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China Harbour - Zhen Hua Joint Venture

Contract No.: CV/2015/07 Handling of Surplus Public Fill (2016-2018)

TUEN MUN AREA 38 FILL BANK

QUARTERLY EM&A SUMMARY REPORT

NO.12

(FROM FEBRUARY 2020 TO APRIL 2020)

Prepared by:

TANG, Chung Hang Environmental Officer

Checked by:

LÁÚ, Chi Leung

Environmental Team Leader

Issue Date: 27 May 2020

Report No.: ENA03758



Ref.: CEDPFRSFEM02_0_0927L.20

28 May 2020

By Email and Fax No.: 2695 3944

ETS-Testconsult Limited 8/F, Block B, Veristrong Industrial Centre 34-36 Au Pui Wan Street Fo Tan, Hong Kong

Attention: Mr. C.L. Lau

Dear Mr. Lau,

Re: Contract No. CV/2015/07

Handling of Surplus Public Fill (2016 - 2018)

Quarterly EM&A Summary Report No. 12 (February to April 2020) for the Tuen Mun Area 38 Fill Bank

Reference is made to your submission of the draft Quarterly EM&A Summary Report No. 12 (February to April 2020) for the TM Area 38 Fill Bank received by email on 27 May 2020 and the subsequent revision on 28 May 2020.

We are pleased to inform you that we have no further comment on the quarterly EM&A summary report.

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

Yours sincerely, For and on behalf of Ramboll Hong Kong Limited

Y. H. Hui

Independent Environmental Checker

c.c. CEDD Attn: Mr. T M Yeung / Ms. May Lau Fax No.: 2714 0113

CHZHJV Attn: Mr. S W Sung By Email

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EXECUTIVE SUMMARY

This is Quarterly Environmental Monitoring and Audit (EM&A) Summary Report No.12 prepared by ETS-Testconsult Ltd (ET) for the "Contract No. CV/2015/07 Handling of Surplus Public Fill (2016-2018) - Tuen Mun (TM) Area 38 Fill Bank" (The Project).

This report documents the findings of EM&A Works conducted during the operation phase of Fill Bank at Tuen Mun Area 38 from February 2020 to April 2020.

Site Activities

As informed by the Contractor, the site activities in this reporting quarter were as below:

1. Operation of the TM38 Fill Bank. February 2020

2. Delivery of public fill to Taishan;

3. Concrete block breaking work:

4. Operation of glass cullet storage compartment at TMFB;

5. Construction of Concrete Access Road Adjacent to ECO Park Near the Concrete Block Wall

at TMFB for Safety and Environmental Reasons;

1. Operation of the TM38 Fill Bank. March 2020

> 2. Delivery of public fill to Taishan; 3. Concrete block breaking work;

4. Operation of glass cullet storage compartment at TMFB:

5. Construction of Concrete Access Road Adjacent to ECO Park Near the Concrete Block Wall

at TMFB for Safety and Environmental Reasons:

April 2020 1. Operation of the TM38 Fill Bank.

2. Delivery of public fill to Taishan; 3. Concrete block breaking work;

4. Operation of glass cullet storage compartment at TMFB;

Environmental Monitoring Works

Air Monitoring

No exceedance of Action and Limit levels was recorded for 1-hr and 24-hr TSP monitoring in this quarter.

Marine Water Quality Monitoring

According to the summary of marine water monitoring results, no exceedance of Action and Limit levels was recorded in this quarter.

Noise Monitoring

No exceedance of Action and Limit levels for noise monitoring was recorded in this quarter.

Environmental Complaints, Notification of summons and successful prosecutions

In this quarter, no complaint was received. Besides, no notification of summon and prosecution with respect to environmental issue was received in this quarter.

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1.0 INTRODUCTION

China Harbour – Zhen Hua Joint Venture (CHZH-JV) appointed Environmental Team (ET) of ETS-Testconsult Limited (ETL) to undertake the Environmental Monitoring and Audit (EM&A) for the "Contract No: CV/2015/07 –Handling of Surplus Public Fill (2016-2018) – Tuen Mun (TM) Area 38 Fill Bank" (The Project).

In accordance with the Condition 4 of Part C of Environmental Permit (No.: EP-210/2005/C) (the EP), an EM&A programme as set out in the Project Profile should be implemented. The EM&A programme requires environmental monitoring for air quality, water quality and environmental site inspections for air quality, water quality, landscape and visual, and waste management.

Baseline monitoring was completed in May 2003 by Stanger Asia Ltd. Action and Limit Levels were established for air and water quality parameters based on the baseline monitoring results.

This quarterly report documented the findings of EM&A Works conducted during the operation phase of Fill Bank at Tuen Mun Area 38 from February 2020 to April 2020.

2.0 PROJECT INFORMATION

2.1 Work Programme in this Reporting Quarter

Details of work programme are shown in Appendix G.

2.2 Project Organization and Management Structure

The project organization chart is shown in Appendix A.

2.3 Contact Details of Key Personnel

The key personnel contact names and telephone numbers are shown in Table 2.1.

Table 2.1 Contact Details of Key Personnel

Organization	Name of Key Staff	Project Role	Tel. No.	Fax No.
CEDD	Leo Lam, T M Yeung, May Lau	Engineer's Representative	2762 5555	2714 0113
IEC (Ramboll)	Y. H. Hui	IEC	3465 2888	3465 2899
Contractor (CHZH-JV))	Zhou Chang Ying	Senior Project Manager	96266299	22474108
ET (ETL)	C. L. Lau	ET Leader	2946 7791	2695 3944

3.0 SUMMARY OF EM&A REQUIREMENTS

3.1 EM&A Programme

The EM&A programme required environmental monitoring for air, marine water and environmental site inspections for air, marine water, landscape and visual, and waste management. The EM&A requirements for each parameter described in the following sections include:

- All monitoring parameters;
- Monitoring schedules for the reporting month and forthcoming months:
- Action and Limit levels for all environmental parameters;
- Event/Action Plans:
- Environmental mitigation measures, as recommended in the Project EIA study final report; and
- Environmental requirements in contract documents.

The advice on implementation status of environmental protection and pollution control/mitigation measures is summarized in Section 5 of the Report.

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3.2 Monitoring Stations and Parameters

The EM&A Manual designates several locations to monitor environmental impacts in terms of air quality, noise and water quality due to the Project. The description and detailed locations of monitoring stations for air quality, noise and marine water quality are shown in Figures 1, 2 and 3 and relevant sections of this Report.

3.3 Monitoring Methodology and Calibration Details

All monitoring works were conducted and monitoring equipment was calibrated in according with the EM&A Manual.

3.4 Environmental Quality Performance Limits (Action/Limit Levels)

The environmental quality performance limits, i.e. Action/Limit Levels (AL Levels) were derived from the baseline monitoring results. If the measured environmental quality parameters exceed the AL Levels, the respective action plan will be implemented. The AL Levels for each monitoring parameter are given in Appendix E. The event action plan is given in Appendix F.

3.5 Environmental Mitigation Measures

Relevant mitigation measures were recommended in the EM&A Manual for the Contractor to implement. A list of mitigation measures is given in Appendix H.

4.0 MONITORING RESULTS

4.1 Air Quality

In accordance with the EM&A Manual, 1-hr and 24-hr TSP air quality monitoring are to be conducted three times and one time per six days correspondingly. In the reporting quarter, no exceedances of Action and Limit levels were recorded for 1-hr and 24-hr TSP monitoring. The monitoring trend of air quality during the reporting guarter are given in Appendix B.

Major dust sources in the Fill Bank were dump truck traffic and hauling activities.

Table 4.1 presents the number of exceedances recorded in each month of the reporting quarter. The number of monitoring event included regular monitoring events and additional ones.

Table 4.1 Summary of Number of Exceedances for 1-hr and 24-hr TSP Monitoring

Monitoring	Level of Exceedance	February 2020	March 2020	April 2020
Parameter				
24-hr TSP	No of monitoring events	5	5	5
	Action Level	0	0	0
	Limit Level	0	0	0
1-hr TSP	No of monitoring events	16	15	13
	Action Level	0	0	0
	Limit Level	0	0	0

4.2 Noise

Since Lands Dept did not approve to carry out noise monitoring at their own area where the noise monitoring stations TM-N1 and TM-N2 located due to the security, noise monitoring carried out at two noise monitoring stations TM-RN1 and TM-RN2 (refer to the figure attached) from 18 December 2007.

No exceedance was recorded in this reporting quarter.



4.3 Marine Water Quality

In accordance with the Project Profile, impact marine water quality monitoring was conducted at two control monitoring stations (TM-FC1 and TM-FC2) and two impact monitoring stations (TM-FM1and TM-FM2) in this quarter.

Impact marine water quality monitoring was conducted three days per week. Measurements were taken at both mid-ebb and mid-flood tides at three depths (i.e. 1m below surface, mid depth and 1m above seabed). The AL Levels are included in Appendix E.

According to the summary of marine water monitoring results, no exceedance of action and limit level was recorded in this quarter. Table 4.2 presents the total number of marine water quality exceedances in the reporting quarter. The trend of marine water quality in the past three months is depicted in Appendix D.

Table 4.2 Total Number of Marine Water Quality Exceedances in this quarter

Dama sa a tau			14	A == ="1 0 0 0 0
Parameter	Exceedance	February 2020	March 2020	April 2020
	Level			
Number of monitoring day	ys	13	13	10
Dissolved Oxygen, DO	Action	0	0	0
(S&M)	Limit	0	0	0
Dissolved Oxygen, DO	Action	0	0	0
(B)	Limit	0	0	0
Turbidity	Action	0	0	0
	Limit	0	0	0
Suspended Solids, SS	Action	0	0	0
	Limit	0	0	0

A comparison between the quarterly mean/median of SS and the 1.3 times of the baseline mean was made for each tide at each station. The statistical analysis results are given in Appendix I. Monitoring stations with significant difference (p<0.05) is summarized in Table 4.3.

Table 4.3 Summary of Statistically Significant Results of SS

Monitoring Station	Significant difference?		
Worldon's Station	Mid-flood	Mid-ebb	
Designated Control Station	FC1	X	X
Designated Control Station	FC2	Χ	X
Designated Monitoring Station	FM1	X	X
Designated Monitoring Station	FM2	X	X

5.0 INSPECTION RESULTS

5.1 Implementation Status of Environmental Mitigation Measures

ET conducted weekly site inspections to monitor the Contractor's implementation of environmental mitigation measures.

