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32nd CONSOLIDATED MONTHLY **EM&A REPORT**

June 2019

Client	:	Civil Engineering and Development Department, HKSAR
EP No.	:	EP-337/2009 – New Distributor Roads Serving the Planned Kai Tak Development Area
Contract No.	:	KLN/2016/05 – Independent Environmental Checker for Contract No. KL/2015/02 Kai Tak Development – Stage 5A Infrastructure at Former North Apron Area
Report No.	:	0087/16/ED/0984

Prepared by	:	Wingo So	

Reviewed by 2 Calvin Leung

Certified by :

Colin Yung Independent Environmental Checker Fugro Technical Services Limited



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EXECUTIVE SUMMARY

- i. This is the 32nd Consolidated Monthly EM&A Report which summaries the EM&A works undertaken by respective contract under EP-337/2009 within the period between 1 June and 30 June 2019.
- ii. The EP-337/2009 relevant major construction activities undertaken in the reporting month are summarized as follow:

Contract No. KL/2012/03:

- Daily Cleaning;
- E&M Work, GRC coping, Landscape Work in PS2;
- Maintenance platform in DCS; and
- E&M Works, Scaffold Platform Installation in NPS.

Contract No. KL/2014/01:

- TTA implementation, junction improvement works at Shing Fung Road, Wang Chiu Road / Kai Cheung Road and Sheung Yee Road/Wang Chiu Road;
- Construction of box culvert and underpass;
- Construction of utilities trough at Kai Tak Bridge;
- Construction of pile caps, noise barrier footings and steel structures, outfalls, deck structure and columns;
- Laying of sewer, drainage and pavement;
- Erection of noise barrier steel structure and panels

Contract No. KL/2014/03:

- Excavation and laying of drainage pipe and manhole;
- Excavation and ELS construction.
- Construction of SUS structure;
- Construction of District Cooling System;
- Construction of Subway A; and
- Construction of road base and road pavement.

Contract No. KL/2015/02:

- Road reinstatement works at PERE W/B and implement stage 2 TTA at PERE E/B;
- Excavation works with ELS installation and footing works for traffic deck (stage 4-1) at SKLR playground;
- Structural works for subway construction (Bay 6);
- Structural works for cantilever beam of Pier S15C4;
- Drainage works at Retaining Wall S15;
- Preparation works for demolition of bridge K72;
- Construction of chain-link fence for land sale sites;
- DCS & Watermains works in Portion 1 Road D1;
- Watermains works in Portion 6; and
- Drainage and sewerage works in Road L7.



Breaches of the Action and Limit Levels

- iii. No Action / Limit Level exceedance was recorded for 24-hr TSP monitoring in the reporting month.
- iv. No Action / Limit Level exceedance was recorded for 1-hr TSP monitoring in the reporting month.
- v. No Action / Limit Level exceedance was recorded for noise monitoring in the reporting month.

Complaint, Notification of Summons and Successful Prosecution

vi. No complaint, notification of summons or prosecution was received in this reporting month.

Reporting Changes

vii. There was no reporting change in the reporting month.



Future Key Issues

Hong Kong.

viii. The potential environmental impacts for the coming month and the control measures are shown in **Table I**:

Table I Summary of Key Issues for the Coming Month and Control Measures

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Major Impact Prediction	Control Measures				
Contract No. KL/2012/03:					
Air quality impact (dust)	Covering stockpiles with tarpaulin or similar means;				
Water quality impact (surface run-off)	 Provision of measures to prevent discharge into the stream. 				
Noise Impact	Controlling the number of plants use on site; andRegular maintenance of machines.				
Contract No. KL/2	<u>014/01:</u>				
Air quality impact (dust)	 Frequent watering of haul road and unpaved/exposed areas; Frequent watering or covering stockpiles with tarpaulin or similar means; and Watering of any earth moving activities. 				
Water quality impact (surface run-off)	 Diversion of the collected effluent to de-silting facilities for treatment prior to discharge to public storm water drains; Provision of adequate de-silting facilities for treating surface run-off and other collected effluents prior to discharge; Provision of perimeter protection such as sealing of hoarding footings to avoid run-off from entering the existing storm water drainage system via public road; and Provision of measures to prevent discharge into the stream. 				
Noise Impact	 Scheduling of noisy construction activities if necessary to avoid persistent noisy operation; Controlling the number of plants use on site; Regular maintenance of machines; and Use of acoustic barriers if necessary. 				
Contract No. KL/2					
Construction dust, construction noise, water quality, waste management and landscape and visual impact.	 Sufficient watering of the works site with the active dust emitting activities; Limitation of the speed for vehicles on unpaved site roads; Properly cover or enclosure of the stockpiles and dusty materials; Good site practices on loading dusty materials; Providing sufficient vehicles washing facilities at every vehicle exit point; Good maintenance to the plant and equipment; Use of quieter plant and Quality Powered Mechanical Equipment (QPME); Use of acoustic fabric and noise barrier; Using the approved Non-road Mobile Machineries (NRMMs); Proper storage and handling of chemical; Appropriate desilting, oil interceptors or sedimentation devices provided on site for treatment before discharge; Onsite waste sorting and implementation of trip ticket system; Training of the site personnel in proper waste management and chemical waste handling procedures; Proper storage of the construction materials; Erection of decorative screen hoarding; Strictly following the Environmental Permits and Licenses; Provide sufficient mitigation measures as recommended in Approved EIA 				

