

Drainage Services Department

Port Shelter Sewerage, Stage 3 – Sewerage Works at Po Toi O Quarterly EM&A Report (Period from September to November 2022)

Prepared by

SGS Hong Kong Limited

Certified by:

Verified by:

Johnathan Ho

F.C. Tsang

Environmental Team Leader Independent Environmental Checker





Our Ref: PL-202301040

Drainage Services Department Special Duty Division 42/F, Revenue Tower, 5 Gloucester Road, Wan Chai, Hong Kong.

Attention: Ms. Janet YUEN

30 January 2023

Dear Janet,

Port Shelter Sewerage, Stage3 - Sewerage Works at Po Toi O **Quarterly EM&A Report for September to November 2022**

Reference is made to your submission of the Quarterly EM&A Report for December 2022 received by email on 9 January 2023 and the subsequent revision on 12, 28 and 30 January 2023. We are pleased to inform you that we have no adverse comment on the captioned report.

Thank you for your attention. Please do not hesitate to contact the undersigned should you have any queries.

Yours faithfully,

Tour Fauldery

F.C. Tsang

Independent Environmental Checker

ETL – Johnathan HO cc.

Nos. 37-39 Wing Hong Street, Kowloon, Hong Kong | http www.acuityhk.com | www.aurecongroup.com



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Drainage Services Department

SGS Hong Kong Limited

Issue and Revision Record

Revision	Description	Prepared by	Checked by	Approved by	Date
01	Submission	Various	Johnathan Ho	Grace Fung	Jan 2023

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1. EXECUTIVE SUMMARY

- 1.1 This Quarterly Environmental Monitoring & Audit (EM&A) report presents the EM&A works performed in the period between September to November 2022 for "Port Shelter Sewerage, Stage 3 Sewerage works at Po Toi O".
- 1.2 The impact stage EM&A Programme for the Project includes air quality, noise, water quality, waste, ecology, fisheries, landscape and visual and built heritage monitoring. The recommended environmental mitigation measures were implemented on site and regular inspections were carried out to ensure that the environmental conditions are acceptable.
- 1.3 The EM&A programme was carried out by the ET in accordance with the EM&A Manual requirements. It is concluded from the EM&A works that adequate environmental mitigation measures have been implemented by the contractor where appropriate in the reporting quarter.
- 1.4 The construction commencement date of the project was revised on 27 April 2021. The construction commencement date of provision of village sewerage to the unsewered areas of Po Toi O has been revised from 1 March 2021 to 16 June 2021, and the construction commencement date of village sewerage construction of the local sewage treatment plant (STP) has been revised from 10 May 2021 to 16 June 2021. In view of the revised construction commencement date, the EM&A programme was subsequently suspended from 28 April 2021 until 16 June 2021.

Exceedance of Action and Limit Level

1.5 There was no action or limit level exceedance record of construction noise and air quality was recorded in the reporting quarter.

Implementation of Mitigation Measures

1.6 Construction phase weekly site inspections were carried out to confirm the implementation measures undertaken by the Contractor in the reporting quarter. The status of implementation of mitigation measures during the reporting quarter is shown in **Appendix E**.

Record of Complaints

- 1.7 No complaints, notification of summons and successful prosecution was received in the reporting period. No public engagement activity was conducted in the reporting quarter.
- 1.8 No air quality, noise and water complaints during 0700 1900 hours on normal weekdays was received in the reporting quarter.

Record of Notification of Summons and Successful Prosecutions

1.9 No notification of summons and successful prosecution was received in the reporting period. No public engagement activity was conducted in the reporting quarter.



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2. INTRODUCTION

Project Info

- 2.1 Société Générale de Surveillance (SGS) Hong Kong Limited has been appointed by Drainage Services Department (DSD) as the Environmental Team (ET) to undertake the EM&A programme during construction phase of the Project in accordance to the approved EM&A Manual for the proposed sewerage works in Po Toi O (hereafter as "The Project"), an environmental enhancement project that aims to improve environmental hygiene of the Po Toi O area.
- 2.2 The Quarterly EM&A Report is prepared in accordance with the section 13.6 of the EM&A Manual. This Quarterly EM&A Report presents the monitoring works conducted from 1 September 2022 to November 30, 2022. The purpose of this report is to summarize the findings in the EM&A of the project over the reporting quarter.

Project Organization

2.3 The project organization chart, key personnel contact names and numbers and lines of communication with respect to the onsite environmental management perforce is shown in Appendix C.

Environmental Status in the Reporting Quarter

- 2.4 During the reporting quarter, construction works at Po Toi O undertaken include:
 - Major activities in the reporting quarter:
 - 1. Construction of village sewer;
 - 2. Slope works.
 - 3. Construction of temporary working platform
 - Major activities in the upcoming quarter:
 - 1. Construction of village sewer;
 - 2. Slope works.
 - 3. Construction of temporary working platform and installation of silt curtain for HDD
- 2.5 The Construction Works Programme of the Project is provided in **Appendix D**.



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3. SUMMARY OF EM&A MONITORING REQUIREMENTS

3.1 In accordance with the EM&A Manual, environmental parameters including air quality, noise have been monitored in the reporting quarter. The specific parameters, monitoring frequency and the respective Action and Limit levels are given in **Table 3-1**. Locations of the monitoring stations are provided in **Appendix A**.

Table 3-1 Summary of Impact EM&A Requirements

Parameters ²	Descriptions	Locations ¹	Frequencies	Action Level	Limit
					Level
Air Quality	24-hour TSP	AMS1N	At least once every 6	153 μg/m³	260 μg/m³
	24-hour TSP	AMS2N1	days	179 μg/m³	
	24-hour TSP	AMS3N		158 μg/m³	
	24-hour TSP	AMS4N		144 μg/m³	
	1-hour TSP	AMS1N		319 μg/m³	500 μg/m³
	1-hour TSP	AMS2N1		279 μg/m³	
	1-hour TSP	AMS3N		303 µg/m³	
	1-hour TSP	AMS4N		278 μg/m³	
Noise	Leq, 30 minutes	NMS1N	At least once per week	When one documented	75 dB(A)*
	Leq, 30 minutes	NMS2N1		from any one of the	
	Leq, 30 minutes	NMS3N		noise sensitive receivers	
	Leq, 30 minutes	NMS4N			

Notes:

¹⁻ Due to several limitations (i.e. EM&A approved monitoring stations not accessible) identified at the air quality and noise monitoring stations in the Approved EM&A Manual for the Project, the monitoring location AMS1 – AMS4 & NMS1 – NMS4 were replaced by alternative monitoring location AMS1N – AMS4N & NMS1N – NMS4N, which was approved by ER and IEC.

²⁻ Marine construction was not commenced within the reporting quarter; hence impact EM&A requirement for water quality monitoring is not included in this table.



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Environmental Mitigation Measures

3.2 Environmental mitigation measures have been recommended in the EM&A Manual. Summary implementation status of the environmental mitigation measures is provided in **Appendix E**.



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4. SUMMARY OF EM&A MONITORING RESULTS

4.1 In accordance with the EM&A Manual, impact monitoring has been conducted in the reporting quarter. Meteorological data for the reporting quarter have been extracted from Hong Kong Observatory and present in **Appendix F.** Monitoring data with graphical presentation for the reporting quarter are show in **Appendix G.** A summary on the monitoring results is presented in **Table 4.1**.

Table 4-1 Summary of Monitoring Data

Parameter ¹	Monitoring Location	Minimum	Maximum	Average	
	Air Quality				
24-hour TSP	AMS1N	11 μg/m³	60 µg/m³	28 μg/m³	
24-hour TSP	AMS2N1	16 µg/m³	84 μg/m³	58 µg/m³	
24-hour TSP	AMS3N	16 µg/m³	57 μg/m³	46 µg/m³	
24-hour TSP	AMS4N	13 µg/m³	49 µg/m³	32 µg/m³	
1-hour TSP	AMS1N	9 μg/m³	64 μg/m³	26 μg/m³	
1-hour TSP	AMS2N1	34 µg/m³	86 µg/m³	57 μg/m³	
1-hour TSP	AMS3N	26 µg/m³	60 µg/m³	43 µg/m³	
1-hour TSP	AMS4N	. 5 15 µg/m³	. σ 58 μg/m³	. с 34 µg/m³	
		Construction Noise			
Leq(30min)	NMS1N	39.6 dB(A)	67.8 dB(A)	60.2 dB(A)	
Leq(30min)	NMS2N1	54.8 dB(A)	72.9 dB(A)	64.3 dB(A)	
Leq(30min)	NMS3N	39.2 dB(A)	71.0 dB(A)	58.1 dB(A)	
Leq(30min)	NMS4N	41.5 dB(A)	62.3 dB(A)	52.3 dB(A)	

Remarks

^{1.} Marine construction was not commenced within the reporting quarter; hence no water quality monitoring data summarized in this table.

^{2.} A correction of +3 dB(A) was made to the free field measurements



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Other Influencing Factors of the Monitoring Results

Air quality monitoring

4.2 Major emission sources during air quality monitoring in the reporting quarter were mainly vehicle emission from Po Toi O Chuen Road and nearby residents' activities.

Noise monitoring

4.3 Major noise sources during noise monitoring in the reporting quarter were mainly road traffic noise.



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Monitoring Exceedances

4.4 Summary of the exceedances in the reporting quarter is tabulated in **Table 4.2**.

Monitoring Station	Monitoring Station Parameter ¹ No. of Exceedance		Action Taken	
		Action Level	Limit Level	
		Air Quality		
AMS1N	24-hour TSP	0	0	N/A
AMS2N1	24-hour TSP	0	0	N/A
AMS3N	24-hour TSP	0	0	N/A
AMS4N	24-hour TSP	0	0	N/A
AMS1N	1-hour TSP	0	0	N/A
AMS2N1	1-hour TSP	0	0	N/A
AMS3N	1-hour TSP	0	0	N/A
AMS4N	1-hour TSP	0	0	N/A
		Construction Noise		
NMS1N	Leq(30min)	0	0	N/A
NMS2N1	Leq(30min)	0	0	N/A
NMS3N	Leq(30min)	0	0	N/A
NMS4N	Leq(30min)	0	0	N/A

Remarks:

1. Marine construction was not commenced in the reporting quarter, no water quality monitoring was required in according to approved EM&A manual; hence no water quality monitoring data was recorded.



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1-hour TSP Monitoring

4.5 All 1-hour TSP monitoring was conducted as scheduled in the reporting quarter. No action/ limit level exceedance was recorded.

24-hour TSP Monitoring

4.6 All 24-hour TSP monitoring was conducted as scheduled in the reporting quarter. No action/ limit level exceedance was recorded.

Construction Noise Monitoring

4.7 All construction noise monitoring was conducted as scheduled in the reporting quarter. No action/ limit level exceedance was recorded.



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5. WASTE MANAGEMENT

- 5.1 As advised by the Contractor, 100 m³ of inert C&D material was generated and disposal to Tseung Kwan O Area 137 Fill Bank (TKO137FB) in the reporting quarter. For C&D wastes, 2 m³ of general refuse was disposed of at NENT landfill, 0 kg waste were collected by recycling contractors, and 0 kg of chemical wastes was collected by licensed Contractors in the reporting quarter.
- 5.2 The detailed summary of waste flow is show in **Appendix H**.



