18:00	7.6	E	08 Jan 2024 18:00	4.1	NE
07 Jan 2024 19:00	4.3	SES	08 Jan 2024 19:00	5.0	SEE
07 Jan 2024 20:00	4.7	SES	08 Jan 2024 20:00	2.7	S
07 Jan 2024 21:00	6.1	N	08 Jan 2024 21:00	2.7	SWW
07 Jan 2024 22:00	8.8	NEN	08 Jan 2024 22:00	2.7	SE
07 Jan 2024 23:00	3.0	NEE	08 Jan 2024 23:00	2.7	NEN



Date & Time	Wind Speed (m/s)	Wind Direction	Date & Time	Wind Speed (m/s)	Wind Direction
09 Jan 2024 00:00	2.7	E	10 Jan 2024 00:00	2.8	SES
09 Jan 2024 01:00	3.0	SWS	10 Jan 2024 01:00	2.9	SE
09 Jan 2024 02:00	2.8	SWW	10 Jan 2024 02:00	2.9	E
09 Jan 2024 03:00	2.8	SEE	10 Jan 2024 03:00	2.8	NEE
09 Jan 2024 04:00	2.8	SES	10 Jan 2024 04:00	2.7	SE
09 Jan 2024 05:00	2.7	NEN	10 Jan 2024 05:00	2.9	S
09 Jan 2024 06:00	2.7	E	10 Jan 2024 06:00	2.8	SEE
09 Jan 2024 07:00	2.8	E	10 Jan 2024 07:00	2.8	SE
09 Jan 2024 08:00	2.7	E	10 Jan 2024 08:00	3.3	NEN
09 Jan 2024 09:00	2.7	NEN	10 Jan 2024 09:00	3.0	NEE
09 Jan 2024 10:00	2.6	NE	10 Jan 2024 10:00	2.7	SE
09 Jan 2024 11:00	2.7	SE	10 Jan 2024 11:00	2.7	NE
09 Jan 2024 12:00	2.7	NE	10 Jan 2024 12:00	2.7	SWS
09 Jan 2024 13:00	5.3	SW	10 Jan 2024 13:00	2.7	SEE
09 Jan 2024 14:00	4.5	SWW	10 Jan 2024 14:00	2.8	SES
09 Jan 2024 15:00	7.3	S	10 Jan 2024 15:00	2.7	NEE
09 Jan 2024 16:00	3.3	SES	10 Jan 2024 16:00	2.8	S
09 Jan 2024 17:00	2.7	SES	10 Jan 2024 17:00	2.7	SWS
09 Jan 2024 18:00	3.0	NEE	10 Jan 2024 18:00	2.7	S
09 Jan 2024 19:00	2.7	E	10 Jan 2024 19:00	2.7	SW
09 Jan 2024 20:00	2.7	NEE	10 Jan 2024 20:00	2.7	W
09 Jan 2024 21:00	2.7	SE	10 Jan 2024 21:00	2.8	E
09 Jan 2024 22:00	2.7	E	10 Jan 2024 22:00	2.7	SES
09 Jan 2024 23:00	2.8	E	10 Jan 2024 23:00	2.7	SW



Date & Time	Wind Speed (m/s)	Wind Direction	Date & Time	Wind Speed (m/s)	Wind Direction
11 Jan 2024 00:00	2.8	E	12 Jan 2024 00:00	2.7	NEE
11 Jan 2024 01:00	2.8	NE	12 Jan 2024 01:00	2.7	NEN
11 Jan 2024 02:00	2.7	SE	12 Jan 2024 02:00	2.7	NE
11 Jan 2024 03:00	3.0	SES	12 Jan 2024 03:00	2.7	NE
11 Jan 2024 04:00	2.7	SES	12 Jan 2024 04:00	2.7	NEE
11 Jan 2024 05:00	2.7	SES	12 Jan 2024 05:00	2.7	NEN
11 Jan 2024 06:00	2.7	NEE	12 Jan 2024 06:00	2.7	SEE
11 Jan 2024 07:00	2.9	SWW	12 Jan 2024 07:00	2.7	SEE
11 Jan 2024 08:00	2.8	S	12 Jan 2024 08:00	2.6	SEE
11 Jan 2024 09:00	2.7	SW	12 Jan 2024 09:00	2.7	NEN
11 Jan 2024 10:00	2.7	NEE	12 Jan 2024 10:00	2.8	NEE
11 Jan 2024 11:00	2.9	E	12 Jan 2024 11:00	2.7	SEE
11 Jan 2024 12:00	3.1	S	12 Jan 2024 12:00	2.7	NE
11 Jan 2024 13:00	2.9	W	12 Jan 2024 13:00	5.2	E
11 Jan 2024 14:00	3.3	SWW	12 Jan 2024 14:00	4.6	NE
11 Jan 2024 15:00	3.4	S	12 Jan 2024 15:00	4.0	NE
11 Jan 2024 16:00	3.9	SWS	12 Jan 2024 16:00	4.7	NE
11 Jan 2024 17:00	3.0	SE	12 Jan 2024 17:00	4.6	E
11 Jan 2024 18:00	2.8	SES	12 Jan 2024 18:00	3.1	NEE
11 Jan 2024 19:00	2.7	NEE	12 Jan 2024 19:00	2.8	NE
11 Jan 2024 20:00	2.7	SE	12 Jan 2024 20:00	2.7	SES
11 Jan 2024 21:00	2.7	NE	12 Jan 2024 21:00	2.7	S
11 Jan 2024 22:00	2.7	SE	12 Jan 2024 22:00	2.7	NEE
11 Jan 2024 23:00	2.7	SE	12 Jan 2024 23:00	2.7	SE