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Major Impact Prediction	Control Measures		
	Reports		
Contract No. KL/2	<u>015/02:</u>		
Air quality impact (dust)	 Frequent watering of haul road and unpaved/exposed areas; Frequent watering or covering stockpiles with tarpaulin or similar means; and Watering of any earth moving activities. 		
Water quality impact (surface run-off)	 Diversion of the collected effluent to de-silting facilities for treatment prior to discharge to public storm water drains; Provision of adequate de-silting facilities for treating surface run-off and other collected effluents prior to discharge; Provision of perimeter protection such as sealing of hoarding footings to avoid run-off from entering the existing storm water drainage system via public road; and Provision of measures to prevent discharge into the stream. 		
Noise Impact	 Scheduling of noisy construction activities if necessary to avoid persistent noisy operation; Controlling the number of plants use on site; Regular maintenance of machines; and Use of acoustic barriers if necessary. 		



1. INTRODUCTION

1.1 Background

- 1.1.1 The Kai Tak Development is located in the south-eastern part of Kowloon Peninsula of the HKSAR, comprising the apron and runway areas of the former Kai Tak Airport and existing waterfront areas at To Kwa Wan, Ma Tau Kok, Kowloon Bay, Kwun Tong and Cha Kwo Ling.
- 1.1.2 A study of environmental impact assessment (EIA) was undertaken to consider the key issues of air quality, noise, water quality, waste, land contamination, cultural heritage and landscape and visual impact, and identify possible mitigation measures associated with the works. EIA Report (Register No. AEIAR-130/2009) was approved by the Environmental Protection Department (EPD) on 4 March 2009.
- 1.1.3 The EP-337/2009 was issued on 23 April 2009 for the new distributor roads serving the planned Kai Tak Development to the following scale and slope:
 - a) Road D1 a dual 2-lane carriageway of approximately 1.3 km long.
 - b) Road D2 a dual 3-lane carriageway of approximately 1.1 km long.
 - c) Road D3 a dual 2-lane carriageway of approximately 2.3 km long.
 - d) Road D4 a dual 2-lane carriageway of approximately 0.9 km long.
- 1.1.4 The Civil Engineering and Development Department HKSAR has appointed Fugro Technical Services Limited (FTS) to undertake the role of Independent Environmental Checker (IEC) for the Contract No. KL/2015/02.
- 1.1.5 This is the 32nd Consolidated Monthly EM&A Report which summaries the EM&A works undertaken by respective contract under EP-337/2009 within the period between 1 June and 30 June 2019.

Party	Position	Name	Telephone	Fax	
Contract No. KL/2012/0	3:				
Project Proponent (CEDD)	Senior Engineer	Mr. C. K. Choi	2301 1174	2301 1277	
Engineer's	CRE	Mr. W. K. Leung	2798 0771	3013 8864	
Representative (AECOM)	RE	Mr. Mickey Lee	2790 0771	3013 0004	
IEC (ANewR)	IEC	Mr. Adi Lee	2618 2831	3007 8648	
	ET Leader	Dr. Priscilla Choy	2151 2089		
ET (Wellab)	Project Coordinator and Audit Team Leader	Ms. Ivy Tam	2151 2090	3107 1388	
Main Contractor	Site Agent		2889 8675	2558 6900	
(Kwan On)	Site Agent Mr. P.H. Ho		6146 6761 (Hotline)		
Contract No. KL/2014/0	1:				
Project Proponent	Senior Engineer	Mr. Keith Chu	3579 2450	0570 4540	
(CEDD)	Engineer	Ms. Adonia Yung	3579 2124	3579 4516	
Engineer's Representative (AECOM)	CRE	Mr. Clive Cheng	3746 1801	2798 0783	
IEC (KSMC)	IEC	Dr. C. F. Ng	2618 2166	2120 7752	
FT (Cinctoch)	ET Leader	Mr. K.S Lee	2151 2091		
ET (Cinotech)	Audit Team	Ms. Betty Choi	2151 2072	3107 1388	