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6. ENVIRONMENTAL NON-CONFORMANCE

- 6.1 For this reporting quarter, no environmental complaint was received.
- 6.2 No non-compliance and environmental related prosecution or notification of summons was received. There was no breach of Action or Limit Levels for Air Quality and Noise monitoring in the reporting quarter.
- 6.3 Statistics on complaints, notifications of summons, successful prosecutions and public engagement activities are summarized in **Appendix I**.



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7. COMMENTS, RECOMMENDATIONS AND CONCLUSION

Comments

7.1 Based on the observations made during site audits and construction dust and noise monitoring results, no non-compliances and exceedances of air quality and noise limits were recorded.

Recommendations

7.2 Reviewing the implementation of the recommended mitigation measures in the EM&A Manual, it was observed that they were effective and efficient in controlling the potential impacts due to construction of the project during the reporting quarterly. Review of the effectiveness and efficiency of the EM&A programme will continue, and recommendations will be provided to remediate any potential impacts due to the project and to improve the EM&A programme if deficiencies of the existing EM&A programme are identified.

Conclusion

- 7.3 The EM&A programme as recommended in the EM&A Manual has been undertaken since the construction works of Port Shelter Sewerage, Stage 3 Sewerage works at Po Toi O works commenced on 1 March 2021.
- 7.4 Monitoring of air quality and noise with respect to the Project is underway. In particular, the 1-hour TSP, 24-hour TSP and noise level (as Leq, 30 minutes) under monitoring have been checked against established Action and Limit levels. There was no breach of Action and Limit Levels for 1-hour TSP, 24-hour TSP and noise monitoring in the reporting quarter.
- 7.5 No complaint was received during the reporting quarter.
- 7.6 No notifications of summons or successful prosecution were received during the reporting quarter.

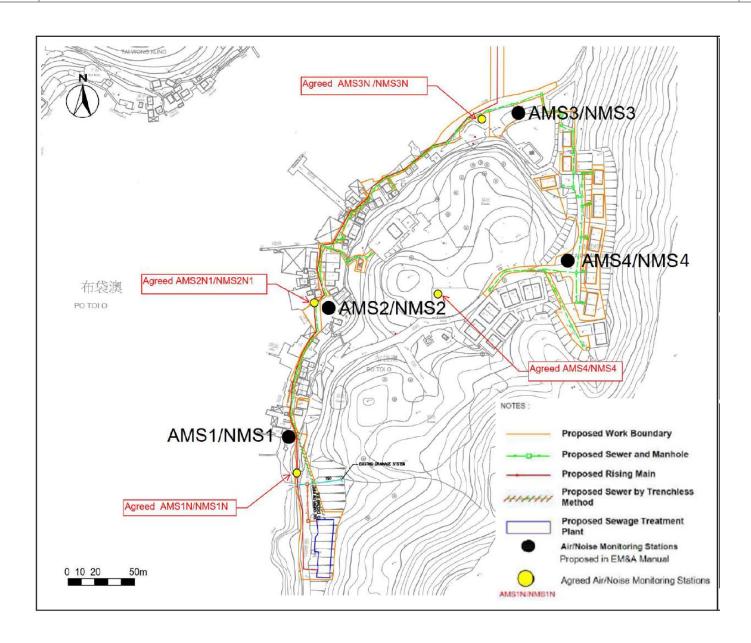


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APPENDIX A - LOCATION OF THE MONITORINGAND CONTROL STATIONS



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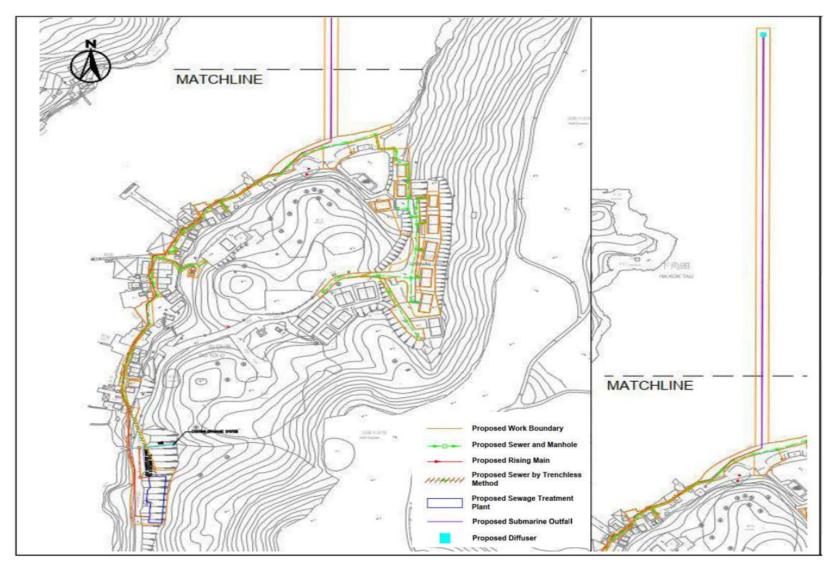
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APPENDIX B - LAYOUT PLAN OF PROJECT AREA



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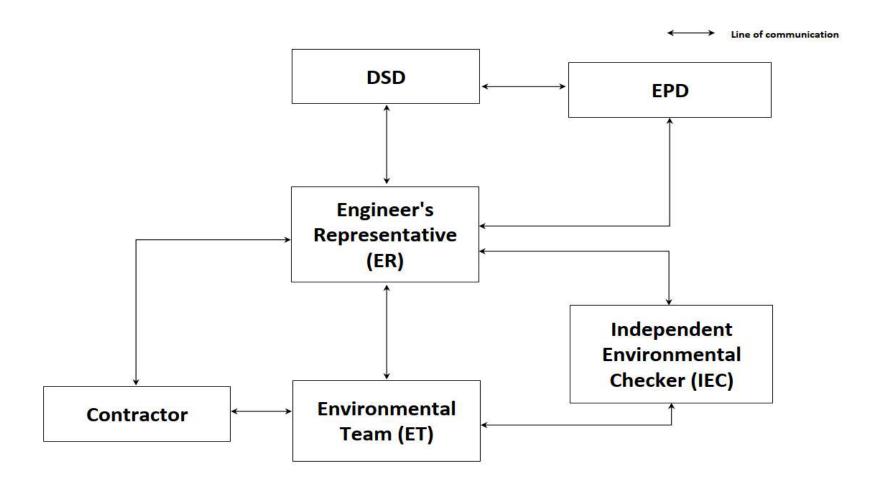


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APPENDIX C - PROJECT ORGANIZATION CHART & CONTACT INFORMATION OF KEY PERSONNEL



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Position	Party	Name	Telephone
Project Proponent	Drainage Services Department (DSD)	Ms. Janet Yuen	2594 7353
Senior Resident Engineer (SRE)	Binnies Hong Kong Limited (Binnies)	Mr. Eugene Chan	6392 3809
Independent Environmental Checker (IEC)	Acuity Sustainability Consulting Limited (ASC)	Dr. F.C. Tsang	2698 8060
Environmental Team (ET)	Société Générale de Surveillance (SGS) Hong Kong Limited	Mr. Roy Hung	2204 8305
Environmental Officer	China Geo-engineering Corporation (CGC)	Mr. Jasper Tang	6997 5530
Hotline Telephone Number			6902 2820



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APPENDIX D - CONSTRUCTION WORK PROGRAMME



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APPENDIX E - IMPLETEMENTATION OF RECOMMENDED MITGATION MEASURES



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Item	EM & A	EM&A Manual Recommended		Implementation Status	
	Ref.	Mitigation/ Actions	September 2022	October 2022	November 2022
Air Quality	A10	Good housekeeping to minimize dust generation, e.g. by properly handling and storing dusty materials.	✓	✓	√
Impact	A11	Adopt dust control measures, such as dust suppression using water spray on exposed soil at least 4 times a day, in areas with dusty construction activities and during material handling.	Rem.	Rem.	√
	A12	Store cement bags in shelter with 3 sides and the top covered by impervious materials if the stack exceeds 20 bags.	N/A	N/A	N/A
	A13	Maintain a reasonable height when dropping excavated materials to limit dust generation.	N/A	N/A	N/A
	A14	Limit vehicle speed within construction site and in Po Toi O to 10km/hr and confine vehicle movement in haul road.	✓	✓	√
	A15	Minimize exposed earth after completion of work in a certain area by hydroseeding, vegetating, soil compacting or covering with bitumen.	√	√	√
	A16	Provide wheel washing at construction site exit to clean the vehicle body and wheel.	✓	✓	√



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Item	EM & A	EM & A EM&A Manual Recommended	Implementation Status		
	Ref.	Mitigation/ Actions	September 2022	October 2022	November 2022
Air	A17	Cover materials on trucks before leaving the construction	✓	✓	✓
Quality		site to prevent debris from dropping during traffic movement			
Impact		or being blown away by wind			
	A18	Regular maintenance of plant equipment to prevent black	✓	Obs.	✓
		smoke Emission.			
	A19	Throttle down or switch off unused machines or machine in	✓	✓	✓
		intermittent use			
	A20	Minimize excavation area as far as possible.	✓	✓	✓
	A21	Store odorous excavated materials in covered containers	✓	✓	✓
		and remove off-site as soon as possible within 24 hours.			
	A22	Cover open stockpiles of construction materials (e.g.	Obs.	✓	✓
		aggregates, sand and fill materials) with impermeable			
		materials such as tarpaulin during rainstorms.			
	A23	Hoarding of not less than 2.4 m high shall be erected from	N/A	N/A	N/A
		ground level to surround the construction site for sewage			
		treatment plant along Po Toi O Chuen Road except for a			
		construction site entrance or exit.			
	A24	Carry out air quality monitoring throughout the construction	✓	✓	✓
		period			



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Item	EM & A EM&A Manual Recommended	Implementation Status			
	Ref.	Mitigation/ Actions	September 2022	October 2022	November 2022
Noise	N1	Use hand-held plant equipment or manual equipment within	✓	✓	✓
Impact		village area.			
	N2	For HDD, enclose the stationary plant equipment on three	N/A	N/A	N/A
		sides with cover. Only the side facing the sea shall be			
		opened for heat exhaustion.			
	N3	Generator should be placed at a fixed location at least 5-	✓	✓	✓
		6m away from the NSRs and screened by noise barrier			
		whenever excavation work must be carried out at their front			
		doors.			
	N4	Avoid carrying out noisy activities at the same time. The	✓	✓	✓
		work front of village sewer installation near NSRs PTO_N1			
		and PTO_N3 shall not be conducted concurrently with			
		installation of Po Toi O Chuen Road sewer and horizontal			
		directional drilling respectively.			
	N5	Vibratory poker shall only be operated 4m away from NSR	✓	✓	✓
		and with noise barrier properly erected. Surfacing work			
		within 4m from NSR shall be carried out by manual method.			
	N6	Schedule noisy activities to minimize exposure of nearby	✓	✓	✓
		NSRs to high levels of construction noise.			