Date & Time	Wind Speed (m/s)	Wind Direction	Date & Time	Wind Speed (m/s)	Wind Direction
13 Jan 2024 00:00	2.8	SEE	14 Jan 2024 00:00	3.2	E
13 Jan 2024 01:00	2.8	NE	14 Jan 2024 01:00	5.3	N
13 Jan 2024 02:00	2.7	NE	14 Jan 2024 02:00	3.0	E
13 Jan 2024 03:00	2.7	SW	14 Jan 2024 03:00	2.7	SE
13 Jan 2024 04:00	2.7	NEN	14 Jan 2024 04:00	2.8	E
13 Jan 2024 05:00	2.7	NEN	14 Jan 2024 05:00	2.7	NEN
13 Jan 2024 06:00	2.7	NE	14 Jan 2024 06:00	2.7	SES
13 Jan 2024 07:00	2.7	S	14 Jan 2024 07:00	2.7	N
13 Jan 2024 08:00	2.7	NEE	14 Jan 2024 08:00	2.7	N
13 Jan 2024 09:00	2.6	NEN	14 Jan 2024 09:00	2.7	NE
13 Jan 2024 10:00	3.5	SE	14 Jan 2024 10:00	2.7	SE
13 Jan 2024 11:00	2.9	NE	14 Jan 2024 11:00	2.7	SES
13 Jan 2024 12:00	4.9	NEE	14 Jan 2024 12:00	2.8	E
13 Jan 2024 13:00	3.2	NEE	14 Jan 2024 13:00	2.9	SEE
13 Jan 2024 14:00	6.4	E	14 Jan 2024 14:00	2.7	NE
13 Jan 2024 15:00	2.8	NEE	14 Jan 2024 15:00	3.1	NEN
13 Jan 2024 16:00	4.1	NEE	14 Jan 2024 16:00	2.7	N
13 Jan 2024 17:00	3.2	NEE	14 Jan 2024 17:00	2.7	SWS
13 Jan 2024 18:00	3.3	NE	14 Jan 2024 18:00	2.7	SEE
13 Jan 2024 19:00	2.7	NEN	14 Jan 2024 19:00	2.7	E
13 Jan 2024 20:00	2.7	NEN	14 Jan 2024 20:00	2.7	NEE
13 Jan 2024 21:00	2.9	E	14 Jan 2024 21:00	2.7	SE
13 Jan 2024 22:00	2.8	NEE	14 Jan 2024 22:00	2.7	NE
13 Jan 2024 23:00	2.9	NEE	14 Jan 2024 23:00	2.7	NEE



Date & Time	Wind Speed (m/s)	Wind Direction	Date & Time	Wind Speed (m/s)	Wind Direction
15 Jan 2024 00:00	2.7	NE	16 Jan 2024 00:00	5.9	W
15 Jan 2024 01:00	2.7	NEE	16 Jan 2024 01:00	4.5	E
15 Jan 2024 02:00	2.7	NE	16 Jan 2024 02:00	12.5	SE
15 Jan 2024 03:00	2.8	NEE	16 Jan 2024 03:00	6.8	NE
15 Jan 2024 04:00	2.8	NEE	16 Jan 2024 04:00	6.9	NEE
15 Jan 2024 05:00	2.8	SEE	16 Jan 2024 05:00	3.8	S
15 Jan 2024 06:00	2.9	NEN	16 Jan 2024 06:00	4.2	E
15 Jan 2024 07:00	2.8	SES	16 Jan 2024 07:00	5.0	NE
15 Jan 2024 08:00	2.7	SWS	16 Jan 2024 08:00	6.0	SW
15 Jan 2024 09:00	2.7	NEE	16 Jan 2024 09:00	5.3	SE
15 Jan 2024 10:00	2.7	NEE	16 Jan 2024 10:00	4.3	NE
15 Jan 2024 11:00	4.3	SE	16 Jan 2024 11:00	3.0	E
15 Jan 2024 12:00	3.3	N	16 Jan 2024 12:00	4.1	NEE
15 Jan 2024 13:00	5.1	E	16 Jan 2024 13:00	4.7	E
15 Jan 2024 14:00	3.4	NEE	16 Jan 2024 14:00	7.3	NEE
15 Jan 2024 15:00	5.8	SEE	16 Jan 2024 15:00	3.1	E
15 Jan 2024 16:00	5.6	N	16 Jan 2024 16:00	3.6	NE
15 Jan 2024 17:00	5.0	S	16 Jan 2024 17:00	3.4	SE
15 Jan 2024 18:00	2.8	E	16 Jan 2024 18:00	2.8	SEE
15 Jan 2024 19:00	3.4	SEE	16 Jan 2024 19:00	3.2	SE
15 Jan 2024 20:00	7.7	SEE	16 Jan 2024 20:00	2.9	SES
15 Jan 2024 21:00	4.8	E	16 Jan 2024 21:00	3.7	E
15 Jan 2024 22:00	4.9	SEE	16 Jan 2024 22:00	4.0	NEE
15 Jan 2024 23:00	14.5	NEE	16 Jan 2024 23:00	4.3	SE