Air quality was the major environmental issue in the reporting quarter. The Contractor generally implemented most of the environmental mitigation measures in the reporting quarter. Dump truck traffic was the major dust source in the Fill Bank. Generally, the Contractor implemented adequate dust mitigation measures in the reporting quarter including dampening of haul roads, water spraying on the truckloads, during loading and unloading of material and for crushing plant, operation of automatic wheel washing facilities, dampening of fill material prior to handling or stockpiling, etc.

The major noise source was dump truck traffic in the Fill Bank. All site equipment and machinery were well maintained and no noise nuisance was observed during operating.

Drainage channels and wastewater treatment facilities were found maintained in good condition for merit function. The Contractor arranged site workers to clean up the silt and mud regularly.

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Although there were a few observations regarding accumulation of mud and silt inside the drainage channel and stagnant water, the Contractor rectified most of these problems. Besides, the Contractor was reminded to clear the accumulated mud and silt to avoid any blockage and clean the stagnant water properly.

Overall site area was found tidy and clean. The Contractor was reminded to collect and dispose of the general refuse and other C&D waste in a timely manner.

5.2 Status of Environmental Licensing and Permitting

The status of licences and permits is summarized in Table 5.1.

Table 5.1 Summary of environmental licensing and permit status

Table 5.1 Summary of environmental licensing and permit status							
Description	Permit No.	Valid	Period	Section			
		From	То				
Environmental Permit	EP- 210/2005/C	06/09/18		Issued			
Marine Dumping Permit	EP/MD/20- 103	13/03/20	06/06/20	Approval for dumping 499,999 tons (approximately equal to 277,777 cu.m. bulked quantity) of Public Fill (Reclamation Materials) from Tseung Kwan O Area 137 Fill Bank and Tuen Mun Area 38 Fill Bank to designated dumping area at Guanghaiwan of Taishan			
Chemical Waste Producer	5296-421- C4184-01	20/04/17		Spent battery containing heavy metals and spent lubricating oil			
Effluent Discharge License	WT0002870 1-2017	25/09/17	30/09/22	Effluent arising from vehicle washing and dust suppression activities and contaminated surface runoff treated by screening facilities and sedimentation tanks (sedimentation and chemical precipitation).			
Billing Account for Waste Disposal	7027643	22/05/17					
Notification Pursuant to Section 3(1) of the Air Pollution Control (Construction Dust)	415661	12/04/17					

5.3 Advice on Solids and Liquid Waste Management Status

Table 5.2 summarizes data on offsite waste disposal in the guarter.

Table 5.2 Estimated Offsite Waste Disposal in the Reporting Quarter

Waste Type	February 2020	March 2020	April 2020
Public Fill ('000m³)	0	6.53	0
C&D Waste (general refuse) ('000kg)	7.81	15.61	37.88
Chemical Waste e.g. Waste oil (L) / Chemical Waste (kg)	0	0	0

6.0 NON-COMPLIANCE OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMITS

6.1 Summary of Non-compliance

According to the monitoring results, no action and limit level exceedance was recorded in this quarter.



6.2 Review of the Reasons for and the Implications of Non-compliance

Since no non-compliance was recorded in this guarter, no review was required.

6.3 Summary of Actions Taken

Since no exceedance was recorded in this guarter, no further action was required.

6.4 Summary of Environmental Complaint, Notification of Summon and Successful Prosecution Handling

In this quarter, no complaint was received. Besides, no notification of summon and prosecution with respect to environmental issue was received in this quarter.

A summary of environmental complaints and prosecutions was given in Table 6.1.

Table 6.1 Summary of Environmental Complaints and Prosecutions

Period	Complaints logged	Summon served	Successful Prosecution
February 2020	0	0	0
March 2020	0	0	0
April 2020	0	0	0
Cumulative	3	0	0

7.0 COMMENTS, CONCLUSIONS AND RECOMMENDATION

Major activity in the Fill Bank was the import and dumping of fill materials in this quarter. Air quality was the major environmental issue in the Fill Bank. Generally, the Contractor implemented most of the mitigation measures to minimize the dust impact.

No exceedance of action and limit levels was recorded for 1-hr and 24-hr TSP monitoring in the reporting quarter.

According to the marine water monitoring results in this quarter, no exceedance of action and limit level was recorded.

The noise level measured at the monitoring station complied with the Limit Level of 65dB(A). No complaint was received regarding noise issue in this reporting quarter.

In this quarter, no complaint was received. Besides, no notification of summon and prosecution with respect to environmental issue was received in this quarter.

According to the ET weekly site inspection and IEC site audits carried out in this quarter, it was indicated that site practices of the Contractor were generally undertaken in an environmentally acceptable manner and the overall site environmental performance was up to standard.

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

Air Quality

- Ensure the frequency of water spraying on haul roads, unloading areas and stockpiles to be sufficient to suppress the dust sources;
- Provide proper maintenance for the powered mechanical equipment and barges to avoid emission of dark smoke:
- Provide water spraying onto the truckloads during inspection of fill material;
- Conduct road sweeping on all paved haul roads and public roads especially outside and near the site egress by the road sweeper. Undertake water spraying on stockpiling area by water bowser;
- Erect adequate speed limit signs to advise the truck drivers of the speed limit;
- Operate mist spraying systems and automatic water sprinklers in the Fill Bank;
- Implement the dust mitigation measures for the construction activities;
- Designate proper haul roads to ensure effective water spraying; and



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Ensure all vehicles to be washed before leaving the site egress by provision, operation and maintenance of automatic wheel washing facilities.

Noise

Conduct noisy activities at a farther location from the NSRs.

Water Quality

- Maintain the drainage system, including the trapezoidal channels and permanent desilting chambers regularly; and
- Remove the stagnant water or provide approved pesticides for the stagnant water in the permanent desilting chambers, if any.

Chemical and Waste Management

- Remove waste materials from the site to avoid accumulation regularly;
- Handle and store chemical wastes properly;
- Remove unwanted material in the existing stockpiles and avoid further dumping of such material;
- Provide and maintain sufficient drip trays for diesel drums, chemical containers, chemical waste storage drums and diesel operated generator set;
- Maintain good housekeeping at the workshop area;
- Ensure sufficient tarpaulin sheets are provided to cover drip trays; and
- Avoid soil being polluted during oil filling and equipment maintenance; hence, properly remove and store the contaminated soil, if any.

Landscape and Visual

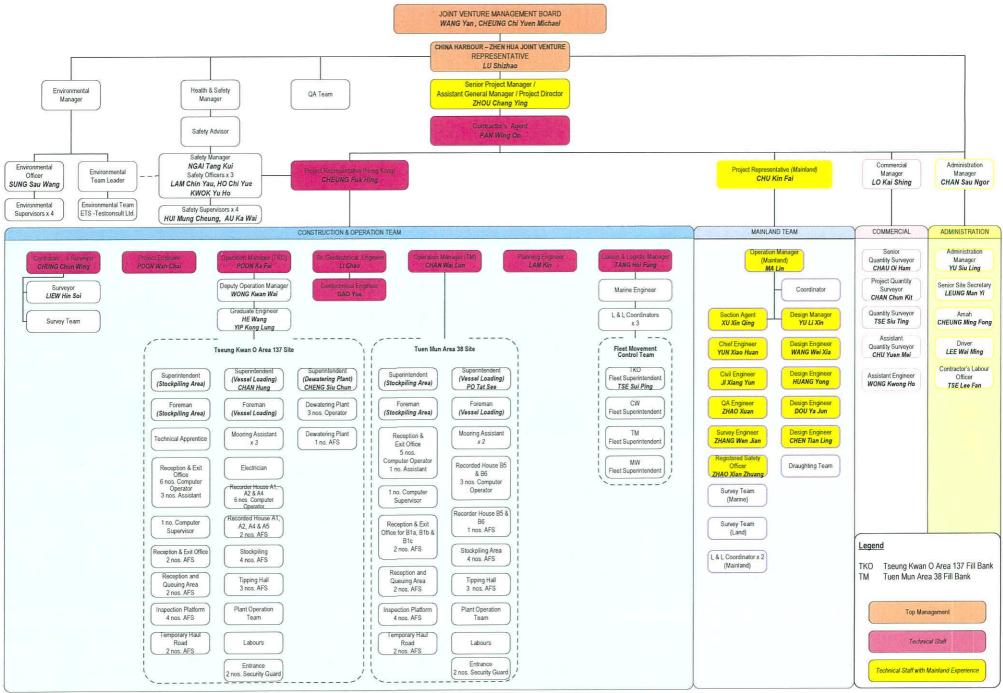
- Provide hydroseeding on the exposed slopes, on which the final profile has been formed;
- Erect all the site hoarding/chaining fences in accordance with agreed design at proper location;
 and
- Maintain the hydroseeding slopes in accordance with the Landscape Plan.