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Item	EM & A	EM & A EM&A Manual Recommended	Implementation Status		
	Ref.	Mitigation/ Actions	September 2022	October 2022	November 2022
Noise	N7	Use Quality Powered Mechanical Equipment (QPME)	✓	✓	✓
Impact		which produces lower noise level.			
	N8	Erect 3m high mobile barriers with skid footing and a small	✓	✓	✓
		cantilevered upper portion within a few meters of stationary			
		plants and within about 5m of more mobile plant.			
	N9	Hand-held breaker shall be fitted with mufflers. A movable	✓	✓	✓
		enclosure made up of plywood is proposed to surround both			
		worker and breaker during breaking process. The internal			
		wall of the enclosure should be laid with sound absorbent			
		such as mineral wool.			
	N10	Regular maintenance of plant equipment to prevent noise	✓	✓	✓
		emission due to impair.			
	N11	Position mobile noisy equipment in location and direction	✓	✓	✓
		away from NSR.			
	N12	Use silencer or muffler on plant equipment and should be	✓	✓	✓
		properly maintained.			
	N13	Throttle down or switch off unused machines or machine in	✓	✓	✓
		intermittent use between work.			
	N14	Make good use of stockpiles or other structures for noise	✓	✓	✓
		screening.			



Item	tem EM & A EM&A Manual Recommended			Implementation Status		
	Ref.	Mitigation/ Actions	September 2022	October 2022	November 2022	
Noise	N15	Mobile plant should be sited as far away from NSRs as	✓	✓	✓	
Impact		possible				
	N16	Reduce the percentage on-time for some noisy PMEs	✓	✓	✓	
	N17	Carry out noise monitoring	✓	✓	✓	



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	Ref.	Mitigation/ Actions	September 2022	October 2022	November 2022
Water	W1	Divert the water from outfall of W3 (stream near Fairway	✓	✓	√
Quality		Vista) during open cut excavation for laying of gravity sewer			
Impact		nearby.			
	W2	Place sandbag along the upstream section of the stream	✓	✓	✓
		near Fairway Vista and along rocky shore during open cut			
		excavation for laying of gravity sewers/rising mains nearby.			
	W3	Intercept the water from u-channel at the foot of the slope	✓	✓	✓
		where the STP will be built.			
	W4	Install cofferdam around the proposed excavation area for	N/A	N/A	N/A
		entry pit of HDD work to prevent falling of debris into the			
		sea			
	W5	Install sheet piles in marine waters by vibratory action.	N/A	N/A	N/A
	W6	Marine works (dredging, construction and installation works	N/A	N/A	N/A
		at diffuser location, backfilling) shall be carried out inside			
		the watertight cofferdam. The cofferdam can only be			
		removed after completion of work.			
	W7	Dredging should be carried out by grab dredgers anchored	N/A	N/A	N/A
		outside the cofferdam. The marine sediment should be			
		placed in sealed compartment of the marine barge.			
	W8	Water removed from the cofferdam should be desilted	N/A	N/A	N/A
		before discharge back into the sea.			



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ltem	EM & A	EM&A Manual Recommended	Implementation Status		
	Ref.	Mitigation/ Actions	September 2022	October 2022	November 2022
Water	W9	Carry out water quality monitoring at water sensitive	N/A	N/A	N/A
Quality		receivers before and during cofferdam installation works,			
Impact		throughout dredging works, and during cofferdam			
		extraction works.			
	W12	Set up sedimentation tank for settling suspended solids in	Obs.	✓	Obs.
		wastewater before discharge into storm drains. Sand/silt			
		removal facilities such as sand traps, silt traps and			
		sedimentation basin should be provided with adequate			
		capacity.			
	W13	Follow ProPECC PN 1/94 "Construction Site Drainage" as	✓	✓	✓
		far as practicable			
	W14	Construct catchpits and perimeter channels prior to	✓	✓	✓
		commencement of site formation works and earthworks			
	W15	Maintain silt removal facilities, channels, manholes before	Obs.	Obs.	✓
		and after rainstorm.			
	W16	Remove silt and grit from silt trap at regular interval.	Obs.	Obs.	Obs.
	W17	Well design works program to minimize the work areas to	✓	✓	✓
		minimize the soil exposure and site runoff.			



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	Ref.	Mitigation/ Actions	September 2022	October 2022	November 2022
Water	W18	Arrange soil excavation works outside rainy seasons	✓	✓	✓
Quality		(April to September) as far as possible. If this cannot			
Impact		be achieved, the following measures should be			
		implemented:			
		Cover temporary exposed slope surfaces with	✓	✓	√
		impermeable materials, e.g. tarpaulin.			
		Protect temporary access roads by crushed stone or	✓	✓	✓
		gravel.			
		Provide intercepting channels along crest/edge of	✓	✓	✓
		excavation.			
	W19	Minimize exposed earth after completion of work in a	✓	✓	✓
		certain area by hydroseeding, vegetating, soil			
		compacting or covering with bitumen.			
	W20	Prevent rainwater from entering trenches. Excavation	✓	✓	✓
		of trenches should be dug and backfilled in short			
		sections during rainy seasons. Remove silt in			
		rainwater collected from the trenches or foundation			
		excavations prior to discharge to storm drains.			



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Item	EM & A	EM&A Manual Recommended	Implementation Status		
	Ref.	Mitigation/ Actions	September 2022	October 2022	November 2022
Water	W21	Cover open stockpiles of construction materials (e.g.	✓	✓	√
Quality		aggregates, sand and fill materials) with impermeable			
Impact		materials such as tarpaulin during rainstorms.			
	W22	Cover and temporary seal manholes to prevent silt,	✓	✓	√
		construction materials or debris and surface runoff			
		from entering foul sewers.			
	W23	Remove waste from the construction site regularly.	Obs.	Obs.	✓
	W24	Apply discharge license for effluent discharge. Treat	✓	✓	✓
		the discharge to comply with the requirement in TM-			
		DSS.			
	W25	Reuse treated effluent onsite, e.g. dust suppression,	✓	✓	✓
		wheel washing and general cleaning.			
	W26	Monitor effluent water quality.	√	✓	✓
	W27	Register as chemical waste producer if chemical	✓	✓	✓
		waste will be generated.			
	W28	Perform maintenance of vehicles and equipment that	✓	✓	✓
		have oil leakage and spillage potential on hard			
		standings within a bunded area with sumps and oil			
		interceptors.			



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Ref.	Mitigation/ Actions	September 2022	October 2022	November 2022
W29	Dispose chemical waste in accordance to Waste Disposal	✓	✓	✓
	Ordinance. Follow the Code of Practice on the Packaging,			
	Labelling and Storage of Chemical Wastes, examples as			
	follows:			
	Store chemical wastes with suitable containers to avoid	✓	✓	✓
	leakage or spillage during storage, handling and transport.			
	Label chemical waste containers according to the CoP to	✓	✓	✓
	notify and warn the waste handlers.			
	Store chemical wastes at designated safe location with	✓	✓	✓
	adequate space.			
W30	Provide sufficient chemical toilets with regular maintenance	✓	✓	✓
	by registered waste collector where necessary.			
W31	Provide a drip tray/container underneath the bentonite	N/A	N/A	N/A
	recycling system.			
W32	Carry out regular site inspection to audit the implementation	Obs.	✓	✓
	of mitigation measures.			
W33	Carry out effluent quality monitoring at location specified in	✓	✓	✓
	the discharge license.			
	W29 W30 W31 W32	W29 Dispose chemical waste in accordance to Waste Disposal Ordinance. Follow the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes, examples as follows: Store chemical wastes with suitable containers to avoid leakage or spillage during storage, handling and transport. Label chemical waste containers according to the CoP to notify and warn the waste handlers. Store chemical wastes at designated safe location with adequate space. W30 Provide sufficient chemical toilets with regular maintenance by registered waste collector where necessary. W31 Provide a drip tray/container underneath the bentonite recycling system. W32 Carry out regular site inspection to audit the implementation of mitigation measures. W33 Carry out effluent quality monitoring at location specified in	Ref. Mitigation/ Actions September 2022 W29 Dispose chemical waste in accordance to Waste Disposal Ordinance. Follow the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes, examples as follows: ✓ Store chemical wastes with suitable containers to avoid leakage or spillage during storage, handling and transport. ✓ Label chemical waste containers according to the CoP to notify and warn the waste handlers. ✓ Store chemical wastes at designated safe location with adequate space. ✓ W30 Provide sufficient chemical toilets with regular maintenance by registered waste collector where necessary. ✓ W31 Provide a drip tray/container underneath the bentonite recycling system. N/A W32 Carry out regular site inspection to audit the implementation of mitigation measures. Obs. W33 Carry out effluent quality monitoring at location specified in ✓	Ref. Mitigation/ Actions September 2022 October 2022 W29 Dispose chemical waste in accordance to Waste Disposal Ordinance. Follow the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes, examples as follows: Store chemical wastes with suitable containers to avoid leakage or spillage during storage, handling and transport. Label chemical waste containers according to the CoP to notify and warn the waste handlers. Store chemical wastes at designated safe location with adequate space. W30 Provide sufficient chemical toilets with regular maintenance by registered waste collector where necessary. W31 Provide a drip tray/container underneath the bentonite recycling system. W32 Carry out regular site inspection to audit the implementation of mitigation measures. W33 Carry out effluent quality monitoring at location specified in



Item	EM & A	& A EM&A Manual Recommended	Implementation Status			
	Ref.	Mitigation/ Actions	September 2022	October 2022	November 2022	
Waste/Chemical	WM4	Allocate an area for waste sorting and storage of	✓	✓	✓	
Management		C&D materials into the following categories for				
		reuse, recycle or disposal if possible. Remove				
		waste from the construction site for sorting once				
		generated if no suitable space can be identified.				
		Excavated materials suitable for reuse	✓	✓	✓	
		Inert C&D materials (or public fill) for disposal	✓	✓	✓	
		offsite				
		Non-inert C&D materials (or C&D waste) for	✓	✓	✓	
		disposal at landfills				
		Records of quantities generated/ recycled/	✓	✓	✓	
		disposed maintained?				
		Chemical waste	✓	✓	✓	
		Bentonite slurry for reconditioning and reuse	N/A	N/A	N/A	
		General refuse	✓	✓	✓	



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	Ref.	Mitigation/ Actions	September 2022	October 2022	November 2022	
Waste/Chemical	WM5	Adopt good site practice as follows:	√	✓	✓	
Management		Provide training to workers on site cleanliness, waste management (waste reduction, reuse and recycle) and chemical handling procedures.	√	√	✓	
		Cover waste materials with tarpaulin or in enclosure during transportation.	✓	√	~	
		Maintain drainage systems, sumps and oil interceptors.	√	√	✓	
		Sort out chemical waste for proper handling and treatment onsite or offsite.	√	~	√	



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	Ref.	Mitigation/ Actions	September 2022	October 2022	November 2022	
Waste/Chemical	WM6	Adopt good site practice as follows:	✓	✓	✓	
Management		Allocate area/containers for sorting, recovering	✓	✓	✓	
		and storing waste for reuse, recycle or disposal				
		(e.g. demolition debris and excavated materials,				
		general refuse like aluminum cans.) Remove				
		waste from the construction site for sorting once				
		generated if no suitable space can be identified.				
		Allocate area for proper storage of construction	✓	✓	✓	
		materials to prevent contamination prevent soil				
		contamination?				
		Maintain drainage systems, sumps and oil	✓	✓	✓	
		interceptors.				
		Minimize wastage through careful planning and	✓	✓	√	
		avoiding over purchase of construction materials				



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	Ref.	Mitigation/ Actions	September 2022	October 2022	November 2022	
Waste/Chemical	WM7	Prepare and implement a site-specific Waste	✓	✓	√	
Management		Management Plan (WMP) as part of Environmental				
		Management Plan (EMP) in accordance with ETWB				
		TCW No. 19/2005. Detail waste management method				
		in the form of avoidance, reuse, recovery, recycling,				
		storage, collection, treatment and disposal according to				
		the recommendations on the EIA and EM&A Manual. It				
		should be approved by the ER and regularly reviewed.				
	WM8	Store waste materials properly as follows:	✓	✓	✓	
		Avoid contamination by proper handling and storing	✓	✓	√	
		waste.				
		Prevent erosion by covering waste.	✓	✓	✓	
		Apply water spray on excavated materials.	✓	✓	✓	
		Maintain and clean storage area regularly.	✓	✓	✓	
		Sort and stockpile different materials at designated	✓	✓	✓	
		location to enhance reuse.				