Date & Time	Wind Speed (m/s)	Wind Direction	Date & Time	Wind Speed (m/s)	Wind Direction
17 Jan 2024 00:00	3.1	NEN	18 Jan 2024 00:00	2.7	NEE
17 Jan 2024 01:00	3.6	SE	18 Jan 2024 01:00	2.7	E
17 Jan 2024 02:00	3.1	NE	18 Jan 2024 02:00	2.7	NE
17 Jan 2024 03:00	2.8	NE	18 Jan 2024 03:00	2.7	E
17 Jan 2024 04:00	2.8	NE	18 Jan 2024 04:00	2.7	SE
17 Jan 2024 05:00	2.7	SW	18 Jan 2024 05:00	2.7	NEN
17 Jan 2024 06:00	2.7	NEN	18 Jan 2024 06:00	2.7	NEE
17 Jan 2024 07:00	2.7	N	18 Jan 2024 07:00	2.7	E
17 Jan 2024 08:00	3.2	N	18 Jan 2024 08:00	2.7	NEN
17 Jan 2024 09:00	2.7	S	18 Jan 2024 09:00	2.7	NE
17 Jan 2024 10:00	3.2	NEN	18 Jan 2024 10:00	2.7	E
17 Jan 2024 11:00	2.7	E	18 Jan 2024 11:00	2.9	NE
17 Jan 2024 12:00	2.7	SEE	18 Jan 2024 12:00	2.7	SEE
17 Jan 2024 13:00	2.7	N	18 Jan 2024 13:00	2.7	NEN
17 Jan 2024 14:00	2.8	SWS	18 Jan 2024 14:00	2.7	NE
17 Jan 2024 15:00	3.0	SEE	18 Jan 2024 15:00	2.7	SEE
17 Jan 2024 16:00	2.7	SWW	18 Jan 2024 16:00	2.8	SE
17 Jan 2024 17:00	2.7	N	18 Jan 2024 17:00	2.8	N
17 Jan 2024 18:00	2.7	E	18 Jan 2024 18:00	2.7	NEN
17 Jan 2024 19:00	2.7	E	18 Jan 2024 19:00	2.7	NEN
17 Jan 2024 20:00	2.7	SE	18 Jan 2024 20:00	2.7	NE
17 Jan 2024 21:00	2.7	N	18 Jan 2024 21:00	2.7	NEE
17 Jan 2024 22:00	2.7	NEE	18 Jan 2024 22:00	2.7	SES
17 Jan 2024 23:00	2.7	SEE	18 Jan 2024 23:00	2.8	SES



Date & Time	Wind Speed (m/s)	Wind Direction	Date & Time	Wind Speed (m/s)	Wind Direction
19 Jan 2024 00:00	2.9	SWS	20 Jan 2024 00:00	3.0	SEE
19 Jan 2024 01:00	2.9	SE	20 Jan 2024 01:00	3.0	NE
19 Jan 2024 02:00	3.0	E	20 Jan 2024 02:00	2.7	SE
19 Jan 2024 03:00	3.0	E	20 Jan 2024 03:00	2.7	E
19 Jan 2024 04:00	3.2	SEE	20 Jan 2024 04:00	2.8	SE
19 Jan 2024 05:00	3.3	NEE	20 Jan 2024 05:00	2.7	NEE
19 Jan 2024 06:00	3.3	NEE	20 Jan 2024 06:00	2.9	NE
19 Jan 2024 07:00	2.9	NEN	20 Jan 2024 07:00	2.7	SEE
19 Jan 2024 08:00	2.7	E	20 Jan 2024 08:00	2.7	E
19 Jan 2024 09:00	2.7	NE	20 Jan 2024 09:00	2.6	E
19 Jan 2024 10:00	2.9	E	20 Jan 2024 10:00	2.6	NE
19 Jan 2024 11:00	5.1	E	20 Jan 2024 11:00	2.6	NEE
19 Jan 2024 12:00	3.6	NEE	20 Jan 2024 12:00	2.7	SW
19 Jan 2024 13:00	5.4	NEE	20 Jan 2024 13:00	2.6	NE
19 Jan 2024 14:00	3.7	E	20 Jan 2024 14:00	2.6	E
19 Jan 2024 15:00	3.2	S	20 Jan 2024 15:00	2.9	NEN
19 Jan 2024 16:00	3.7	NEN	20 Jan 2024 16:00	2.7	NE
19 Jan 2024 17:00	4.9	SE	20 Jan 2024 17:00	2.7	SE
19 Jan 2024 18:00	3.3	E	20 Jan 2024 18:00	2.7	S
19 Jan 2024 19:00	2.7	S	20 Jan 2024 19:00	2.8	NEE
19 Jan 2024 20:00	2.7	NEE	20 Jan 2024 20:00	2.7	NE
19 Jan 2024 21:00	2.8	NEN	20 Jan 2024 21:00	2.8	E
19 Jan 2024 22:00	2.8	S	20 Jan 2024 22:00	2.9	SE
19 Jan 2024 23:00	2.7	NEN	20 Jan 2024 23:00	2.8	NEN