- END OF REPORT -



Appendix A

Organization Chart

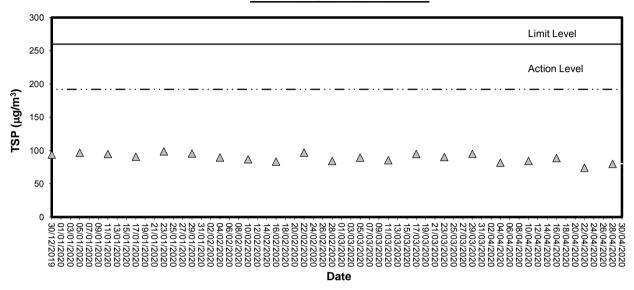




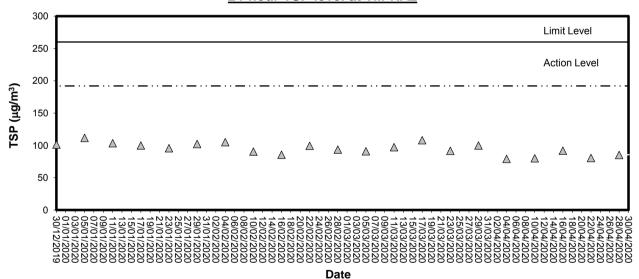
Appendix B Graphical Plots of Air Quality Monitoring Data



24-hour TSP level at TM-A1

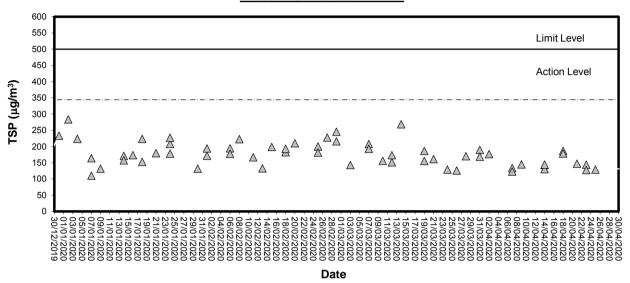


24-hour TSP level at TM-RA2

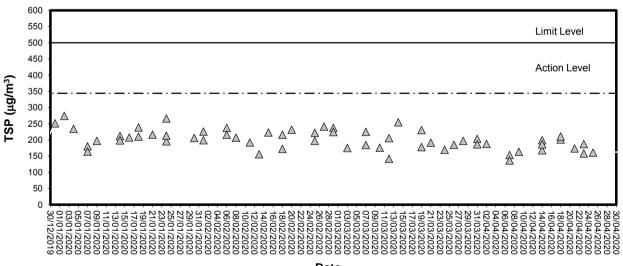




1-hour TSP level at TM-A1



1-hour TSP level at TM-RA2



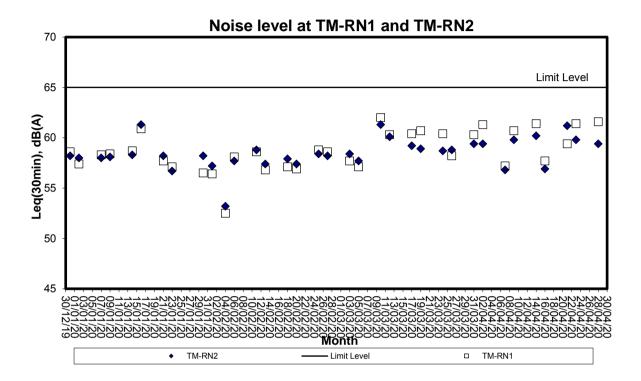
Date



Appendix C Graphical Plots of Impact Noise Monitoring Data



Noise Monitoring (Day-time)



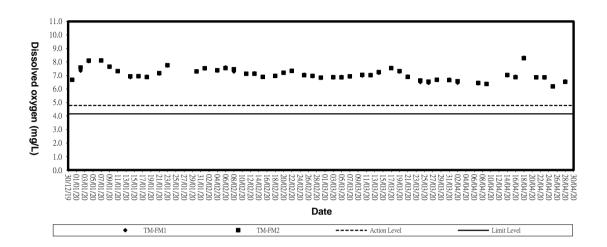


Appendix D

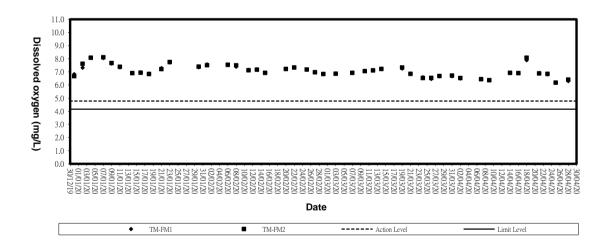
Graphical Plots of Impact Marine Water Quality Monitoring Data



Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide

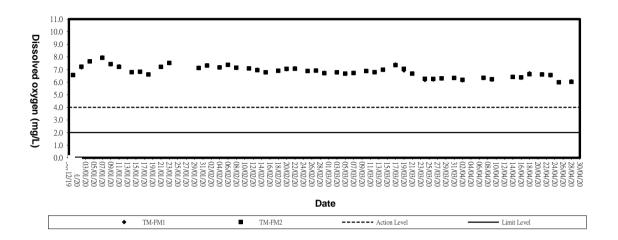


Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide

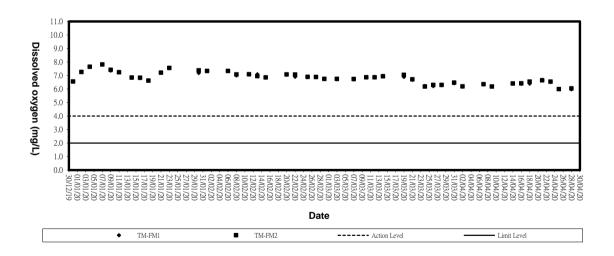




Dissolved Oxygen (Bottom) at Mid-Flood Tide

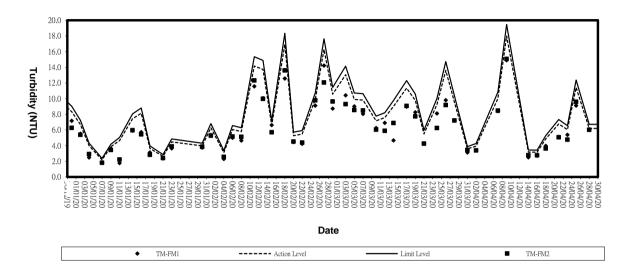


Dissolved Oxygen (Bottom) at Mid-Ebb Tide

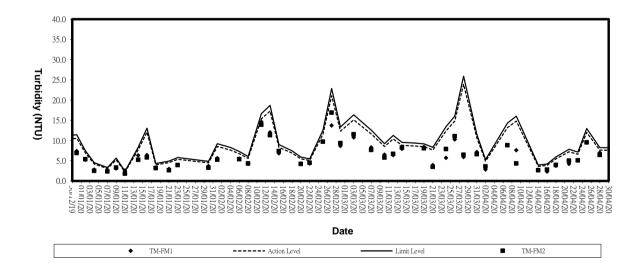




Turbidity (Depth-average) at Mid-Flood Tide

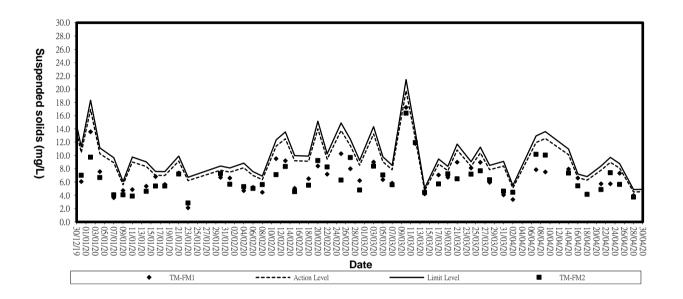


Turbidity (Depth-average) at Mid-Ebb Tide

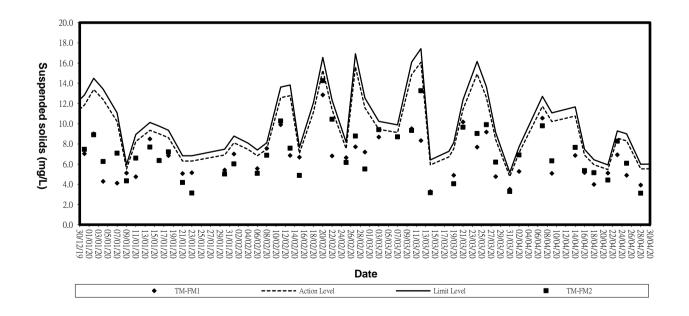




Suspended solids (Depth-average) at Mid-Flood Tide



Suspended Solids (Depth-average) at Mid-Ebb Tide





Appendix E

Environmental Quality Performance (Action / Limit Levels)



Action and Limit Levels for 1-hour TSP and 24-hour TSP Monitoring

Monitoring Location	24-hr TS	P (μg/m³)	1-hr TSP (μg/m³)		
	Action Level	Limit Level	Action Level	Limit Level	
TM-A1	192	260	344	500	
TM-A2	192	260	344	500	

Action and Limit Levels for Marine Water Quality Monitoring

Parameter	Action Level	Limit Level
DO (mg/L)	Surface & Middle <4.78 mg/L (5%-ile of baseline data)	Surface & Middle <4.00 mg/L (1%-ile of baseline data)
	Bottom <4.16 mg/L (5%-ile of baseline data)	Bottom <2.00 mg/L
SS (mg/L) (Depth-averaged)	>120% of the upstream control station's SS at the same tide on the same day	>130% of the upstream control station's SS at the same tide on the same day
Turbidity (NTU) (Depth-averaged)	>120% of the upstream control station's turbidity at the same tide on the same day	>130% of the upstream control station's turbidity at the same tide on the same day

Action and Limit Levels for Noise Monitoring

Time Period	Action *	Limit *
0700-1900 hrs on normal weekdays	When one documented complaint is received	65 dB(A)



Appendix F Event-Action Plans



	Contractor		Rectify any unacceptable	practise Amend working methods if appropriate	Submit proposals for remedial actions to IC(E) within 3 working days of notification implement the agreed proposals Amend proposal if appropriate		Take immediate action to avoid further exceedance Submit proposals for remedial actions to IC(E) within 3 working days of notification implement the agreed proposals Amend proposal if appropriate.
			2 Be	ap Ang	-, -/, -/, -/, -/, -/, -/, -/, -/, -/, -/, -/, -/,		
ITY EXCEEDANCE	C	EK	V Marife Contraction		Confirm receipt of notification of failure in writing Notify the Contractor Ensure remedial measures property implemented		Confirm receipt of notification of failure in writing Notify the Contractor Ensure remedial measures properly implemented
EVENT/ACTION PLAN FOR AIR QUALITY EXCEEDANCE	ACTION	IC(E)	ACTION LEVEL	Check monitoring data submitted by the E. I	Check monitoring data submitted by the ET Leader Check the Contractor's working method Discuss with ET and Contractor on possible remedial measures Advise the ER on the effectiveness of the proposed remedial measures Supervise implementation of remedial measures measures	IMITIEVEL	1. Check monitoring data submitted by the ET Leader 2. Check Contractor's working method 3. Discuss with ET and Contractor on possible memedial measures 4. Advise the ER on the effectiveness of the proposed remedial measures 5. Supervise implementation of remedial measures
EVI		ET Leader		Identify source, investigate the causes of exceedance and propose remedial measures Inform ER, IC(E) and Contractor Repeat measurement to confirm finding Increase monitoring frequency to dally	1. Identify source, investigate the causes of exceedance and propose remedial measures 2. Inform IC(E) and Contractor 3. Repeat measurements to confirm finding 4. Increase monitoring frequency to daily 5. Discuss with IC(E) and Contractor on remedial actions 6. If exceedance confinues, arrange meeting with IC(E) and ER. 7. If exceedance stops, cease additional	monitoring	I. Identify source, investigate the causes of exceedance and propose remedial measures. Inform ER, Contractor and EPD 3. Repeat measurement to confirm finding 4. Increase monitoring frequency to daily 5. Assess the effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results.
EVENT				1. Exceedance for one sample	2. Exceedance for two or more consecutive samples		1. Exceedance for one sample