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Item	EM & A	& A EM&A Manual Recommended	Implementation Status			
	Ref.	Mitigation/ Actions	September 2022	October 2022	November 2022	
Waste/Chemical	WM9	Apply for relevant waste disposal permits in accordance	✓	✓	✓	
Management		with the Waste Disposal Ordinance (Cap. 354), Waste				
		Disposal (Charges for Disposal of Construction Waste)				
		Regulation (Cap. 345) and the Land (Miscellaneous				
		Provisions) Ordinance (Cap.28) Dumping at Sea				
		Ordinance (Cap. 466).				
	WM10	Hire licensed waste disposal contractors for waste	✓	✓	√	
		collection and removal. Dispose waste at licensed				
		waste disposal facilities				
	WM11	Implement trip-ticket system for recording the amount of	✓	✓	√	
		waste generated, recycled and disposed, including				
		chemical wastes				
	WM12	Provide wheel washing at construction site exit to clean	✓	✓	√	
		the vehicle body and wheel.				
	WM13	Reduce water content in wet spoil generated from piling	✓	✓	√	
		work by mixing with dry materials. Only dispose treated				
		spoil with less than 25% dry density to Public Fill				
		Reception				
		Facilities				



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Item	EM & A	M & A EM&A Manual Recommended	Implementation Status			
	Ref.	Mitigation/ Actions	September 2022	October 2022	November 2022	
Waste/Chemical	WM14	Dispose dry waste or waste with less than 70%	✓	✓	✓	
Management		water content by weight to landfill.				
	WM15	Follow the Code of Practice on the Packaging,	√	✓	✓	
		Labelling and Storage of Chemical Waste as				
		follows:				
		Store chemical wastes with suitable containers.	✓	✓	✓	
		Seal and maintain the container to avoid leakage				
		or spillage during storage, handling and transport.				
		Label chemical waste containers in both English	✓	✓	✓	
		and Chinese with instructions in accordance to				
		Schedule 2 of the Waste Disposal (Chemical				
		Waste) (General) Regulation.				
		The container capacity should be smaller than 450	✓	✓	√	
		litres unless agreed by the EPD.				



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Item	EM & A	A EM&A Manual Recommended	Implementation Status			
	Ref.	Mitigation/ Actions	September 2022	October 2022	November 2022	
Waste/Chemical	WM16	Comply with the requirement of the chemical storage area:	✓	✓	✓	
Management		Store only chemical waste and label clearly the chemical characters of the waste.	√	√	✓	
		Have at least 3 sides enclosed and protected from rainfall with cover.	√	√	✓	
		Provide sufficient ventilation	✓	✓	✓	
		Have impermeable floor and has bunds to contain 110% of the capacity of the largest container or 20% of the total volume of the stored waste in the area, whichever is larger		✓	√	
	WM17	Transfer used lubricants, waste oils and other chemicals to oil recycling companies, if possible, and empty oil drums for reuse or refill. No direct or indirect discharge is permitted	✓	✓	√	
_	WM18	Hire licensed chemical waste disposal contractors for waste collection and removal. Dispose chemical waste at the approved Chemical Waste Treatment Centre at Tsing Yi or other licensed facility.	√	✓	√	
	WM19	Hire reputable waste collector to separately collect and dispose general refuse from other wastes. Cover the waste to prevent being blown away.	√	✓	V	



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Item	EM & A	EM&A Manual Recommended	Implementation Status			
	Ref.	Mitigation/ Actions	September 2022	October 2022	November 2022	
Waste/Chemical	WM20	Provide recycling bins for sorting out recyclables for	✓	✓	√	
Management		collection by recycling companies. Non-recyclables				
		should be removed to designated landfills every day by				
		licensed collectors to prevent environmental and health				
		nuisance.				
	WM21	Organize training and reminders to site staff on waste	✓	✓	✓	
		minimization through avoidance and reduction, reusing				
		and recycling.				
	WM22	Used bentonite shall be reconditioned onsite and	N/A	N/A	N/A	
		reused as far as practical to minimize wastage. If this is				
		deemed not viable, the used bentonite shall be				
		delivered offsite for reconditioning.				
	WM23	Characterize the sediment quality of the marine	N/A	N/A	N/A	
		sediment to be dredged and submit a Sediment Quality				
		Report for EPD's approval. Dispose the dredged marine				
		sediment in accordance with ETWB TC(W) No.				
		34/2002.				



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Item	EM & A	M & A EM&A Manual Recommended	Implementation Status			
	Ref.	Mitigation/ Actions	September 2022	October 2022	November 2022	
Ecology	E1	Erect bright colour fencing along the boundary of the	✓	✓	✓	
		undisturbed region of the shrubland and woodland, and				
		around Diospyros vaccinioides, a plant species of				
		conservation importance, near the work boundary to				
		remind workers not to trespass or occupy the area, and				
		to be careful during operation of equipment.				
	E2	Reinstate the disturbed rocky shore with the rocks	N/A	N/A	N/A	
		temporarily removed.				
	E3	Place sandbag around the section of W3 next to	✓	✓	✓	
		Fairway Vista and along the shore during open cut				
		excavation for laying of gravity sewer nearby.				
	E4	Temporarily divert the water from outfall of W3 away	✓	✓	✓	
		from excavation area.				
	E5	Inspect the condition of the Diospyros vaccinioides near	✓	✓	✓	
		the work boundary as part of weekly site audit.				
	E6	Erection of hoarding, fencing or provision of clear	✓	✓	✓	
		demarcation of work zones				



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	Ref.	Mitigation/ Actions	September 2022	October 2022	November 2022	
Ecology	E7	Designate areas for placement of equipment, building materials and wastes away from the natural environment.	√	✓	✓	
	E8	Carry out tree preservation and compensatory tree planting will be carried out in accordance with DEVB TCW No. 7/2015.	√	✓	√	



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Item	EM & A	EM&A Manual Recommended	Implementation Status				
	Ref.	Mitigation/ Actions	September 2022	October 2022	November 2022		
Landscape	CM8	Protective materials to be provided to natural rocky coastline	N/A	N/A	N/A		
and Visual		to prevent damage to existing landform from plant and					
		machinery during temporary drilling operations.					
		Reinstatement following removal of plant & equipment to					
		original or improved condition shall be undertaken.					
	OM2	Use of appropriate building materials and colours for Sewage Treatment Plant to complement surroundings	N/A	N/A	N/A		
	CM1	The construction area and contractor's temporary works areas	✓	✓	√		
		should be minimized to avoid impacts on adjacent landscape.					
		All slope excavation shall take place from within the work					
		boundary to minimize impacts on adjacent slopes.					
	CM2	Reduction of construction period to practical minimum.	✓	✓	✓		
	CM3	Construction traffic (land and sea) including construction plant,	✓	✓	√		
		construction vessels and barges to be kept to a practical					
		minimum.					
	CM4	Erection of decorative mesh screens or construction	Rem.	✓	✓		
		hoardings and/or temporary noise barriers around works					
		areas in visually unobtrusive colors.					
	CM5	Avoidance of excessive height and bulk of site buildings and	✓	✓	√		
		structures.					



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Landscape	CM6	Protective materials to be provided to natural rocky coastline	✓	√	√
and Visual		to prevent damage to existing landform from plant and			
		machinery during temporary drilling operations.			
		Reinstatement following removal of plant & equipment to			
		original or improved condition shall be undertaken.			
	CM7	All existing trees shall be carefully protected during	✓	✓	√
		construction. A Detailed Tree Protection Specification shall			
		be provided in the Contract Specification. Under this			
		specification, the Contractor shall be required to submit, for			
		approval, a detailed working method statement for the			
		protection of trees prior to undertaking any works adjacent to			
		all retained trees, including trees in contractor's works areas.			
		Tree risk assessment shall be undertaken to all existing trees			
		within the project site as per "Guidelines for Tree Risk			
		Assessment and Management Arrangement"			
	OM3	Lighting units to be directional and minimize unnecessary light	N/A	N/A	N/A
		spill and glare.			
	OM4	Greening measures to reinstate the landscape which are	N/A	N/A	N/A
		appropriate to the context, including tree and shrub planting			
		and vertical greening, shall be implemented.			



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	Ref.	Mitigation/ Actions	September 2022	October 2022	November 2022		
Building	BH1	Undertake condition survey by professional qualified building	✓	✓	✓		
Heritage		surveyor or engineer to record the existing condition of the					
		built heritage resources.					
	BH2	Carry out vibration and settlement monitoring to built heritage	✓	✓	✓		
		resources. A maximum vibration level 7.5mm/s shall be					
		adopted for the Grade 3 Hung Shing Temple and settlement					
		check points in the Alert/Alarm/Action limit levels at					
		6mm/8mm/10mm shall be adopted.					
	BH3	Are protective covering or protective screen provided to built	N/A	N/A	N/A		
		heritage resources which are close to building area? (c.f. BH3)					
	BH4	Maintain public access to the cultural landscape features (c.f.	N/A	N/A	N/A		
		BH4)					
	BH5	Provision of at least 1m buffer zone from the proposed works	N/A	N/A	N/A		
		provided? (c.f. BH5)					

Remark
N/A – Not Applicable
✓ – Implemented
Obs. – Observed

Rem. – Reminder



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APPENDIX F - METEOROLOGICAL DATA EXTRACTED FROM HONG KONG OBSERVATORY



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2022/09 Daily Extract of Meteorological Observations from HKO