Date & Time	Wind Speed (m/s)	Wind Direction	Date & Time	Wind Speed (m/s)	Wind Direction
21 Jan 2024 00:00	3.3	SE	22 Jan 2024 00:00	4.2	SEE
21 Jan 2024 01:00	3.5	NE	22 Jan 2024 01:00	4.2	S
21 Jan 2024 02:00	2.7	SE	22 Jan 2024 02:00	2.7	SEE
21 Jan 2024 03:00	2.7	NEN	22 Jan 2024 03:00	2.7	NE
21 Jan 2024 04:00	2.7	E	22 Jan 2024 04:00	2.8	NEE
21 Jan 2024 05:00	2.7	N	22 Jan 2024 05:00	2.7	NE
21 Jan 2024 06:00	2.8	NE	22 Jan 2024 06:00	2.8	NEE
21 Jan 2024 07:00	2.7	N	22 Jan 2024 07:00	2.8	E
21 Jan 2024 08:00	2.7	E	22 Jan 2024 08:00	2.8	NEN
21 Jan 2024 09:00	2.8	E	22 Jan 2024 09:00	2.8	E
21 Jan 2024 10:00	3.3	NEE	22 Jan 2024 10:00	3.0	SES
21 Jan 2024 11:00	2.7	N	22 Jan 2024 11:00	2.8	SWS
21 Jan 2024 12:00	2.7	NEE	22 Jan 2024 12:00	2.7	NEE
21 Jan 2024 13:00	2.7	E	22 Jan 2024 13:00	3.1	NE
21 Jan 2024 14:00	2.7	NEN	22 Jan 2024 14:00	3.2	SE
21 Jan 2024 15:00	2.7	NE	22 Jan 2024 15:00	2.8	SES
21 Jan 2024 16:00	2.7	SEE	22 Jan 2024 16:00	2.9	S
21 Jan 2024 17:00	2.7	NEE	22 Jan 2024 17:00	6.7	NEN
21 Jan 2024 18:00	2.7	SEE	22 Jan 2024 18:00	3.0	E
21 Jan 2024 19:00	2.7	NEE	22 Jan 2024 19:00	3.0	N
21 Jan 2024 20:00	2.7	N	22 Jan 2024 20:00	5.6	SES
21 Jan 2024 21:00	2.8	NE	22 Jan 2024 21:00	3.2	E
21 Jan 2024 22:00	2.7	NEE	22 Jan 2024 22:00	3.1	NEN
21 Jan 2024 23:00	2.9	SEE	22 Jan 2024 23:00	3.4	S



Date & Time	Wind Speed (m/s)	Wind Direction	Date & Time	Wind Speed (m/s)	Wind Direction
23 Jan 2024 00:00	2.8	S	24 Jan 2024 00:00	2.7	NEE
23 Jan 2024 01:00	3.4	SEE	24 Jan 2024 01:00	2.7	SES
23 Jan 2024 02:00	3.4	NE	24 Jan 2024 02:00	3.3	NE
23 Jan 2024 03:00	3.2	NEE	24 Jan 2024 03:00	2.7	NE
23 Jan 2024 04:00	3.9	SWS	24 Jan 2024 04:00	2.7	NE
23 Jan 2024 05:00	3.2	NEN	24 Jan 2024 05:00	3.1	Ν
23 Jan 2024 06:00	3.1	NE	24 Jan 2024 06:00	2.7	NEN
23 Jan 2024 07:00	2.8	SE	24 Jan 2024 07:00	2.7	E
23 Jan 2024 08:00	2.8	NE	24 Jan 2024 08:00	2.7	SWS
23 Jan 2024 09:00	2.9	SEE	24 Jan 2024 09:00	2.7	NEE
23 Jan 2024 10:00	3.0	NEE	24 Jan 2024 10:00	2.8	E
23 Jan 2024 11:00	2.8	SEE	24 Jan 2024 11:00	2.7	NEE
23 Jan 2024 12:00	3.0	SES	24 Jan 2024 12:00	2.7	E
23 Jan 2024 13:00	2.8	N	24 Jan 2024 13:00	2.7	SE
23 Jan 2024 14:00	2.9	SWS	24 Jan 2024 14:00	2.7	S
23 Jan 2024 15:00	2.7	S	24 Jan 2024 15:00	2.8	SW
23 Jan 2024 16:00	3.0	E	24 Jan 2024 16:00	2.7	E
23 Jan 2024 17:00	3.6	E	24 Jan 2024 17:00	2.7	E
23 Jan 2024 18:00	2.9	SE	24 Jan 2024 18:00	2.7	SES
23 Jan 2024 19:00	2.8	NE	24 Jan 2024 19:00	2.7	SE
23 Jan 2024 20:00	3.2	SES	24 Jan 2024 20:00	2.7	NEN
23 Jan 2024 21:00	3.1	N	24 Jan 2024 21:00	2.7	NE
23 Jan 2024 22:00	2.7	NE	24 Jan 2024 22:00	2.7	E
23 Jan 2024 23:00	2.7	E	24 Jan 2024 23:00	2.8	NE