EVENT/ACTION PLAN FOR AIR QUALITY EXCEEDANCE ACTION	ET Leader (C(E) ER Contractor	Exceedance 1. Identify source, investigate the causes of exceedance and propose remedial more of exceedance and propose remedial contractor or exceedance and propose remedial emedial actions of exceedance and propose remedial measures for two or measures and advise the ER accordingly and ER to Carry out analysis of contractor's working meeting with IC(E) and ER to Arrange meeting with IC(E) and ER to Arrange meeting actions and keep IC(E), EP and Contractor's and ER informed actions and keep IC(E), EP and ER informed of the results.
EVENT		2. Exceedar for two or more consecutions samples

1 }

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			· · · · · · · · · · · · · · · · · · ·		CO.N.	2440		u) and	100013			-					-	, umu				
		Contractor	Submit noise mitigation proposals to IC(E). Implement noise mitigation proposals.	Take immediate action to avoid		Subtribute to 10/E) within 3	acuting to lote, within 5	working days of notthcation.	implement the agreed	proposals.	Kesubmit proposals if problem			works as determined by the ER	until the exceedances is	abated.						
		4	-, - 4	~: 		7					4.		က်									
DISE EXCEEDANCE		ER	Confirm receipt of notification of failure in writing. Notify the Contractor. Require the Contractor to propose remedial measures for the analysed noise problem. Ensure remedial measures are properly implemented.	Confirm receipt of notification of	railure in whiling.	Nouny the Contractor.	Require the Contractor to propose	remedial measures for the	analysed noise problem.	Ensure remedial measures are	properly implemented.	if exceedances continue, consider	what activity of the work is	responsible and instruct the	Contractor to stop that activity of	work until the exceedances is	abated.					
S NC	z		+ 4 d m	-		10	oj.			4.		5										
EVENT/ACTION PLAN FOR NOISE EXCEEDANCE	ACTION	IC(E)	Review the analysed results submitted by the ET. Review the proposed remedial measures by the Contractor and advise the ER accordingly. Supervise the implementation of remedial measures.	Discuss amongst the ER, the ET	Leader and the Contractor on the	potential remedial actions.	Keview the Contractor's remedial	actions whenever necessary to	assure their effectiveness and	advise the ER accordingly.	Supervise the implementation of	remediai measures.										
			+ 2 %	-:			7				က											
		ET Leader	Notify the IC(E) and the Contractor. Carry out investigation. Report the results of investigation to the IC(E) and the Contractor. Discuss with the Contractor and formulate remedial measures. Increase monitoring frequency to check mitigation effectiveness	I. Notify the IC(E), the ER, the EPD		2. Identify source.	Repeat measurement to contirm	findings.	Increase monitoring frequency.	Carry out analysis of Contractor's	working procedures to determine	possible mitigation to be		Inform the IC(E), the ER and the	EPD the causes & actions taken for		Assess effectiveness of	Contractor's remedial actions and	keep the IC(E), the EPD and the	ER informed of the	If exceedance due to the	construction works stops, cease
-	-	L.	- (1 t) 4 t)	-			. ,		-	**/			-		×EC			•		-		
EVENT	1		Action Level	Limit	Leve	voi one	ar res-	ouns es	moderate	Delived			Obelber	4				-	·			



	21		Check monitoring data submitted by ET	Confirm ET assessment if	exceedance is due / not due	orks	Discuss with E.1, En. and	St	Review contractor's	n measures	whenever necessary to	ensure their effectiveness	and advise the ER	Se the	implementation of mitigation				***************************************			
		Particular Communication Commu	Check monitoring submitted by ET	2. Confirm	exceeda		 Uiscuss Contract 	measures	4. Review	mitigatio	whenev	eusme	and adv	Supervise the		measures						
EVENT AND ACTION PLAN FOR WATER QUALITY EXCEEDANCE			1. Notify EPD and other relevant	governmental agencies in within 24 hours of the	Identification of the exceedance	2. Discuss with IEC, ET and	Contractor on the proposed	mingation measures,	remedial measures for the	analysed problem if related to the	construction works	4. Ensure remedial measures are	properly implemented	5. Assess the effectiveness of the	Chingauor measure			- AMPAN				
AND ACTION PLAN FOR WA	ACTION	Confractor	1. Notify the ER and IEC in writing	within 24 hours of identification of	exceedance	Check all plant and equipment	4. Submit investigation report to IEC	and ER within 3 working days of	the identification of an		5. Consider changes of working	the construction works	6. Discuss with ET, IEC and ER and		IEC and ER if exceedance is due	to the construction works within 4	working days of identification of	7. Implement the agreed mitigation	measures within reasonable time	scale		
EVENT			1 Identify source(s) of impact;	2. Repeat in-situ measurement to	confirm findings;	3. Notify Contractor in writing within	24 nours of definitional of the	4. Check monitoring data, all plant,	equipment and Contractor's	working methods;	5. Carry out investigation		to the Contractor within 3 working	exceedance and advise	contractor if exceedance is due to		7. Discuss mitigation measures with	to the construction works within 4	working days	Repeat measurement on next day	of exceedance if exceedance is	due to the construction works
Event			Action love	being exceeded	by one	sampling day	Question 1								**اسباندان	ng se		· Person			±10±4¥	



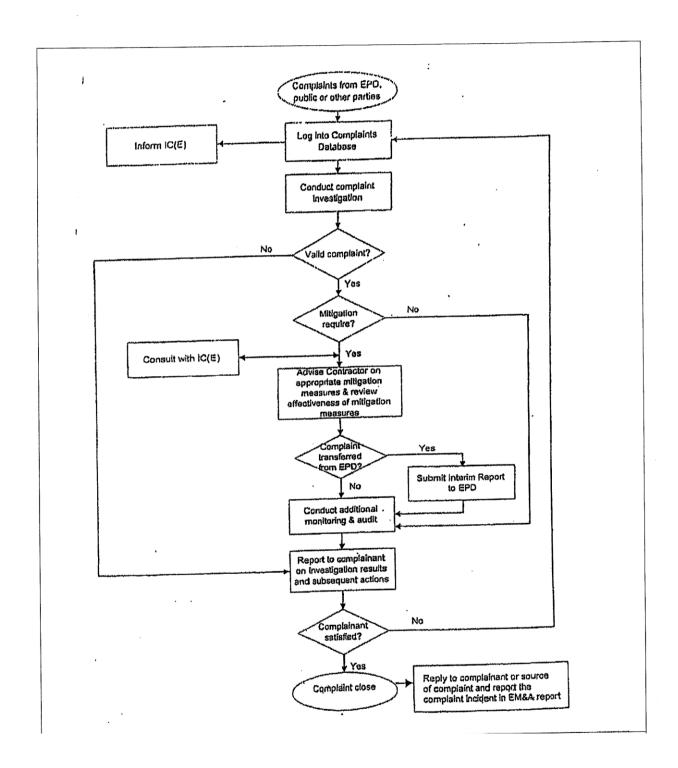
Event			E	EVENT AND ACTION PLAN FOR WATER QUALITY	<u></u>	R WATER QUALITY		
				ACTION	z			
	ŀ	ET Leader		Contractor		ER	Cattao	IEC
Action level	-	Identify	<u>-</u>	Notify IEC and ER in writing	-	Notify EPD and other relevant	÷	Check monitoring data
heind	0		_	within 24 hours of		governmental agencies in		submitted by E1
exceeded by	i	to confir		identification of exceedance		writing within 24 hours of the	N.	Confirm El assessment
more than one	~			Rectify unacceptable practice;		identification of the		if exceedance is due /
appropriation	<u>;</u>	-	~	Check all plant and		exceedance		not due to the works
consting days		identification	_	equipment	7	Discuss with IEC, ET and	က	Discuss with ET, ER and
sampling days	4		4.	Consider changes of working		Contractor on the proposed		Confractor on the
	:		_	methods:		mitigation measures;		mitigation measures.
		Contractor's working methods:	ιņ	Submit the results of the	က	Require contractor to propose	4.	Review contractor's
	ĸ			investigation to IEC and ER		remedial measures for the		mitigation measures
	j «			within 3 working days of the		analysed problem if related to		whenever necessary to
A. Carrier				identification of an		the construction works		ensure their
wconstraint.		within 3 working days of		exceedance	4	Ensure remedial measures		effectiveness and advise
		identification of exceedance	6	Discuss with ET, IEC and ER		are properly implemented		
		and advise contractor if		and propose mitigation		Assess the effectiveness of	က်	-
		exceedance is due to		measures to IEC and ER		the mitigation measure		of the implemented
		contractor's construction		within 4 working days of				mingation measures.
okupani.		works		identification of an				
	۲.	. Discuss mitigation measures		exceedance				
		with IEC and Contractor within	۲.	Implement the agreed				
		4 working of identification of		mitigation measures within				
		an exceedance		reasonable time scale				
	<u></u>	. Ensure mitigation measures						
naco-tenta		are implemented;						
	တ်							
octor.		monitoring frequency to daily;						
	_	 Repeat measurement on next 						
	_	day of exceedance.					_	