2022/09 Da	2022/09 Daily Extract of Meteorological Observations from HKO Hong Kong Observatory										land^
Day	Mean Pressure (hPa)	Air 1 Absolute Daily Max (deg. C)	empera Mean (deg. C)	Absolute Daily Min (deg. C)	Mean Dew Point (deg. C)	Mean Relative Humidity (%)	Mean Amount of Cloud (%)	Total Rainfall (mm)	Total Bright Sunshine (hours)	Prevailing Wind Direction (degrees)	Mean Wind Speed (km/h)
01	1007.9	32.9	29.4	26.9	25.0	78	71	2.8	7.2	340	9.5
02	1005.9	32.3	29.5	27.3	21.6	63	78	0.0	8.0	360	24.8
03	1002.8	33.9	30.0	26.9	19.5	54	30	0.0	11.1	350	18.3
04	1002.9	34.7	30.8	27.7	20.6	55	26	0.0	11.0	360	13.7
05	1004.4	35.3	31.1	28.8	20.1	52	38	0.0	10.2	360	11.7
06	1008.2	34.5	30.8	28.4	22.3	61	51	0.0	8.9	080	11.0
07	1013.3	29.6	28.4	26.7	24.7	81	86	8.6	0.5	070	35.5
08	1014.2	32.8	29.5	27.8	23.3	70	66	Trace	10.3	080	22.8
09	1013.1	33.3	29.6	27.5	19.4	55	44	0.0	11.0	100	10.6
10	1011.4	31.4	28.9	27.6	24.2	76	59	Trace	4.7	070	11.0
11	1009.1	32.1	29.4	27.4	25.0	78	43	0.0	8.6	240	13.2
12	1007.4	33.7	30.8	28.2	23.1	66	23	0.0	10.3	260	10.3
13	1007.3	35.9	31.7	28.8	21.2	56	5	0.0	11.0	250	12.8
14	1007.0	35.5	31.7	29.6	18.6	46	16	0.0	10.5	280	18.1
15	1005.9	34.5	31.3	28.7	19.9	52	10	0.0	11.0	350	9.4
16	1005.1	33.8	30.8	28.6	22.9	63	36	Trace	8.9	250	7.9
17	1006.0	33.9	31.1	29.1	24.4	69	23	Trace	10.5	240	12.1
18	1005.7	34.0	30.1	27.4	25.4	77	53	20.3	6.9	250	21.2
19	1005.9	32.3	28.8	25.9	24.4	77	79	3.3	5.7	250	13.8
20	1008.2	30.7	28.9	26.2	24.8	79	78	3.5	3.1	080	26.6
21	1010.7	30.4	28.1	25.8	22.6	72	71	8.5	9.8	090	35.3
22	1011.1	31.2	28.5	26.9	23.2	73	52	0.0	9.5	080	24.8
23	1010.8	32.1	28.5	25.6	24.0	77	53	13.4	5.7	090	16.0
24	1011.2	31.0	28.3	25.8	22.5	71	75	0.0	9.3	080	35.7
25	1010.4	32.7	28.8	26.9	22.8	71	39	0.0	9.6	080	22.9
26	1009.1	33.7	29.4	27.2	23.2	70	62	0.0	10.4	070	30.8
27	1007.7	32.3	29.2	28.1	23.6	72	86	Trace	4.0	070	49.7
28	1008.0	31.2	28.8	27.7	23.5	73	81	0.0	6.7	080	49.1
29	1010.1	29.7	28.0	25.0	24.4	81	84	8.1	2.9	080	38.6
30	1012.3	28.3	26.4	24.8	24.8	91	88	102.7	0.1	090	28.8
Mean/Total	1008.4	32.7	29.6	27.3	22.8	69	54	171.2	237.4	080	21.5
Climatological Normal?	1008.8	30.5	27.9	26.1	23.6	78	66	321.4	174.4	080	21.4

[^] Information of wind direction and wind speed for Waglan Island are based on automatic weather station data since August 1989

Trace means rainfall less than 0.05 mm

? 1991-2020 Climatological Normal, unless otherwise specified

Source: Daily Extract | Hong Kong Observatory(HKO) | Climate Information Service



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2022/10 Daily Extract of Meteorological Observations from HKO

	Hong Kong Observatory									Waglan Is	land^
Day	Mean Pressure	Absolute	Tempera Mean	ture Absolute Daily Min	Mean Dew Point	Mean Relative Humidity	Mean Amount of Cloud	Total Rainfall	Total Bright Sunshine	Prevailing Wind Direction	Mean Wind Speed
	(hPa)	Daily Max (deg. C)	(deg. C)	(deg. C)	(deg. C)	(%)	(%)	(mm)	(hours)	(degrees)	(km/h)
01	1012.9	30.5	27.7	25.7	25.1	86	85	2.6	3.8	***	***
02	1012.9	31.9	28.9	27.7	25.4	81	77	Trace	4.9	***	***
03	1013.5	33.0	29.5	27.5	24.6	76	33	0.0	10.8	***	***
04	1013.6	33.5	29.4	27.5	24.6	76	33	0.0	6.6	***	***
05	1014.4	31.4	29.1	27.8	24.2	75	54	Trace	7.2	***	***
06	1015.0	32.0	28.9	27.3	23.7	74	53	Trace	9.4	***	***
07	1014.9	31.5	28.3	25.8	23.7	77	65	22.8	8.9	***	***
08	1015.4	30.4	27.7	26.0	22.0	71	71	Trace	9.1	***	***
09	1016.4	31.0	27.1	23.7	21.1	71	49	4.8	9.3	***	***
10	1018.0	26.6	24.0	21.6	13.2	51	45	0.0	6.0	***	***
11	1016.8	28.1	24.1	21.2	12.4	48	16	0.0	10.7	***	***
12	1015.4	29.6	25.2	21.9	13.8	50	23	0.0	10.7	***	***
13	1013.5	29.6	26.0	23.3	17.5	60	64	0.0	8.0	***	***
14	1012.1	31.0	26.9	24.9	19.8	66	21	0.0	10.5	***	***
15	1010.9	31.6	27.5	24.1	16.7	53	31	0.0	10.7	***	***
16	1009.1	31.3	28.3	25.6	15.4	46	81	0.0	6.7	***	***
17	1008.9	29.0	27.2	26.3	14.2	45	87	Trace	1.5	***	***
18	1013.3	26.7	20.9	17.3	14.0	67	88	19.7	0.0	***	***
19	1015.7	26.2	23.0	18.3	13.0	54	74	0.0	5.8	***	***
20	1017.5	27.2	24.3	22.7	16.9	64	66	0.0	6.0	***	***
21	1017.2	28.5	25.2	23.2	18.7	68	36	0.0	10.3	***	***
22	1015.5	30.3	26.6	22.8	19.5	67	66	Trace	6.8	***	***
23	1014.9	30.7	26.5	24.3	20.6	71	86	0.0	4.1	***	***
24	1016.1	27.1	25.2	23.8	18.8	68	70	0.0	9.3	***	***
25	1018.2	25.8	23.8	22.6	16.2	63	46	0.0	10.5	***	***
26	1017.2	26.7	23.9	22.0	17.2	66	34	0.0	10.6	***	***
27	1015.9	28.1	24.6	22.4	18.5	70	28	0.0	10.4	***	***
28	1015.4	30.0	25.5	23.3	18.9	68	16	0.0	10.4	***	***
29	1014.2	30.0	25.7	23.7	18.6	65	60	0.0	10.0	***	***
30	1011.4	28.2	25.4	22.6	16.2	57	80	0.0	9.2	***	***
31	1008.7	27.2	25.4	23.8	14.1	50	85	0.0	2.8	***	***
Mean/Total	1014.3	29.5	26.2	23.9	18.7	65	56	49.9	241.0	***	***
Climatological Normal?	1014.0	28.1	25.7	23.9	20.2	73	58	120.3	197.8	080	26.3

[^] Information of wind direction and wind speed for Waglan Island are based on automatic weather station data since August 1989

Trace means rainfall less than 0.05 mm

? 1991-2020 Climatological Normal, unless otherwise specified

Source: Daily Extract | Hong Kong Observatory(HKO) | Climate Information Service



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2022/11 Daily Extract of Meteorological Observations from HKO

2022/11 Daily Extract of Meteorological Observations from HKO Hong Kong Observatory										Waglan Is	land^
Day	Mean Pressure (hPa)	Air 1 Absolute Daily Max (deg. C)	Fempera Mean (deg. C)	Absolute Daily Min (deg. C)	Mean Dew Point (deg. C)	Mean Relative Humidity (%)	Mean Amount of Cloud (%)	Total Rainfall (mm)	Total Bright Sunshine (hours)	Prevailing Wind Direction (degrees)	Mean Wind Speed (km/h)
01	1008.2	25.3	22.0	18.9	14.4	64	88	4.5	0.0	***	***
02	1007.0	21.5	20.2	18.9	17.8	86	88	23.7	0.0	***	***
03	1012.0	23.2	22.1	20.9	20.8	93	88	58.1	0.0	***	***
04	1016.3	24.0	22.6	21.9	20.2	87	88	4.0	0.0	***	***
05	1019.0	22.2	21.5	20.8	17.6	79	90	Trace	0.1	***	***
06	1018.6	22.5	20.8	19.3	17.9	84	88	6.6	0.8	***	***
07	1017.3	23.5	21.5	19.7	18.8	85	88	1.6	0.7	***	***
08	1017.3	23.7	22.4	20.6	19.7	85	88	7.7	0.4	***	***
09	1017.3	26.7	23.8	21.6	19.4	77	44	0.0	8.8	***	***
10	1016.7	27.9	24.8	23.0	20.7	78	46	0.0	9.0	***	***
11	1016.2	28.1	25.0	23.5	20.6	77	49	0.0	6.4	***	***
12	1015.3	26.8	24.6	23.3	20.8	79	66	Trace	0.9	***	***
13	1015.7	28.5	24.8	22.9	21.3	81	17	0.0	10.0	***	***
14	1016.7	25.7	24.1	23.2	20.1	79	83	0.0	2.2	***	***
15	1015.5	26.0	24.3	23.4	20.1	78	69	0.0	7.1	***	***
16	1015.0	25.8	24.1	23.2	20.4	80	70	0.0	5.6	***	***
17	1014.6	27.2	24.5	22.9	20.7	80	63	0.0	5.1	***	***
18	1015.6	26.9	24.6	23.1	20.8	80	61	0.0	8.5	***	***
19	1015.0	27.6	25.1	23.7	20.7	77	43	0.0	9.7	***	***
20	1014.0	27.5	24.7	23.3	20.6	78	53	0.0	8.9	***	***
21	1013.6	25.3	23.9	23.1	19.9	78	76	0.5	0.2	***	***
22	1013.1	24.1	23.4	22.3	21.0	86	88	2.5	0.0	***	***
23	1013.8	24.8	23.4	22.5	21.9	91	88	3.4	0.0	***	***
24	1015.2	22.6	21.8	21.4	20.6	93	88	9.6	0.0	***	***
25	1015.6	23.4	22.3	21.3	20.9	92	90	4.8	0.0	***	***
26	1014.8	23.6	22.7	21.7	20.7	88	87	0.5	0.2	***	***
27	1012.6	23.7	23.1	22.1	21.3	90	88	1.9	0.0	***	***
28	1012.5	28.6	25.6	23.4	23.4	88	65	1.4	4.2	***	***
29	1013.5	27.8	25.5	24.3	22.7	85	35	0.0	8.9	***	***
30	1017.3	26.1	22.8	18.3	19.6	82	61	0.0	2.6	***	***
Mean/Total	1014.8	25.4	23.4	22.0	20.2	83	71	130.8	100.3	***	***
Climatological Normal?	1017.3	24.5	22.2	20.3	16.7	72	58	39.3	172.3	070	26.6