Date & Time	Wind Speed (m/s)	Wind Direction	Date & Time	Wind Speed (m/s)	Wind Direction
25 Jan 2024 00:00	2.7	NEN	26 Jan 2024 00:00	2.7	NEE
25 Jan 2024 01:00	2.7	SEE	26 Jan 2024 01:00	2.7	N
25 Jan 2024 02:00	2.7	SES	26 Jan 2024 02:00	2.7	NEE
25 Jan 2024 03:00	2.7	NE	26 Jan 2024 03:00	2.7	NEE
25 Jan 2024 04:00	2.7	NEN	26 Jan 2024 04:00	2.7	NEE
25 Jan 2024 05:00	2.7	NEN	26 Jan 2024 05:00	2.7	E
25 Jan 2024 06:00	2.7	NEE	26 Jan 2024 06:00	2.7	E
25 Jan 2024 07:00	3.6	N	26 Jan 2024 07:00	2.7	NE
25 Jan 2024 08:00	2.7	NE	26 Jan 2024 08:00	2.7	S
25 Jan 2024 09:00	2.7	E	26 Jan 2024 09:00	2.8	E
25 Jan 2024 10:00	2.9	NEN	26 Jan 2024 10:00	2.7	NEE
25 Jan 2024 11:00	2.7	N	26 Jan 2024 11:00	2.8	E
25 Jan 2024 12:00	2.7	NEE	26 Jan 2024 12:00	2.7	NEE
25 Jan 2024 13:00	2.7	E	26 Jan 2024 13:00	2.7	SE
25 Jan 2024 14:00	2.6	NEN	26 Jan 2024 14:00	2.7	NEE
25 Jan 2024 15:00	2.7	E	26 Jan 2024 15:00	2.7	E
25 Jan 2024 16:00	2.7	E	26 Jan 2024 16:00	2.7	NEE
25 Jan 2024 17:00	2.7	NEE	26 Jan 2024 17:00	2.7	NEE
25 Jan 2024 18:00	2.7	SEE	26 Jan 2024 18:00	2.7	NEE
25 Jan 2024 19:00	2.8	NEN	26 Jan 2024 19:00	2.7	N
25 Jan 2024 20:00	2.8	NE	26 Jan 2024 20:00	2.8	E
25 Jan 2024 21:00	2.7	NEN	26 Jan 2024 21:00	2.7	E
25 Jan 2024 22:00	2.8	SE	26 Jan 2024 22:00	2.7	SEE
25 Jan 2024 23:00	2.8	SE	26 Jan 2024 23:00	2.7	NEN

Date & Time	Wind Speed (m/s)	Wind Direction	Date & Time	Wind Speed (m/s)	Wind Direction
27 Jan 2024 00:00	2.7	E	28 Jan 2024 00:00	2.8	SES
27 Jan 2024 01:00	2.7	E	28 Jan 2024 01:00	2.8	N
27 Jan 2024 02:00	2.7	E	28 Jan 2024 02:00	2.7	SE
27 Jan 2024 03:00	2.7	E	28 Jan 2024 03:00	2.8	SEE
27 Jan 2024 04:00	2.7	NE	28 Jan 2024 04:00	2.8	SEE
27 Jan 2024 05:00	2.7	NE	28 Jan 2024 05:00	3.0	NE
27 Jan 2024 06:00	2.8	SE	28 Jan 2024 06:00	2.9	SES
27 Jan 2024 07:00	2.7	NEN	28 Jan 2024 07:00	3.2	E
27 Jan 2024 08:00	2.7	NEN	28 Jan 2024 08:00	3.1	NEN
27 Jan 2024 09:00	2.7	SEE	28 Jan 2024 09:00	3.0	NEE
27 Jan 2024 10:00	2.7	NEN	28 Jan 2024 10:00	2.8	NE
27 Jan 2024 11:00	2.7	NE	28 Jan 2024 11:00	2.8	NEN
27 Jan 2024 12:00	2.7	NE	28 Jan 2024 12:00	2.7	NE
27 Jan 2024 13:00	2.7	NEN	28 Jan 2024 13:00	2.7	SES
27 Jan 2024 14:00	2.6	NE	28 Jan 2024 14:00	2.6	NEN
27 Jan 2024 15:00	2.6	NEE	28 Jan 2024 15:00	2.7	NEN
27 Jan 2024 16:00	2.7	SE	28 Jan 2024 16:00	2.7	SEE
27 Jan 2024 17:00	2.8	SWS	28 Jan 2024 17:00	2.7	SEE
27 Jan 2024 18:00	2.7	NEN	28 Jan 2024 18:00	2.7	NE
27 Jan 2024 19:00	2.7	NEN	28 Jan 2024 19:00	2.7	SEE
27 Jan 2024 20:00	2.8	NEE	28 Jan 2024 20:00	2.8	E
27 Jan 2024 21:00	3.1	N	28 Jan 2024 21:00	2.7	E
27 Jan 2024 22:00	2.8	NE	28 Jan 2024 22:00	2.7	SE
27 Jan 2024 23:00	2.8	SEE	28 Jan 2024 23:00	2.7	E