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	CH		Check monitoring data			if exceedance is due /	not due to the works		Contractor on the	mitigation measures.	Review proposals on	mitigation measures	submitted by Contractor	and advise the FR	accordingly		-	militation measures	oo in constitution of the												
Μ̈́		_	÷		4			લ			4	-				u	<u>-</u>														1
EVENT AND ACTION PLAN FOR WATER QUALITY EXCEEDANCE		ER	 Notify EPD and other relevant 	governmental agencies in	writing within 24 hours of	identification of exceedance	Discuss with IEC, ET and	Contractor on the proposed	mitigation measures;	3 Request Contractor to critically		A Engline remedial measures			5. Assess me enecuveness of	the implemented mingation	measures.				- Second Address						•				
AND ACTION PLAN FOR WA	ACTION	Contractor	1 Notify IEC and ER in writing:	within 24 hours of the	identification of the	exceedance		2. Check all plant and	,	Consider changes of working			5. Submit the results of the	investigation to IEC and EK	within 3 working days of the	identification of an	exceedance	6. Discuss with ET, IEC and ER	and propose mitigation	measures to IEC and EK	within 4 working days of the	identification of an	7 Implement the agreed	mitigation measures within	reasonable time scale						
EVENT		ET Leader		to confirm findings.	14224	Z. Identily source(s) of impact	3. Notify Contractor in withing	Within 24 nours of	identification of title		4. Check monitoring data, an	plant, equipment and	Contractor's working methods;	5. Carry out investigation	6. Report the results of		within 3 working days of	identification of exceedance	and advise contractor if	exceedance is due to	contractor's construction	•	7. Discuss mitigation measures	with IEC, Ex ald Collington	identification of an	exceedance	8. Ensure mitigation measures	are implemented;	Increase the monitoring	frequency to daily until no	exceedance of Limit Level.
Event				Limit level	peing 1.	exceeded by	one sampling	day									ظذيوو		COLUMN TO SERVICE STATE OF THE	سابادين	и ленти	₩ wetto		ONCHOUSE OF		***************************************	Darseas	0-1-11			



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		EC	1. Check monitoring data	Submitted by E1	2. Confirm E1 assessment	if exceedance is one?		3. Discuss with ER, E1 and	Contractor on the	mingation measures.	4. Keview proposals on	mitigation measures	submitted by Contractor	and advise the ER	accordingly.	Assess the effectiveness	of the implemented	mitigation measures.												
2	ŀ	1								<u>-</u> -									1	ğ										Charles
ER QUALITY EXCEEDAN		ER	Notify EPD and other relevant	governmental agencies in	writing within 24 hours of	identification of exceedance	Discuss with IEC, ET and	Contractor on the proposed	mitigation measures;	Request Contractor to critically	review the working methods;	Ensure remedial measures	are properly implemented	Assess the effectiveness of	the implemented mitigation	measures:			Hecessaly, are contactor to	SIOW DOWN OF 10 SIOU AIL OF PART	of the marine work until no	exceedance of Limit Level.								
ATE	z		<u>+</u>			,	7			က်		6		4.			u	;												4
EVENT AND ACTION PLAN FOR WATER QUALITY EXCEEDANCE	ACTION	Contractor	 Notify ER and IEC in writing 	within 24 hours of the	identification of the	exceedance and		Check all plant and		Consider changes of working	methods:	Submit the results of the		within 3 working days of the	identification of an		-	5. Discuss with E1, IEC and EN	and propose mitgation	measures to IEC and EK	within 4 working days;	Implement the agreed	mitigation measures within	reasonable time scale	7. As directed by the Engineer,	to slow down or to stop all or	part of the marine work or	construction actives.		
N.		-										ÿ	 }			3							s,	ŗ.	¢n.				ğ	
EV		ET leader	Repeat in-situ measurement	to confirm findings:				identification of the	exceedance			Contractor's working methods:		5. Cally out lives ugators		investigation to the confidence	within 3 working days or	identification of exceedance	and advise confractor if	exceedance is due to	contractor's construction	works	7. Discuss mitigation measures		Ensure mitigation measures		Increase the monitoring	frequency to daily until no	exceedance of Limit Level for	two consecutive days.
			-	:	•	j r				4			L	0 0	_															
Event			l imit I evel	Little Level	Deling	exceeded by	HOTE BIRTHE	coi isecutive	sampling days												***			e e e e e e e e e e e e e e e e e e e		San	e ke és			





Appendix G Work Programme

Item	Description	From	То	Jan-20	Feb-20
1	Section 1B	1-Sep-19	1-Oct-19		
1.1	Operation of Fill Bank, surveillance system and tipping halls	1-Sep-19	1-Oct-19		
1.2	Operation of crushing plants	1-Sep-19	1-Oct-19		
1.3	Operation of the existing and expanded dewatering plants	1-Sep-19	1-Oct-19		
1.4	Collection and delivery of Public Fill from CWPFBP and MWPFRF to TKOFB	1-Sep-19	1-Oct-19		
1.5	Breaking up the incoming precast concrete units	1-Sep-19	1-Oct-19		
1.6	Carry out repair works for damages caused by Super Typhoon	1-Sep-19	1-Oct-19		
1.7	Carry out preliminary sorting on Public Fill for Three Runway System (3RS) project	1-Sep-19	1-Oct-19		
2	Section 2B	1-Sep-19	1-Oct-19		
2.1	Operation of Fill Bank, surveillance system and tipping halls	1-Sep-19	1-Oct-19		
2.2	Breaking up the incoming precast concrete units	1-Sep-19	1-Oct-19		
2.3	Operation of glass cullet storage compartment at Portion B7	1-Sep-19	1-Oct-19		
2.4	Carry out preliminary sorting on Public Fill for Three Runway System (3RS) project	1-Sep-19	1-Oct-19		
5	Section 4A	1-Sep-19	30-Nov-19		
5.1	Collection and delivery of Public Fill to the Designated Reclamation Sites in the Mainland	1-Sep-19	30-Nov-19		

China Harbour - Zhen Hua Joint Venture Contract No. CV/2015/07 Handling of Surplus Public Fill (2016 -2018)

Three Months Rolling Programme for the Period from 1-March-2020 to 31-May-2020 for Supplementary Agreement No.1 of Main Contract CV/2015/07

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Item	Description	From	То	Mar-20	Apr-20	May-20
-				1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
1	Section 1B	1-Mar-20	31-May-20			
1.1	Operation of Fill Bank, surveillance system and tipping halls	1-Mar-20	31-May-20		Albert Market and the second of the second o	
1.2	Operation of crushing plants	1-Mar-20	31-May-20			
1.3	Operation of the existing and expanded dewatering plants	1-Mar-20	31-May-20			
1.4	Collection and delivery of Public Fill from CWPFBP and MWPFRF to TKOFB	1-Mar-20	31-May-20			
1.5	Breaking up the incoming precast concrete units	1-Mar-20	31-May-20			
1.6	Carry out repair works for damages caused by Super Typhoon	1-Mar-20	31-May-20			
1.7	Carry out preliminary sorting on Public Fill for Three Runway System (3RS) project	1-Mar-20	31-May-20			
2	Section 2B	1-Mar-20	31-May-20			
2.1	Operation of Fill Bank, surveillance system and tipping halls	1-Mar-20	31-May-20			
2.2	Breaking up the incoming precast concrete units	1-Mar-20	31-May-20			
2.3	Operation of glass cullet storage compartment at Portion B7	1-Mar-20	31-May-20			
2.4	Carry out preliminary sorting on Public Fill for Three Runway System (3RS) project	1-Mar-20	31-May-20			
5	Section 4A	1-Mar-20	31-May-20			
5.1	Collection and delivery of Public Fill to the Designated Reclamation Sites in the Mainland	1-Mar-20	31-May-20			

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Appendix H

Implementation Schedule of Environmental Mitigation Measures (EMIS)

東業德勤測試顧問 ETS-TESTCONSULT

Environmental Mitigation Implementation Schedule

	Location		Implementa	tion Status	
Environmental Protection Measures		Implemented	Partially implemented	Not implemented	Not Applicable
Air Quality					
Dust control / mitigation measures shall be provided to prevent dust nuisance.	All areas	V			
Water sprays shall be provided and used to dampen materials.	All areas	V			
All stockpile of aggregate or spoil should be enclosed or covered and water applied in dry or windy condition.	All areas	V			
 Any vehicle with open load carrying area used for moving materials which has the potential to create dust shall have properly fitting side and tail boards. Material having the potential to create dust shall not be loaded to a level higher than the side and tail boards, and shall be covered by a clean tarpaulin. 	All areas	V			
Unpaved areas should be watered regularly to avoid dust generation.	Site Egress	√			
■ The designated site main haul road shall be paved or regular watering.	All haul roads	\checkmark			
The public road around the site entrance should be kept clean and free from dust.	All areas	\checkmark			
Wheel washing facilities including high-pressure water jet shall be provided at the entrance of work site and and wash-water shall have sand and silt settled out or removed before being discharged into storm drains.	Site Egress	√			
• Every vehicle shall be washed to remove any dusty materials from its body and wheels before leaving the fill bank.	Site Egress	$\sqrt{}$			
■ The temporary slope surfaces shall be covered with impermeable sheet or sprayed with water.	All areas	$\sqrt{}$			
 Vehicle and equipment should be switched off while not in use. 	All areas	\checkmark			
 All plant and equipment should be well maintained e.g. without black smoke emission. 	All areas	\checkmark			
Open burning should be prohibited.	All areas	√			
 Approval or exemption Non-road Mobile Machinery (NRMM) labels should be painted or securely fixed on regulated machines and non-road vehicles at a conspicuous position according to the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation (APCO Cap.311). 	All areas	V			
Noise Impact					
 The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted. 	All areas	V			
Only well maintained plant should be operated on-site and plant should be serviced regularly during the site works.	All areas	$\sqrt{}$			
Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	All areas	V			
Air compressors and hand held breakers should have noise labels.	All areas	V			
 Machines and plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum. 	All areas	√			
Noisy equipment and mobile plant shall always be site away from NSRs.	All areas	√			