^{***} unavailable

Trace means rainfall less than 0.05 mm

? 1991-2020 Climatological Normal, unless otherwise specified

Source: Daily Extract | Hong Kong Observatory(HKO) | Climate Information Service

[^] Information of wind direction and wind speed for Waglan Island are based on automatic weather station data since August 1989



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APPENDIX G - GRAPHICAL PLOTS OF THE MONITORING RESULT



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AMS1N – 1-hour and 24-hour TSP monitoring

Date	Weather	1-hour TSP Monitoring	24-hour TSP monitoring
		Average	Average
		Concentration	Concentration
		(µg/m3)	(µg/m3)
06/09/2022	Fine	61.3	60.0
09/09/2022	Fine	26.0	25.0
15/09/2022	Fine	11.3	27.0
21/09/2022	Fine	10.0	24.0
27/09/2022	Cloudy	28.3	29.0



Date	Weather	1-hour TSP Monitoring	24-hour TSP monitoring
		Average	Average
		Concentration	Concentration
		(µg/m3)	(µg/m3)
03/10/2022	Sunny	30.7	26.0
07/10/2022	Cloudy	23.0	25.0
13/10/2022	Fine	19.7	18.0
19/10/2022	Cloudy	28.0	30.0
25/10/2022	Cloudy	22.7	26.0



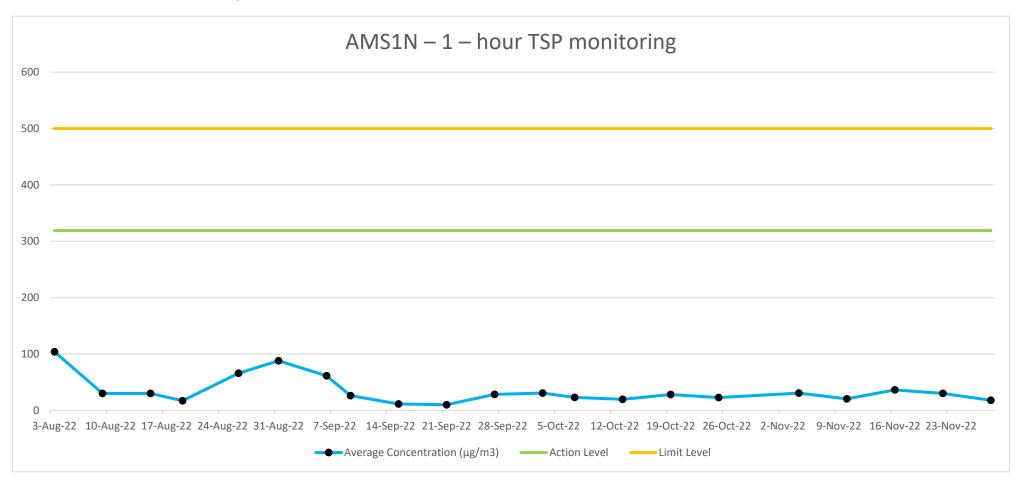
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Date	Weather	1-hour TSP Monitoring	24-hour TSP Monitoring
		Average	Average
		Concentration	Concentration
		(µg/m3)	(µg/m3)
04/11/22	Fine	30.7	31
10/11/22	Cloudy	20.3	19
16/11/22	Fine	36.3	36
22/11/22	Cloudy	30.0	30
28/11/22	Cloudy	18.0	21
	Average:	26.0	28.0
	Action Level:	319	153
	Limit Level:	500	260



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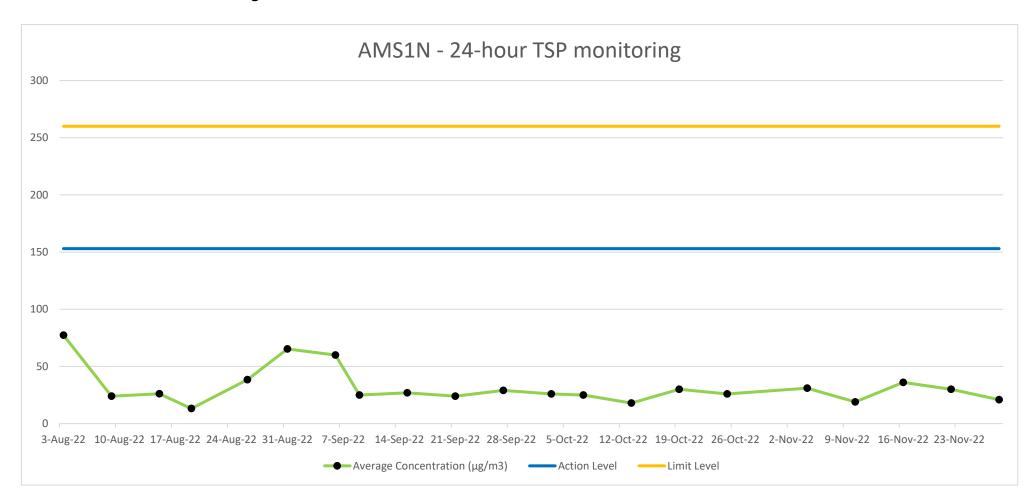
AMS1N-1 - hour TSP Monitoring





ED 540/0040 Dart Ohaltar Commence Otama Commence Warles at Da Tai O	Page	G-6
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AMS1N-24-hour TSP Monitoring





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AMS2N1 – 1- hour and 24-hour TSP Monitoring

Date	Weather	1-hour TSP Monitoring	24-hour TSP monitoring
		Average	Average
		Concentration	Concentration
		(µg/m3)	(µg/m3)
02/09/2022	Fine	65.0	60.0
09/09/2022	Fine	42.7	44.0
15/09/2022	Fine	52.0	48.0
21/09/2022	Fine	64.0	47.0
27/09/2022	Cloudy	64.3	66.0



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Date	Weather	1-hour TSP Monitoring	24-hour TSP monitoring
		Average	Average
		Concentration	Concentration
		(µg/m3)	(µg/m3)
03/10/2022	Sunny	68.0	66.0
07/10/2022	Cloudy	50.7	66.0
13/10/2022	Fine	43.0	59.0
19/10/2022	Cloudy	50.3	57.0
25/10/2022	Cloudy	41.7	43.0



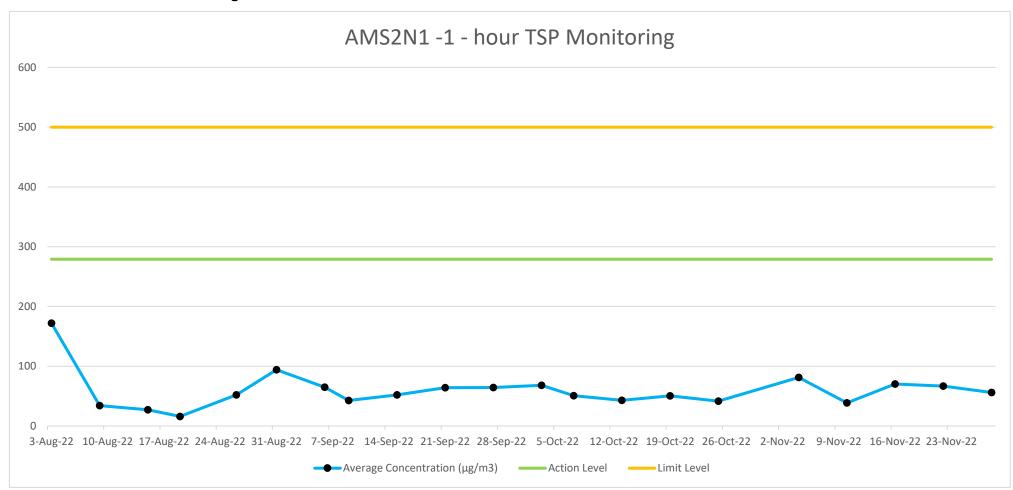
EP-516/2016 - Port Shelter Sewerage, Stage3 - Sewerage Works at Po Toi O Page G-9 Ref# Rev. 01 Date Jan 23

Date	Weather	1-hour TSP Monitoring	24-hour TSP Monitoring
		Average	Average
		Concentration	Concentration
		(µg/m3)	(µg/m3)
04/11/22	Fine	81.3	84.0
10/11/22	Cloudy	38.7	36.0
16/11/22	Fine	70.3	70.0
22/11/22	Cloudy	66.7	66.0
28/11/22	Cloudy	56.0	55.0
	Average:	57.0	58.0
	Action Level:	279	179
	Limit Level:	500	260



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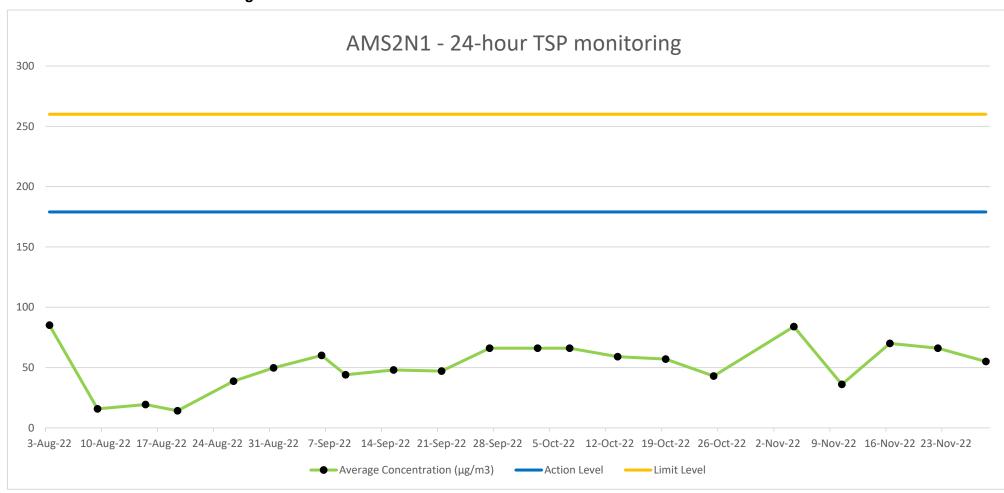
AMS2N-1 - hour TSP Monitoring





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AMS2N1- 24 - hour TSP Monitoring





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AMS3N – 1- hour and 24-hour TSP Monitoring

Date	Weather	1-hour TSP Monitoring	24-hour TSP monitoring
		Average	Average
		Concentration	Concentration
		(µg/m3)	(µg/m3)
06/09/2022	Fine	49.3	44.0
09/09/2022	Fine	27.3	31.0
15/09/2022	Fine	31.0	24.0
21/09/2022	Fine	42.0	31.0
27/09/2022	Cloudy	43.3	44.0



Date	Weather	1-hour TSP Monitoring	24-hour TSP monitoring
		Average	Average
		Concentration	Concentration
		(µg/m3)	(µg/m3)
03/10/2022	Sunny	42.7	42.0
07/10/2022	Cloudy	46.0	47.0
13/10/2022	Fine	57.3	39.0
19/10/2022	Cloudy	50.3	30.0
25/10/2022	Cloudy	38.0	34.0