Date & Time	Wind Speed (m/s)	Wind Direction	Date & Time	Wind Speed (m/s)	Wind Direction
29 Jan 2024 00:00	2.7	E	30 Jan 2024 00:00	2.7	NE
29 Jan 2024 01:00	2.7	E	30 Jan 2024 01:00	3.1	NEN
29 Jan 2024 02:00	2.7	E	30 Jan 2024 02:00	3.2	NEN
29 Jan 2024 03:00	2.7	E	30 Jan 2024 03:00	3.0	NEN
29 Jan 2024 04:00	2.7	E	30 Jan 2024 04:00	3.1	NEN
29 Jan 2024 05:00	2.7	E	30 Jan 2024 05:00	2.7	NEN
29 Jan 2024 06:00	2.7	SEE	30 Jan 2024 06:00	2.7	E
29 Jan 2024 07:00	2.7	SE	30 Jan 2024 07:00	2.9	SES
29 Jan 2024 08:00	2.8	NEN	30 Jan 2024 08:00	3.1	NEE
29 Jan 2024 09:00	2.7	NE	30 Jan 2024 09:00	2.7	NEN
29 Jan 2024 10:00	3.0	N	30 Jan 2024 10:00	2.7	SE
29 Jan 2024 11:00	2.7	NEN	30 Jan 2024 11:00	2.7	NE
29 Jan 2024 12:00	2.7	E	30 Jan 2024 12:00	2.7	NEN
29 Jan 2024 13:00	2.7	S	30 Jan 2024 13:00	2.7	NEN
29 Jan 2024 14:00	2.7	NE	30 Jan 2024 14:00	2.7	SE
29 Jan 2024 15:00	2.7	NE	30 Jan 2024 15:00	2.7	E
29 Jan 2024 16:00	2.7	NEE	30 Jan 2024 16:00	3.0	NEN
29 Jan 2024 17:00	2.7	NEN	30 Jan 2024 17:00	3.1	SEE
29 Jan 2024 18:00	2.7	NEE	30 Jan 2024 18:00	3.2	E
29 Jan 2024 19:00	2.7	NEN	30 Jan 2024 19:00	5.5	NEN
29 Jan 2024 20:00	2.7	NE	30 Jan 2024 20:00	4.8	SE
29 Jan 2024 21:00	2.7	NEE	30 Jan 2024 21:00	3.3	E
29 Jan 2024 22:00	2.7	E	30 Jan 2024 22:00	2.9	NEN
29 Jan 2024 23:00	2.7	NEN	30 Jan 2024 23:00	2.9	NE



Date & Time	Wind Speed (m/s)	Wind Direction	Date & Time	Wind Speed (m/s)	Wind Direction
31 Jan 2024 00:00	2.9	SE			
31 Jan 2024 01:00	2.9	NEE			
31 Jan 2024 02:00	2.9	NEE			
31 Jan 2024 03:00	2.8	NE			
31 Jan 2024 04:00	3.0	SWS			
31 Jan 2024 05:00	3.0	NE			
31 Jan 2024 06:00	3.1	NEE			
31 Jan 2024 07:00	3.4	N			
31 Jan 2024 08:00	2.8	NEE			
31 Jan 2024 09:00	2.8	NE			
31 Jan 2024 10:00	2.8	NEN			
31 Jan 2024 11:00	2.8	NEE			
31 Jan 2024 12:00	2.8	NE			
31 Jan 2024 13:00	2.7	NEN			
31 Jan 2024 14:00	3.6	NEN			
31 Jan 2024 15:00	2.8	E			
31 Jan 2024 16:00	3.0	NEN			
31 Jan 2024 17:00	2.8	NEE			
31 Jan 2024 18:00	2.9	NEE			
31 Jan 2024 19:00	2.9	NEN			
31 Jan 2024 20:00	2.9	N			
31 Jan 2024 21:00	2.9	NE			
31 Jan 2024 22:00	2.9	NE			
31 Jan 2024 23:00	3.2	E			