Remark: $\sqrt{\ }$ = Implemented,

 ∇ = Partially Implemented

X = Not Implemented

N/A = Not Applicable



		Location	Implementati	on Status	Implementation Status			
	Environmental Protection Measures		Implemented	Partially implemented	Not implemented	Not Applicable		
W	ater Quality							
•	The existing / realigned intercepting channels and the sand / silt removal facilities shall be used and maintained.	All areas		√				
•	Temporary intercepting drains should be used at the stockpiling area to divert polluted stormwater to the intercepting channels. Earth bunds and sand bay barriers shall be used to assist the diversion of polluted stormwater to the intercepting channels.	All areas	√					
•	The stormwater intercepting system shall be effective to collect of runoff and remove suspended solids before discharge.	All areas	\checkmark					
•	The material shall be properly covered to prevent washed away especially before rainstorm.	All areas	\checkmark					
•	Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.	All areas	√					
•	The temporary slope surfaces shall be covered with impermeable sheet or sprayed with water.	Temporary Slopes	√					
•	Existing and newly constructed Catchpits, sand and silt removal facilities and intercepting channels shall be maintained, and the deposited silt and grit shall be removed weekly and on a need basis especially at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.	All areas	V					
•	A wheel washing bay shall be provided at the site exit and wash-water shall have sand and silt settled out or removed before being discharged into storm drains.	Wheel Washing facility	√					
•	The section of construction road between wheel washing bay and the public road shall be paved with concrete, bituminous materials or hardcores to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.	Site Egress	$\sqrt{}$					
•	Sewage from toilets shall be discharged in to a foul sewer, or chemical toilets shall be provided.	Site Office	\checkmark					
•	The chemical toilets (if use) shall be provided by a licensed contractor, who will be responsible for disposal and maintenance of these facilities.	All areas	√					
•	Tipping halls enclosed with top and 3-side to prevent spillage of material into marine water.	All areas	\checkmark					
•	Adequate environmental control measures shall be provided to prevent / avoid dropping of fill material into the sea during the transfer.	Along the seafront	√					
•	A waste collection vessel shall be deployed to remove floating debris.	Along the seafront	√					
La	ndscape and Visual							
•	The maximum stockpiling height at the fill bank shall be limited to a maximum of +40mPD.	All areas	√					
•	Surface of outer slopes of the Fill Bank shall preferably be hydroseeded.	Completed slopes	$\sqrt{}$					
•	Stockpile of public fill shall be removed in a sequence to allow the outer hydrseeded to be removed later than other portions as far as practicable.	Completed slopes	√					
•	Casuarina equisetifolia were planted as buffer tree along the northern perimeter of the Site. The height of Casuarina equisetifolia was maintained at least 3m above soil level.	Site boundary	V					
•	Lighting shall be set to minimise night-time glare.	All areas	√					
W	aste Management							
Co	onstruction Waste Management							
•	Relevant licence / permits for disposal of construction waste or excavated materials available for inspection.	All areas	√					



		Location	Implementation Status				
	Environmental Protection Measures		Implemented	Partially implemented	Not implemented	Not Applicable	
•	Excavated material to be generated from construction works to be re-used on-site as far as practicable to reduce off-site disposal.	All areas	√				
•	Mud and debris should be removed from waterworks access roads and associated drainage systems.	All areas	√				
•	Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal.	All areas	√				
•	Prior to disposal of C&D waste, recyclable materials should be salvaged for reuse (such as wood and metal) and inert waste utilised as public fill to minimise the quantity of waste to be disposed of to landfill.	All areas	√				
•	In order to monitor the disposal of C&D material and solid wastes at public filling areas and landfills, and to control fly-tipping, a trip-ticket system should be included as one of the contractual requirements.	All areas	√				
•	Any soil contaminated with chemicals/oils shall be removed from site and the void created shall be filled with suitable materials.	All areas	$\sqrt{}$				
С	nemical Waste Management						
It is required to register as a chemical waste producer if chemical wastes would be produced from the site activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.			V				
After use, chemical wastes (e.g. cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.			√				
•	Spent chemicals should be stored and collected by an approved operator for disposal at the Chemical Waste Treatment Facility or other licensed facility in accordance with the Chemical Waste (General) Regulation.	Waste Storage Area	√				
•	Chemical wastes should be separated for special handling and appropriate treatment at the Chemical Waste Treatment Facility.	Waste Storage Area	$\sqrt{}$				
•	Chemical wastes including waste oil should be stored properly in designated areas, e.g. chemical waste storage area.	Waste Storage Area	√				
•	The designated chemical waste storage area should only be used for storing chemical wastes.	Waste Storage Area	√				
T	ne set-up of chemical waste storage area should						
•	Be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition.	Waste Storage Area	V				
•	Be enclosed on at least 3 sides and securely closed.	Waste Storage Area	√				
•	Have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area, whichever is the greatest.	Waste Storage Area	√				
•	Have adequate ventilation.	Waste Storage Area	√				
•	Be covered to prevent rainfall entering (water collected within the bund must be tested and disposal as chemical waste if necessary).	Waste Storage Area	V				
•	Be arranged so that incompatible materials are adequately separated.	Waste Storage Area	V				
•	Warning panels should be displayed at the waste storage area.	Waste Storage Area	√				



			Implementation	on Status		
	Environmental Protection Measures		Implemented	Partially implemented	Not implemented	Not Applicable
•	Waste storage area should be cleaned and maintained regularly.	Waste Storage Area	√			
•	Chemical waste should be transported by a registered chemical waste collector to a facility licensed to receive chemical waste.	All areas	$\sqrt{}$			
•	All generators, fuel and oil storage should be within bundle areas.	All areas	$\sqrt{}$			
•	Oil leakage from machinery, vehicle and plant should be prevented.	All areas		\checkmark		
•	In the event of chemical waste / dangerous goods / chemicals spillage or leakage, the procedures as outlined in the Spillage Response Plan should be followed.	All areas	V			
•	The dangerous goods / chemical spillage or leakage procedures (including equipments) should be in place.	All areas	\checkmark			
G	ood Site Practices					
•	Nomination of approved personnel, such as site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site.	All areas	√			
•	Training of site personnel in proper waste management and chemical handling procedures should be provided.	All areas	√			
•	Good site practices should be adopted to clean the rubbish and litter on a regular basis so as to prevent the rubbish and litter from dropping into the nearby environment.	All areas		V		
•	Proper storage and site practices to minimise the potential for damage or contamination of construction materials.	All areas	\checkmark			
•	The Environmental Permit should be displaced conspicuously on site.	Site Entrance	√			
•	Construction noise permits should be posted at site entrance or available for site inspection.	Site Entrance				V
•	Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.	All areas	√			
•	Chemical storage area provided with lock and located on sealed areas.	Chemical Storage Area	√			
•	All chemicals should be placed at the banded area with adequate band capacity (>110% of largest tank).	Chemical Storage Area	V			
•	Any unused chemicals or those with remaining functional capacity should be recycled.	All areas	$\sqrt{}$			
•	Regular cleaning and maintenance programme for waste storage area, drainage systems, silt traps, sumps and oil interceptors.	All areas	$\sqrt{}$			
•	To encourage collection of aluminium cans by individual collectors, separate labelled bins should be provided to segregate this waste from other general refuse generated by the workforce.	All areas	√			
•	A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be used, e.g. trip ticket system for chemical waste disposal. Quantities could be determined by weighing each load or other suitable methods.	All areas	√			
•	A collection area should be provided where waste can be stored and loaded prior to removal from site. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material. If an open area is unavoidable for the storage or loading/unloading of wastes, then the area should be bunded and all the polluted surface run-off collected within this area should be diverted into wastewater treatment system.	All areas	٧			
•	Remove wastes in a timely manner.	All areas	\checkmark			



Appendix I

Statistical Analysis of the Trend of Suspended Solids in the Quarter



Statistical Analysis of the Trend of Suspended Solids

For Mid-Flood Tide

Station: TM-FM1

t-test

Group Name	N	Missing	Mean	Std Dev	SE
130%	12	0	5.9733	1.3518	0.3902
Baseline					
Mean					
Quarterly	36	0	7.1144	2.6195	0.4366
Mean					

Result:

Probability that two variances are equal (f-test) = 0.0013

Difference between means = -1.1411 (95% CI : -2.3199 < Diff < 0.0377)

t-value of difference = -1.4392 (46 degrees of freedom)

Calculated t-value < Critical t-value

Conclusion:

There is no statistically significant difference between the groups.

Station: TM-FM2

t-test

Group Name	N	Missing	Mean	Std Dev	SE
130% Baseline Mean	12	0	6.0267	1.1748	0.3391
Quarterly Mean	36	0	6.8843	2.5307	0.4218

Result:

Probability that two variances are equal (f-test) = 0.0002

Difference between means = -0.8576 (95% CI : -1.9470 < Diff < 0.2318)

t-value of difference = -1.1279 (46 degrees of freedom)

Calculated t-value < Critical t-value

Conclusion:



Statistical Analysis of the Trend of Suspended Solids

For Mid-Flood Tide

Station: TM-FC1

t-test

Group Name	N	Missing	Mean	Std Dev	SE
130% Baseline Mean	12	0	6.6942	1.8839	0.5438
Quarterly Mean	36	0	7.4889	3.0895	0.5149

Result:

Probability that two variances are equal (f-test) = 0.0128

Difference between means = -0.7947 (95% CI : -1.9470 < Diff < 0.2318)

t-value of difference = -1.1279 (46 degrees of freedom)

Calculated t-value < Critical t-value

Conclusion:

There is no statistically significant difference between the groups.

Station: TM-FC2

t-test

Group Name	N	Missing	Mean	Std Dev	SE
130% Baseline Mean	12	0	6.3067	1.8674	0.5391
Quarterly Mean	36	0	7.7787	2.6248	0.4375

Result:

Probability that two variances are equal (f-test) = 0.0623

Difference between means = -1.4720 (95% CI : -2.8989 < Diff < -0.0451)

t-value of difference = -2.1204 (26 degrees of freedom)

Calculated t-value < Critical t-value

Conclusion:



Statistical Analysis of the Trend of Suspended Solids For Mid-Ebb Tide

Station: TM-FM1

t-test

Group Name	N	Missing	Mean	Std Dev	SE
130% Baseline Mean	12	0	7.0008	1.6394	0.4733
Quarterly Mean	36	0	6.0315	3.3035	0.5506

Result:

Probability that two variances are equal (f-test) = 0.0034

Difference between means = 0.9693 (95% CI : -0.4921 < Diff < 2.4307)

t-value of difference = 0.9722 (46 degrees of freedom)

Calculated t-value < Critical t-value

Conclusion:

There is no statistically significant difference between the groups.