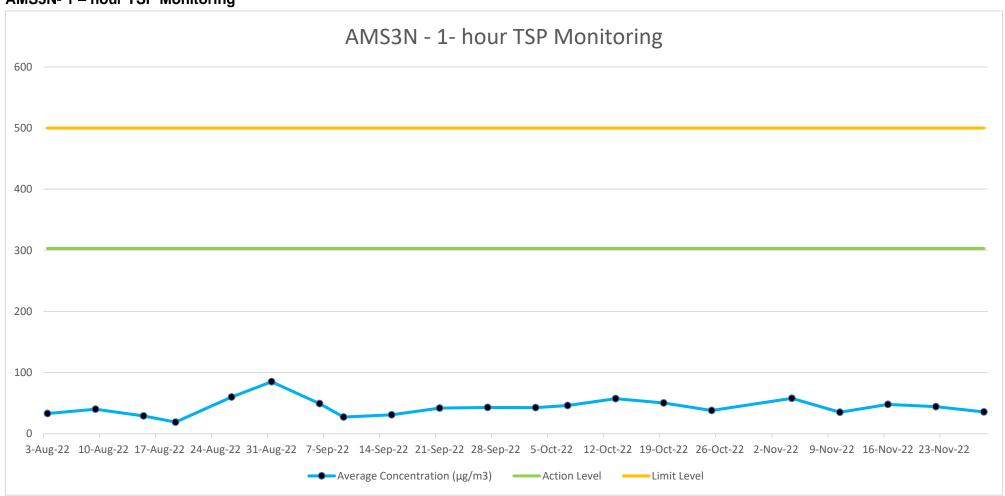
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Date	Weather	1-hour TSP Monitoring	24-hour TSP Monitoring
		Average	Average
		Concentration	Concentration
		(µg/m3)	(µg/m3)
04/11/22	Fine	58.0	57.0
10/11/22	Cloudy	35.0	34.0
16/11/22	Fine	48.0	48.0
22/11/22	Cloudy	44.3	51.0
28/11/22	Cloudy	35.7	38.0
	Average:	43.0	46.0
	Action Level:	158	158
	Limit Level:	500	260



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		-
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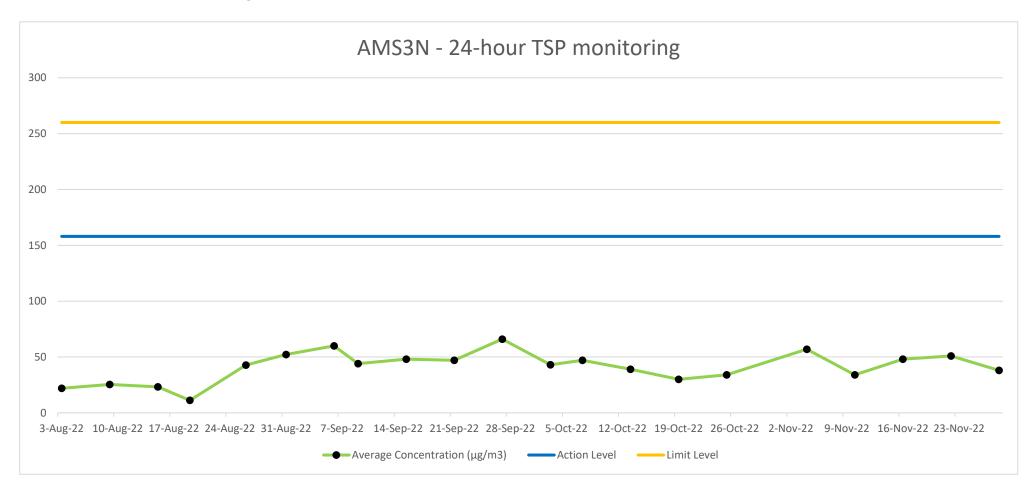
AMS3N-1 - hour TSP Monitoring





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AMS3N – 24-hour TSP Monitoring





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AMS4N — 1- hour and 24-hour TSP Monitoring

Date	Weather	1-hour TSP Monitoring	24-hour TSP monitoring
		Average	Average
		Concentration	Concentration
		(µg/m3)	(µg/m3)
06/09/2022	Fine	55.3	49.0
09/09/2022	Fine	16.3	24.0
15/09/2022	Fine	30.3	26.0
21/09/2022	Fine	47.3	27.0
27/09/2022	Cloudy	30.3	30.0



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Date	Weather	1-hour TSP Monitoring	24-hour TSP monitoring
		Average	Average
		Concentration	Concentration
		(µg/m3)	(µg/m3)
03/10/2022	Sunny	30.7	30.0
07/10/2022	Cloudy	34.0	28.0
13/10/2022	Fine	45.0	41.0
19/10/2022	Cloudy	49.3	37.0
25/10/2022	Cloudy	34.3	27.0



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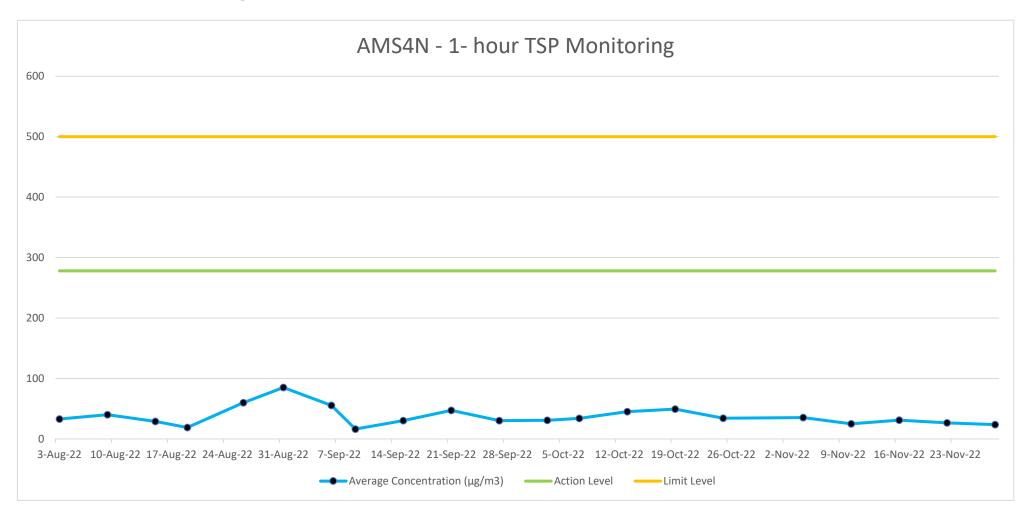
Jan 23

Date	Weather	1-hour TSP Monitoring	24-hour TSP Monitoring
		Average	Average
		Concentration	Concentration
		(µg/m3)	(µg/m3)
04/11/22	Fine	35.3	37.0
10/11/22	Cloudy	25.0	24.0
16/11/22	Fine	31.0	32.0
22/11/22	Cloudy	26.7	29.0
28/11/22	Cloudy	23.7	40.0
	Average:	34.0	32.0
	Action Level:	278	144
	Limit Level:	500	260



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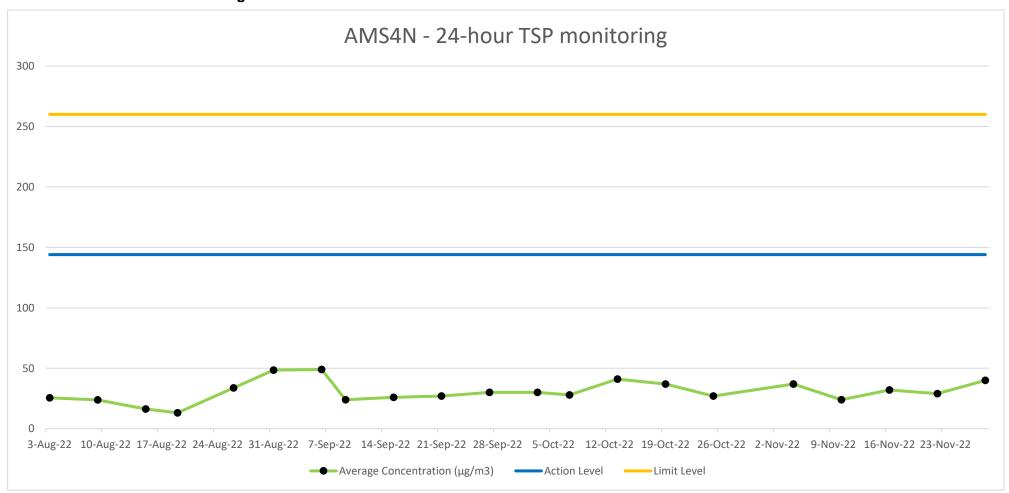
AMS4N-1 - hour TSP Monitoring





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AMS4N-24 – hour TSP Monitoring





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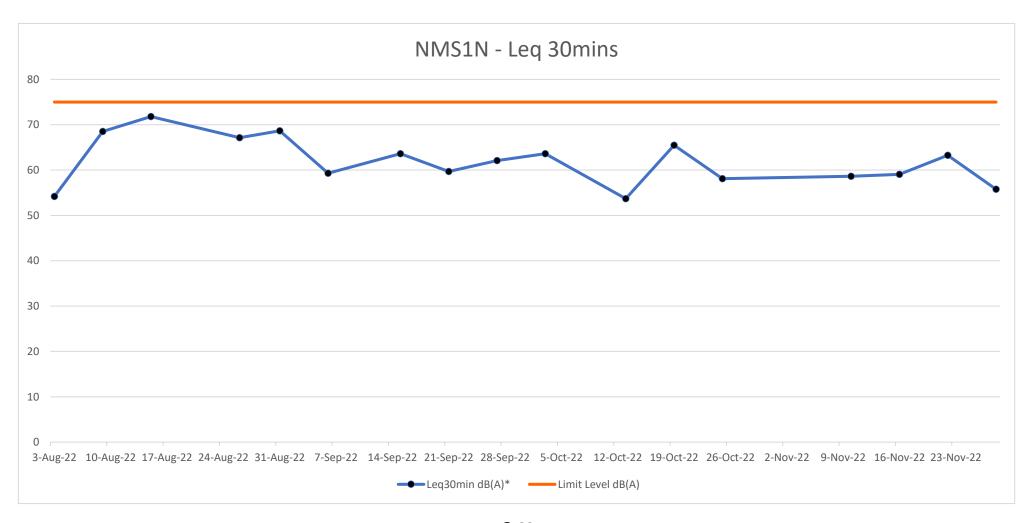
NMS1N - Leq30 Noise monitoring

Start Date & Time	Leq dB(A)	L90 dB(A)	L10 dB(A)	Limit Level:
06/09/2022	59.3	51.1	61.9	75
15/09/2022	63.6	61.1	66.2	75
21/09/2022	59.7	52.6	62.1	75
27/09/2022	62.1	45.3	65.2	75
03/10/2022	63.6	45.2	64.6	75
13/10/2022	53.7	39.6	57.3	75
19/10/2022	65.5	63.2	67.8	75
25/10/2022	58.1	55.7	60.3	75
10/11/2022	58.6	56.2	60.4	75
16/11/2022	59.0	40.1	61.4	75
22/11/2022	63.3	45.9	65.2	75
28/11/2022	55.8	50.0	57.1	75
Action Level:	When one valid documented complaint is received			
Limit Level:	75.0 dB(A)			