Appendix K

Summary of ET's Site Environmental Audit in the Reporting Month

UGRO

Parameters	Date	Observations and Recommendations	Follow-up
Air Quality		NA	
Noise		NA	
Water Quality		NA	
Chemical and Waste Management		NA	
Landscape and Visual Impact		NA	
Permit / Licenses		NA	
Others		NA	



Appendix L

Waste Flow Table



Waste Flow Table (2024)

	Actual Quantities of Inert C&D Materials Generated Monthly					Actual Quantities of C&D Wastes Generated		Actual Quantities of Recyclables Generation				
Monthly Ending	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)
2024 Jan	0.186	0.000	0.000	0.000	0.186	0.000	0.000	14.060	0.000	0.000	0.000	0.000
2024 Feb												
2024 Mar												
2024 Apr												
2024 May												
2024 Jun												
2024 Jul												
2024 Aug												
2024 Sep												
2024 Oct												
2024 Nov												
2024 Dec												
Total	0.186	0.000	0.000	0.000	0.186	0.000	0.000	14.060	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 M

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



Appendix N

Implementation Status of Environmental Mitigation Measures (Construction Phase)



Implementation Status of Environmental Mitigation Measures (Construction Phase)

EIA	Environmental Protection Measures (Construction Phase) ⁽¹⁾	Location &	Implementation
Ref.	A) Air Quality	(Implementation	Status
(No.)		Agent)	Otatus
3.7.1.1	Sufficient dust suppression measures as stipulated under the Air Pollution Control (Construction Dust) Regulation (Cap. 311R), as well as good site practices and		
(A1)	good housekeeping of the site should be properly implemented in order to minimise the construction dust generated. These measures include the followings::		
	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,	All construction sites /	Implemented
	watering should be applied to aggregate fines;	construction phase / upon	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;	completion of all	Implemented
	f) Open temporary stockpiles should be avoided or covered. Prevent placing dusty material storage piles near ASRs;	construction activities	mplemented
	g) Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations;	(Contractor)	Implemented
	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
	1) Avoid unnecessary exposed earth.		Implemented
3.7.1.2	Guidelines stipulated in EPD's Recommended Pollution Control Clauses for Construction Contracts should be incorporated in the contract documents to abate dust		
(A2)	impacts. The clauses include:		
	a) The contractor shall observe and comply with the Air Pollution Control Ordinance and its subsidiary regulations, particularly the Air Pollution Control	All construction sites /	Implemented
	(Construction Dust) Regulation.	construction phase / upon	
	b) The contractor shall undertake at all times to prevent dust nuisance as a result of the construction activities.	completion of all	Implemented
	c) The contractor shall ensure that there will be adequate water supply / storage for dust suppression.	construction activities	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	(Contractor)	Implemented
	environment, and shall provide experienced personnel with suitable training to ensure that these methods are implemented.	(Contractor)	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		Implemented
	used on the site for the engineer inspection and approval.		Implemented
3.4.1.4	Control on fuel combustion from the use of PMEs	All construction sites /	
(A3)	a) Legal control on the types of fuel allowed for use and their sulphur contents in commercial and industrial processes should be observed.	construction phase / upon	Implemented
	b) Only approved or exempted non-road mobile machinery should be allowed to be used in construction sites.	completion of all	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).	construction activities	Implemented
	· · · · · · · · · · · · · · · · · · ·	(Contractor)	····

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.

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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: a) Only well-maintained PME to be operated on site and should be serviced regularly during construction; b) Silencers or mufflers on construction equipment should be utilised (if appropriate) and should be properly maintained during the construction; c) Mobile plant, if any, should be sited as far away from NSRs as possible; 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; e) Plant known to emit noise strongly in one direction should, wherever possible, be orientated to direct noise away from the nearby NSRs; and f) Material stockpiles and other structures should be effectively utilised, wherever practicable, in screening noise from on-site construction activities	All construction sites / construction phase / upon completion of all construction activities (Contractor)	Implemented N/A Implemented Implemented Implemented Implemented
4.8.1.3 – 4.8.1.4 & Table 7 (B2)	Use of Quiet PME 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.	All construction sites / construction phase / upon completion of all construction activities (Contractor)	Implemented
4.8.1.5 (B3)	Use of Movable Noise Barriers/Acoustic Mats 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/m ² 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.	All construction sites / construction phase / upon completion of all construction activities (Contractor)	Implemented
4.8.1.7 (B4)	Scheduling of Noisy Activities to outside Examination Period of HKBTS 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. 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.	All construction sites / construction phase / upon completion of all construction activities (Contractor)	Implemented Implemented

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Implementation Status of Environmental Mitigation Measures (Construction Phase)