Station: TM-FM2

t-test

Group Name	N	Missing	Mean	Std Dev	SE
130% Baseline Mean	12	0	7.2758	1.5293	0.4415
Quarterly Mean	36	0	6.4097	3.7175	0.6196

Result:

Probability that two variances are equal (f-test) = 0.0001

Difference between means =0.8661 (95% CI: -0.6653 < Diff < 2.3575)

t-value of difference = 0.7808 (46 degrees of freedom)

Calculated t-value < Critical t-value

Conclusion:



Statistical Analysis of the Trend of Suspended Solids

For Mid-Ebb Tide

Station: TM-FC1

t-test

Group Name	N	Missing	Mean	Std Dev	SE
130% Baseline Mean	12	0	7.0008	1.6394	0.4733
Quarterly Mean	36	0	7.1597	3.7894	0.6316

Result:

Probability that two variances are equal (f-test) = 0.0001

Difference between means = 0.7892 (95% CI : -1.7475 < Diff < 1.4297)

t-value of difference =-0.1402 (46 degrees of freedom)

Calculated t-value < Critical t-value

Conclusion:

There is no statistically significant difference between the groups.

Station: TM-FC2

t-test

Group Name	N	Missing	Mean	Std Dev	SE
130% Baseline Mean	12	0	7.2758	1.5293	0.4415
Quarterly Mean	36	0	7.8069	3.8719	0.6453

Result:

Probability that two variances are equal (f-test) = 0.0001

Difference between means = -0.5311 (95% CI : -2.105 < Diff < 1.0428)

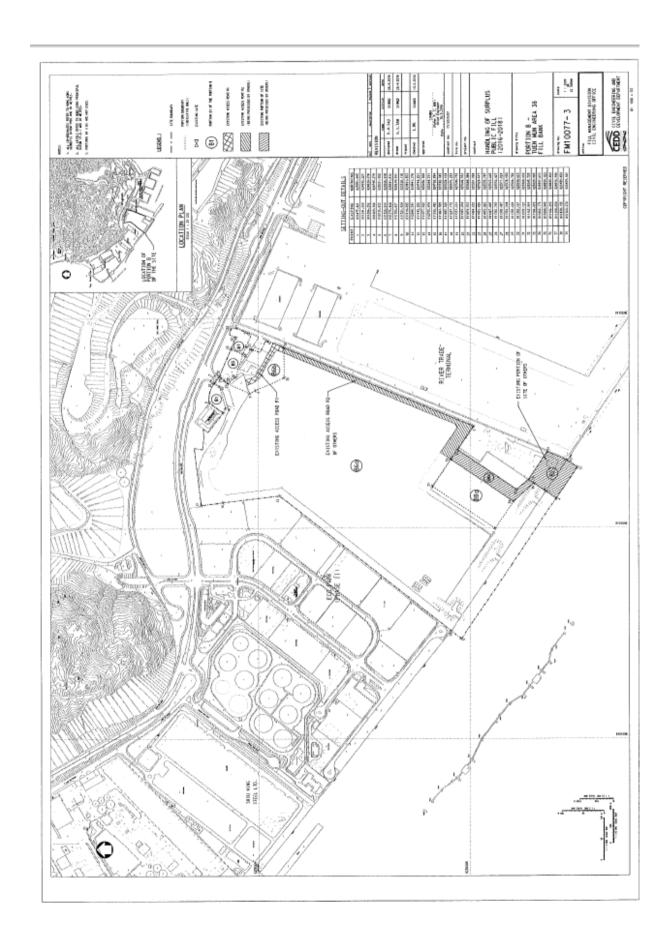
t-value of difference = -0.4606 (46 degrees of freedom)

Calculated t-value < Critical t-value

Conclusion:



Appendix J Site General Layout plan





Appendix K Weather Condition

Daily Extract of Meteorological Observations, February 2020 - Tuen Mun

	Mean Pressure (hPa)	Air Temperature			Mean Dew Point	Mean Relative Humidity	Total Rainfall (mm)	Prevailing Wind Direction	Mean Wind Speed
Day		Absolute Daily Max (deg. C)	Mean (deg. C)	Absolute Daily Min (deg. C)	(deg. C)	(%)		(degrees)	(km/h)
1	***	19.0#	15.2	11.0#	9	67	0	140	7
2	***	20.2#	17.4	14.7#	12.7	74	0	160	5.2
3	***	22.9#	18.2	15.7#	14.2	78	1	280	4.7
4	***	18.4#	16.5	14.1#	14.3	87	6	20	5.9
5	***	18.6#	17.2	15.6#	14.3	83	1	20	5.5
6	***	20.1#	17.7	15.8#	13.3	76	0	160	6.8
7	***	21.3	18.6	17.3	15.1	80	0	20	4.8
8	***	18.6#	16.7	14.6#	11.9	74	0	20	7.7
9	***	18.0#	16	14.5#	10.2	68	0	30	7.1
10	***	18.0#	16.3	14.8#	11.2	72	0	20	5.1
11	***	20.2#	17.6	16.4#	15.3	87	2	20	3.9
12	***	24.8#	20.2	18.0#	18.5	91	0	160	4.5
13	***	20.7#	19.3	18.2#	18.5	95	15	260	3.9
14	***	24.2#	21.2	19.6#	20	93	14.5	150	8.1
15	***	23.9#	21.8	19.7#	20.7	93	0.5	150	12.3
16	***	19.6#	13.1	10.2#	9.7	81	9	350	11.9
17	***	16.8#	12.7	9.2#	0.9	46	0	20	12.1
18	***	18.4#	13.8	10.5#	2.4	47	0	30	9.3
19	***	19.3#	16.2	13.0#	8.8	62	0	150	4.4
20	***	21.2#	17.1	13.4#	9.8	63	0	20	3.3
21	***	23.1	18.2	14.3	12.4	70	0	20	4.9
22	***	25.9#	19.7	14.8#	14.1	72	0	350	4.8
23	***	25.7#	20.2	17.1#	13.5	66	0	160	7.2
24	***	23.5	20.4	17.8	14.8	71	0	150	10.8
25	***	27.1	22.1	18.2	18.8	82	0	160	3.4
26	***	28.3#	23.2	19.2#	19.2	80	0	160	4.1
27	***	25.3#	21.4	19.5#	17.3	78	0	140	9.8
28	***	25.1#	20.8	18.2#	16.3	76	0	160	6.6
29	***	26.9#	22.3	19.0#	18.4	79	0	160	6

^{***} unavailable

Rainfall measured in increment of 0.5 mm. Amount of < 0.5 mm cannot be detected

[#] data incomplete

Daily Extract of Meteorological Observations, March 2020 - Tuen Mun

	Mean	DATI det of	ivieteor o	Mean	Total	Prevailing	Mean		
				Mean Dew	Relative	Rainfall	Wind	Wind	
		Air Temperature							
-	(hPa)				Point	Humidity	(mm)	Direction	Speed
Day		Absolute	Mean	Absolute	(deg. C)	(%)		(degrees)	(km/h)
		Daily	(deg. C)	Daily					
		Max		Min					
	***	(deg. C)		(deg. C)					
1		27.4#	22.6	19.4#	19.2	82	0	150	3.9
2	***	22.5	20.6	19.2	16.4	77	0	140	8.8
3	***	21.4	19.9	18.5	15.7	77	0	160	8.6
4	***	22.2	19.7	17.6	16.5	82	0.5	20	5.7
5	***	20.1	17.7	15	14.9	84	0.5	20	6.2
6	***	20.4	18.6	16.9	14.6	77	0	160	7.7
7	***	24.3	21.3	19.2	18.9	87	0	150	8.2
8	***	23.4	22.1	20.4	20.5	91	0	140	11
9	***	24.5	23	21.6	21.5	91	0.5	150	10.2
10	***	25.7	22.9	19.5	15.4	64	0	20	11
11	***	20.9	18.9	17.5	12.3	66	0	20	8.8
12	***	21.9	20.5	18.8	18.3	87	0	150	10.5
13	***	24.9	22.5	20.5	20.6	90	0	160	9.2
14	***	25.4	21.3	18.4	16	73	1.5	20	9.3
15	***	22.3	20	18.7	12.1	61	0	20	10.1
16	***	22.7	20.3	17.7	14.9	71	0	160	8.4
17	***	22.3	20.3	19.3	16.9	81	0	160	6.3
18	***	21.6	20	19	17.9	88	10.5	10	5.7
19	***	22.3	20.2	18.9	19	93	6	20	4.3
20	***	23	21	19.4	19.2	89	0.5	150	6.5
21	***	23.6	21.9	20.7	20.8	93	0	220	6.1
22	***	28.3	24.1	21.7	21.1	84	0	170	4.6
23	***	29.3	24.6	20.8	20.8	81	0	160	6.2
24	***	25.7	22.8	21.4	18.7	78	0	150	10.5
25	***	25.3	22.8	21.5	19.1	80	0	150	9.8
26	***	26.4	23.2	21.6	21.1	88	1	150	7.1
27	***	27.2	24	21.8	21.5	86	1.5	150	8.8
28	***	26.2	22.1	19	20.7	92	3	10	5.2
29	***	22.9	20.8	18.6	18.2	85	0	140	14
30	***	20.9	19.9	18.8	19.2	96	4	20	5
31	***	21	19.3	17.7	19	98	3.5	20	2.9