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NMS1N - Leq30 Noise monitoring





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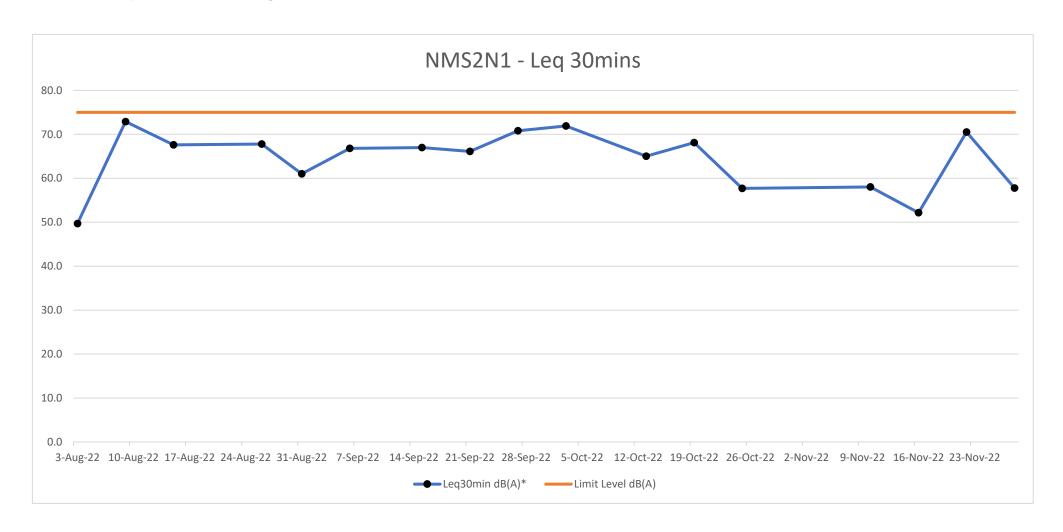
NMS2N1 - Leq30 Noise monitoring

Start Date & Time	Leq dB(A)	L90 dB(A)	L10 dB(A)	Limit Level:
06/09/2022	66.8	60.2	69.2	75
15/09/2022	67.0	64.4	69.3	75
21/09/2022	66.1	64.2	67.1	75
27/09/2022	70.8	67.9	71.9	75
03/10/2022	71.9	66.7	72.9	75
13/10/2022	65.0	64.4	65.8	75
19/10/2022	68.1	65.8	70.0	75
25/10/2022	57.7	55.2	59.9	75
10/11/2022	58.0	55.8	60.2	75
16/11/2022	52.2	47.9	54.8	75
22/11/2022	70.5	67.6	72.2	75
28/11/2022	57.8	48.6	63.7	75
Action Level:	When one valid documented complaint is received			
Limit Level:	75.0 dB(A)			



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NMS2N1 - Leq30 Noise monitoring





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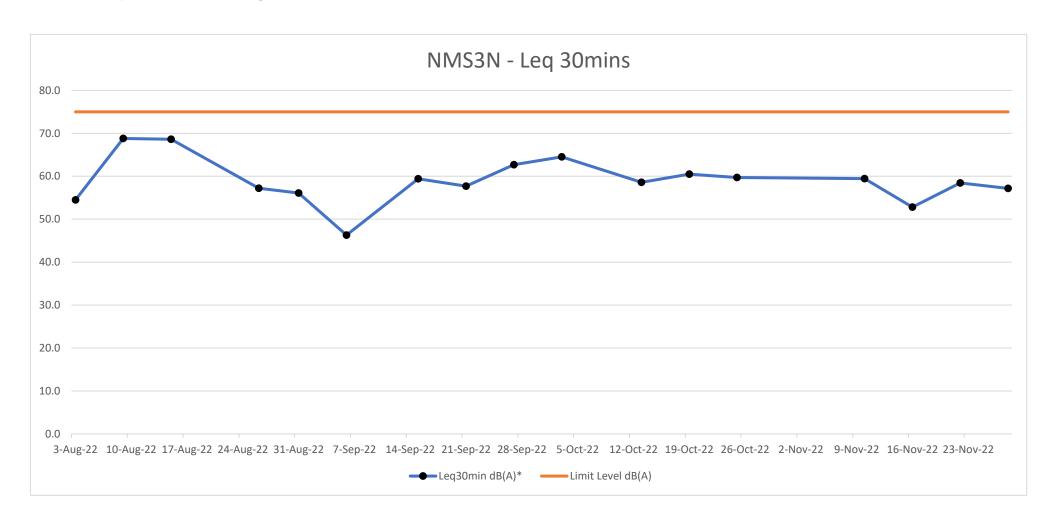
NMS3N - Leq30 Noise monitoring

Start Date & Time	Leq dB(A)	L90 dB(A)	L10 dB(A)	Limit Level:
06/09/2022	46.3	39.2	49.6	75
15/09/2022	59.4	57.3	61.4	75
21/09/2022	57.7	52.8	59.0	75
27/09/2022	62.7	57.5	65.5	75
03/10/2022	64.5	58.0	71.0	75
13/10/2022	58.6	53.2	60.5	75
19/10/2022	60.5	58.5	62.7	75
25/10/2022	59.7	57.2	61.9	75
10/11/2022	59.5	56.6	60.9	75
16/11/2022	52.8	51.4	55.8	75
22/11/2022	58.4	53.5	60.5	75
28/11/2022	57.2	47.7	58.3	75
Action Level:	When one valid documented complaint is received			
Limit Level:	75.0 dB(A)			



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NMS3N - Leq30 Noise monitoring





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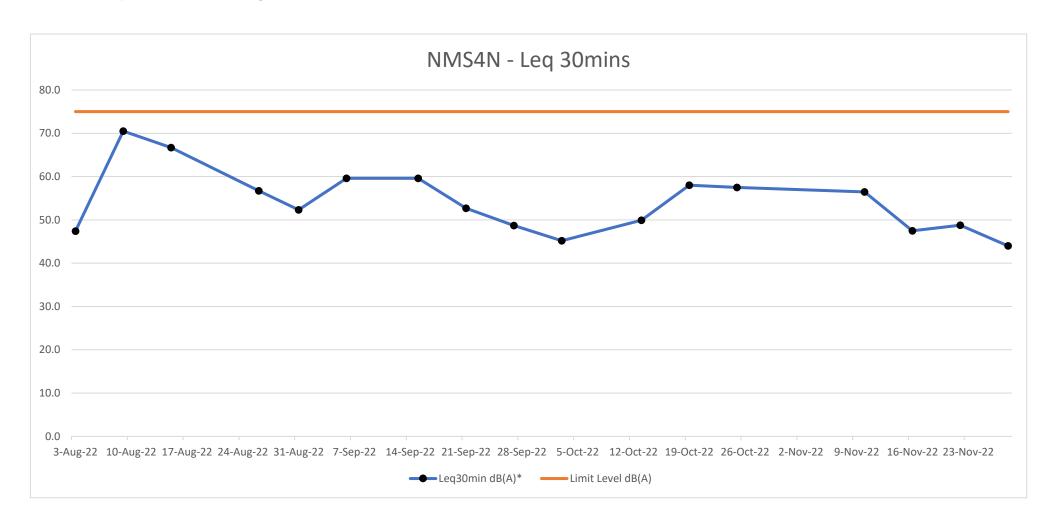
NMS4N - Leq30 Noise monitoring

Start Date & Time	Leq dB(A)	L90 dB(A)	L10 dB(A)	Limit Level:		
06/09/2022	59.6	53.4	62.3	75		
15/09/2022	59.6	57.2	61.3	75		
21/09/2022	52.7	41.5	55.2	75		
27/09/2022	48.7	44.2	51.3	75		
03/10/2022	45.2	44.6	51.5	75		
13/10/2022	49.9	42.1	51.8	75		
19/10/2022	58.0	56.0	60.5	75		
25/10/2022	57.5	55.6	59.5	75		
10/11/2022	56.5	54.6	58.7	75		
16/11/2022	47.5	39.7	49.7	75		
22/11/2022	48.8	43.8	51.3	75		
28/11/2022	44.0	38.5	44.9	75		
Action Level:	W	hen one valid documented con	nplaint is received			
Limit Level:	75.0 dB(A)					



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NMS4N - Leq30 Noise monitoring





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APPENDIX H - SUMMARY OF WASTE FLOW TABLE



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Monthly Summary Waste Flow Table for 2022 Year

		Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly			
Month	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposal as Public Fill	Imported Fill	Metals	Paper / Cardboard Packaging	Plastics (see note 3)	Chemical Waste	Other, e.g. general refuse
	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	[in '000kg]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000m³]
Jan	0.142	0.000	0.000	0.000	0.142	0.000	0.000	0.000	0.000	0.000	0.000
Feb	0.100	0.000	0.000	0.000	0.100	0.000	0.000	0.000	0.000	0.000	0.000
Mar	0.040	0.000	0.000	0.000	0.040	0.000	0.000	0.000	0.000	0.000	0.000
Apr	0.010	0.000	0.000	0.000	0.010	0.000	0.000	0.000	0.000	0.000	0.000
May	0.066	0.000	0.000	0.000	0.064	0.000	0.000	0.000	0.000	0.000	0.002
June	0.017	0.000	0.000	0.000	0.017	0.000	0.000	0.000	0.000	0.000	0.000
Sub- Total	0.375	0.000	0.000	0.000	0.353	0.000	0.000	0.000	0.000	0.000	0.002
July	0.670	0.000	0.000	0.000	0.670	0.000	0.000	0.000	0.000	0.000	0.000
Aug	0.730	0.000	0.000	0.000	0.730	0.000	0.000	0.000	0.000	0.000	0.000
Sep	0.092	0.000	0.000	0.000	0.090	0.000	0.000	0.000	0.000	0.000	0.002
Oct	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Nov	0.010	0.000	0.000	0.000	0.010	0.000	0.000	0.000	0.000	0.000	0.000
Dec	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	1.877	0.000	0.000	0.000	1.873	0.000	0.000	0.000	0.000	0.000	0.004

Note:

- 1) The performance targets are given in the Environmental Management Plan.
- (2) The waste flow table shall also include C&D materials to be imported for use at the Site.
- (3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.



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APPENDIX I - CUMULATIVE STATISTICS ON COMPLAINTS, NOTIFICATIONS OF SUMMONS



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Appendix I - Cumulative Statistics on Complaints, Notifications of Summons, Successful Prosecutions and Public Engagement Activities

Environmental Complaints Log

Complaint Log	Date of	Received	Received	Nature of	Relevant to the	Investigation/ Mitigation	Status
No.	Complaint	From	Ву	Environmental	Construction Work of	Action	
				Complaint	Project Site? (Y/N)		
001	28	EPD	ET	Waste	N	The investigation report was	Closed
	December			Management		submitted on 7 January 2022	
	2021						

Remark: * No Notifications of Summons or Successful Prosecutions were received during the reporting period.

Cumulative Statistics on Complaints, Notifications of Summons and Successful Prosecutions and Public Engagement Activities

Reporting Period	Complaints	Notifications of Summons and	Public Engagement Activities
		Prosecutions	
2022/09	0	0	0
2022/10	0	0	0
2022/11	0	0	0
Cumulative Project-to-Date	1	0	0