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.	Environmental Protection Measures (Construction Phase) ⁽¹⁾	Location & (Implementation	Implementation Status
(No.)	C) Water Quality	Agent)	Status
5.8.1.1 (C1)	<u>Construction Site Runoff</u> 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 " <i>Construction Site Drainage</i> ". 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.	All construction sites /	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.	construction phase / upon completion of all construction activities (Contractor)	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	<u>General Construction Activities</u> 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		
(C2)	system.	All construction sites /	Implemented
	b) Stockpiles of cement and other construction materials should be kept covered when not being used.	construction sites /	Implemented
	c) Oils and fuels should only be used and stored in designated areas, which have pollution prevention facilities.	upon completion of all construction activities	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.	(Contractor)	Implemented
5.8.1.4	Sewage Effluent	All construction sites /	
(C3)	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.	construction phase / upon completion of all construction activities (Contractor)	Implemented



Sai O Trunk Sewer Sewage Pumping Station

EIA Ref. (No.)	Environmental Protection Measures (Construction Phase) ⁽¹⁾ C) Water Ouality	Location & (Implementation Agent)	Implementation Status
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:		(Contractor)	<u> </u>

(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.



EIA	Environmental Protection Measures (Construction Phase) ⁽¹⁾	Location &	
Ref. (No.)	D) Waste Management	(Implementation Agent)	Implementation Status
6.5.1.3 (D1)	Good Site Practices Recommendations for good site practices during the construction phase include:		
(D1)	 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;	All construction sites / construction phase / upon completion of all	Implemented
	c) Provision of sufficient waste reception / disposal points, and regular collection of waste;	construction activities	Implemented
	 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; 	(Contractor)	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:	-	
	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;	All construction sites /	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;	construction phase / upon completion of all	Implemented
	c) Recycle any unused chemicals or those with remaining functional capacity;	construction activities	Implemented
	d) Maximise the use of reusable steel formwork to reduce the amount of C&D materials;	(Contractor)	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	Reducing and Reuse of C&D Materials		
(D3)	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.	All construction sites / construction phase / upon completion of all	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.	construction activities (Contractor)	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:	construction phase /	
	a) cover material during heavy rainfall;	upon completion of all construction activities	Implemented
	b) locate stockpiles to minimise potential visual impacts; and	(Contractor)	Implemented
	c) minimise land intake of stockpile areas as far as possible.		Implemented



Sai O Trunk Sewer Sewage Pumping Station

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 /	
	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.	construction phase / upon completion of all	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.	construction activities (Contractor)	Implemented
6.5.1.10	Chemical Wastes		
&	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
6.5.1.12	b) Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately.	Construction and	Implemented
(D6)	 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. 	Operational Phase	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	General Refuse		
& Table	a) General refuse should be stored in enclosed bins or compaction units separate from C&D materials and chemical wastes.		mplemented
6.2 (D7)	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.	All construction sites /	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.	construction phase / upon completion of all	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.	Construction activities (Contractor)	Implemented
	e) The collected general refuse will be disposed of at NENT landfill.		Implemented

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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.

EIA	Environmental Protection Measures (Construction Phase) ⁽¹⁾	Location &	T1
Ref. (No.)	E) Landscape and Visual	(Implementation Agent)	Implementation Status
Table 10.9	CM1 – Preservation of Trees	All construction sites / construction phase /	
(E1)	Trees to be retained in accordance with DEVB TCW No. 4/2020 - Tree Preservation.	upon completion of all construction activities (Contractor)	N/A
Table	CM2 – Compensatory Tree Planting	All construction sites /	
10.9 (E2)	Any trees to be felled under the Project shall be compensated in accordance with DEVB TCW No. 4/2020 - <i>Tree Preservation</i> .	construction phase / upon completion of all construction activities (Contractor)	N/A
Table	CM3 – Control of Night-time Lighting Glare	All construction sites /	
10.9 (E3)	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.	construction phase / upon completion of all construction activities (Contractor)	Implemented
Table	CM4 – Erection of Decorative Screen Hoarding	All construction sites /	
10.9 (E4)	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.	construction phase / upon completion of all construction activities (Contractor)	Implemented
Table	CM5 – Management of Construction Activities and Facilities	All construction sites /	
10.9 (E5)	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.	construction phase / upon completion of all construction activities (Contractor)	Implemented
Table	CM6 – Reinstatement of Temporarily Disturbed Landscape Areas	All construction sites /	
10.9 (E6)	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.	construction phase / upon completion of all construction activities (Contractor)	N/A

Implementation Status of Environmental Mitigation Measures (Construction Phase)

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

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Appendix O

Summary of Outstanding Issues and Deficiencies in the Reporting Month



Summary of Outstanding Issues and Deficiencies in the Reporting Month

Environmental Aspects	Outstanding Issues	Deficiencies
Air Quality	N/A	Any items of deficiencies can be referred to Appendix K .
Noise	N/A	
Water Quality	N/A	
Chemical and Waste Management	N/A	
Landscape and Visual Impact	N/A	
Permit / Licenses	N/A	
Others	N/A	