data incomplete

Rainfall measured in increment of 0.5 mm. Amount of < 0.5 mm cannot be detected

Daily Extract of Meteorological Observations , April 2020 - Tuen Mun

	Mean Pressure (hPa)	ure Air Temperature			Mean Dew Point	Mean Relative Humidity	Total Rainfall (mm)	Prevailing Wind Direction	Mean Wind Speed
Day		Absolute Daily Max (deg. C)	Mean (deg. C)	Absolute Daily Min (deg. C)	(deg. C)	(%)		(degrees)	(km/h)
1	***	20.1	18.8	17.6	16.7	88	0.5	20	7.5
2	***	21.7	20.7	19.5	17.5	82	0	160	8.4
3	***	22.7	20.7	18.9	18.3	86	1.5	150	8.8
4	***	23.1	20.3	19	18.6	90	4	20	5.4
5	***	19.1	17.4	16.1	16.5	95	5.5	20	6.1
6	***	17.1	16.3	15.6	15.8	97	28.5	20	4.2
7	***	21.6	18.5	16.4	15.6	83	0	20	5.3
8	***	23.6	20.4	18.5	14.1	69	0	160	5.8
9	***	25.5#	21.4	17.0#	13.3	61	0	160	6.8
10	***	24	21.5	18.4	14.3	65	0	160	8.4
11	***	24.4	22.4	20.5	20.4	88	2.5	160	5.8
12	***	24.2	20.4	17.7	9.3	53	0.5	360	11
13	***	24.1	19.6	15.8	3.7	36	0	20	11.4
14	***	23.2#	20	16.7#	11.7	59	0	160	5.1
15	***	26.3	21.3	16.3	14.2	66	0	160	5.4
16	***	26.6	22.2	17.4	17.9	78	0	140	7.5
17	***	27.6	23.6	20.5	19	76	0	160	8.3
18	***	27.6	23.7	21.1	20.1	81	0	160	7.8
19	***	28.7	25.1	22.3	21.9	83	0	160	6
20	***	29.5	25.9	23.3	22.7	84	0	150	6.4
21	***	29.1	26	24	23	84	0	140	11.5
22	***	24.9	22.6	18.5	20.3	87	10	140	9
23	***	21.8	20.1	18.6	18.4	90	1.5	20	5.6
24	***	20.2	18	16.7	15.7	87	2.5	20	9
25	***	22.2	19.4	16.8	16.4	84	0	20	4.9
26	***	27.3	22.3	18	17.5	76	0.5	20	3.8
27	***	27.6	23.4	19.8	16.2	65	0	160	4.2
28	***	27.8	23.7	20.9	14.1	56	0	150	9.8
29	***	27.7#	23.5	19.7#	17.9	71	0	160	7.8
30	***	29	24.1	20	17.6	68	0	150	8.3

data incomplete

Rainfall measured in increment of 0.5 mm. Amount of < 0.5 mm cannot be detected



Appendix L

Complaint Log



Complaint Log

Log Ref.	Location	Received Date	Details of Complaint	Investigation / Mitigation Action	Status
001	Lung Mun Road near Tuen Mun Area 38 Fill Bank	24 May 2017	One complaint received on 24 May 2017, which was forwarded to ET on 03 June 2017, from public against the rocks and debris deposited on the road surface along Lung Mun Road near Tuen Mun Area 38 Fill Bank. The complainant complained that waste generated caused an environmental nuisance.	Refer to the ET site investigation on 06 June 2017, the condition of Lung Mun Road near Tuen Mun Area 38 Fill Bank was found satisfactory. Details of Action(s) Taken by the Contactor: 1. Regular water spraying by water lorries is provided for road cleaning at Lung Mun Road; 2. Regular cleaning on Lung Mun Road and the access road at the site exit by road sweeper to remove mud and gravel is arranged four times on each working day; 3. Site vehicles are washed to remove any dusty materials from their bodies and wheels by using high pressure water jet manually at the entrance of work site before leaving; 4. Site vehicle for transporting materials are covered properly by using clean tarpaulin sheets; 5. Regular cleaning at the site haul road is provided to minimize the fugitive dust emission.	Closed

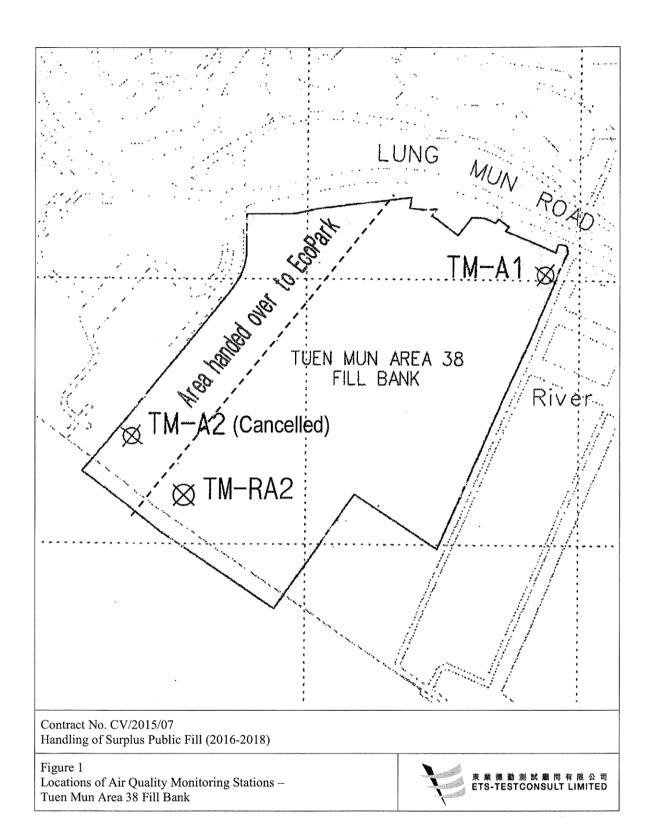


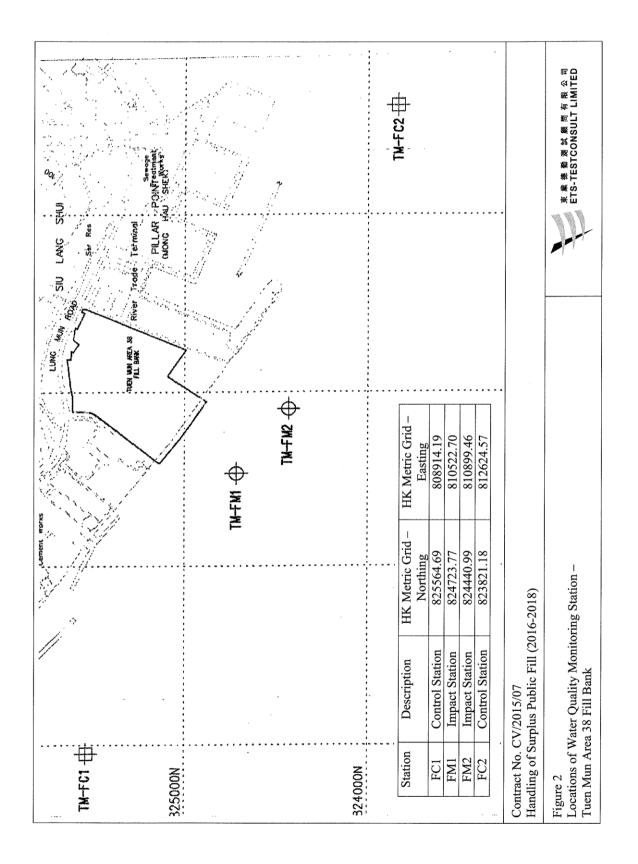
002	Lung Mun Road near Tuen Mun Area 38 Fill Bank	16 April 2018	One complaint received on 16 April 2018 from public and forwarded to ET by email at 10:51 on 25 May 2018. The complaint detail was"來往屯門第 38 區填料庫的龍門路沿路有很多泥頭車出入,泥頭會從車上掉至路面上,要求部門跟進及回覆。"	Refer to the ET site investigation on 26 May 2018, the condition of Lung Mun Road near Tuen Mun Area 38 Fill Bank was found satisfactory. Details of Action(s) Taken by the Contactor: 1.Regular cleaning on Lung Mun Road and the access road at the site exit by road sweeper to remove mud and gravel is arranged four times on each working day; 2. Regular water spraying by water lorries is provided for road cleaning at Lung Mun Road; 3.Site vehicles are washed to remove any dusty materials from their bodies and wheels by using high pressure water jet manually at the entrance of work site before leaving; 4. Site vehicles for transporting materials are covered properly by using clean tarpaulin sheets; 5.Regular cleaning at the site haul road is provided.	Closed
003	Lung Mun Road near Tuen Mun Area 38 Fill Bank	26 June 2018	One complaint received on 26 June 2018 from public and forwarded to ET by email at 13:58 on 03 July 2018. The complaint detail was" 當天水車於 6 時出動洗街,導致交通阻塞."	Refer to the ET site investigation on 07 July 2018, the condition of Lung Mun Road near Tuen Mun Area 38 Fill Bank was found satisfactory. Details of Action(s) Taken by the Contactor: 1. Improve the road washing plan to avoid washing in traffic peak peroid 2. Revised the road washing schedule as soon as possible once there is traffic jam	Closed

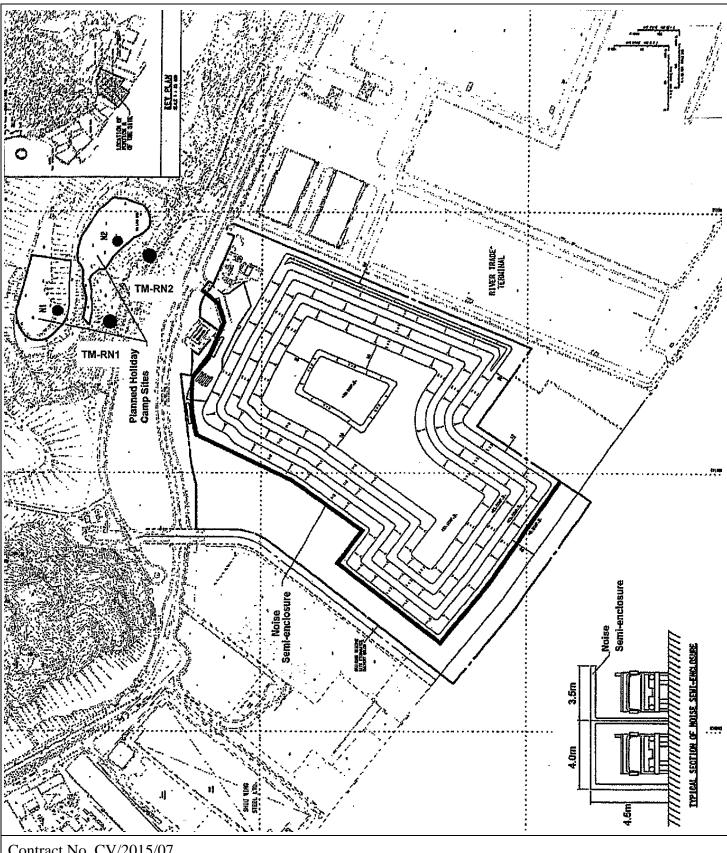


Figures









Contract No. CV/2015/07 Handling of Surplus Public Fill (2016 - 2018)

Figure 3 Locations of Noise Monitoring Stations – Tuen Mun Area 38 Fill Bank