1.2 Summary of relevant Contract Information of Key Personnel

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Party	Party Position		Telephone	Fax
	Leader			
Main Contractor (CCJV)	EO	Mr. Dennis Ho	2960 1398	2960 1399
Contract No. KL/2014/0	3:			
Project Proponent (CEDD)	Co-ordinator	Ms. Amy Chu	3106 3172	2369 4980
Engineer's Representative (HMJV)	CRE	Mr. Chris Wong	3742 3803	3742 3899
IEC (Ramboll Hong Kong Limited)	IEC	Mr. F. C. Tsang	3465 2851	3465 2899
ET (FTS)	ET Leader	Mr. Colin Yung	3565 4114	3565 4160
Main Contractor (CRBC)	Site Agent	Mr. Dickey Yau	5699 4503	2283 1689
	EO	Mr. Kola Lam	5545 4625	2203 1009
Contract No. KL/2015/0	2:			
Project Proponent (CEDD)	Senior Engineer	Mr. Ricky Chan	2116 3753	2116 0714
Engineer's Representative (AECOM)	SRE	Mr. Vincent Lee	2798 0771	2210 6110
IEC (FTS)	IEC	Mr. Colin Yung	3565 4114	2450 8032
	ET Leader	Mr. K.S Lee	2151 2091	
ET (Cinotech)	Audit Team Leader	Ms. Betty Choy	2151 2072	3107 1388
Main Contractor (PWHJV)	Site Agent	Mr. W. M. Wong	6386 3535	2398 8301

1.3 Summary of Construction Programme and Activities

- 1.3.1 The construction programme of each Contract is summarized in the appendices of the corresponding Monthly EM&A.
- 1.3.2 The major construction activities undertaken in the reporting month are summarized as follow:

Contract No. KL/2012/03:

- Daily Cleaning;
- E&M Work, GRC coping, Landscape Work in PS2;
- Maintenance platform in DCS; and
- E&M Works, Scaffold Platform Installation in NPS.

Contract No. KL/2014/01:

- TTA implementation, junction improvement works at Shing Fung Road, Wang Chiu Road / Kai Cheung Road and Sheung Yee Road/Wang Chiu Road;
- · Construction of box culvert and underpass;
- · Construction of utilities trough at Kai Tak Bridge;
- Construction of pile caps, noise barrier footings and steel structures, outfalls, deck structure and columns;
- Laying of sewer, drainage and pavement;
- · Erection of noise barrier steel structure and panels

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Contract No. KL/2014/03:

- Excavation and laying of drainage pipe and manhole;
- Excavation and ELS construction.
- Construction of SUS structure;
- Construction of District Cooling System;
- Construction of Subway A; and
- · Construction of road base and road pavement.

Contract No. KL/2015/02:

- Road reinstatement works at PERE W/B and implement stage 2 TTA at PERE E/B;
- Excavation works with ELS installation and footing works for traffic deck (stage 4-1) at SKLR playground;
- Structural works for subway construction (Bay 6);
- Structural works for cantilever beam of Pier S15C4;
- Drainage works at Retaining Wall S15;
- Preparation works for demolition of bridge K72;
- Construction of chain-link fence for land sale sites;
- DCS & Watermains works in Portion 1 Road D1;
- Watermains works in Portion 6; and
- Drainage and sewerage works in Road L7.

3

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1.4 Summary of Inter-relationship with the environmental protection/ mitigation measures with the construction programme

1.4.1 The summary of inter-relationship with environmental protection/mitigation measures are presented as follow:

Major Environmental Impact	Control Measures
Contract No. KL/2012/03:	
Dust, Water Quality, Waste Management (Construction of superstructure of Pumping Station PS2 and NPS)	 Sufficient watering of the works site with active dust emitting activities; Properly cover the stockpiles; Appropriate desilting/sedimentation devices provided on site for treatment before discharge; Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall; and On-site waste sorting and implementation of trip ticket system.
Dust, Noise (Backfilling between sewerage manholes 1K1_1 and FMH10_340 and construction of manhole FMH10_370a at L6)	 Use of quiet plant and well-maintained construction plant; and Properly cover the stockpiles;
Noise, Waste Management (Installation of precast unit and construction of in-situ portions of Box Culvert B6; Construction of jacking pits nos. 1 and 2; Installation of gas pipe at pit no. 10; Construction of washout chamber at pit no. 11)	 Use of quiet plant and well-maintained construction plant; and Provide hoarding. Good management and control on construction waste reduction
Noise (Construction of sewerage manhole FMH 10 at Bailey Street; Widening works of Sung Wong Toi Road.) Noise, Water Quality (Pipe laying from manhole SMH2204 to Box Culvert B6; Laying of rising mains from PS2 to chainage CHA-18; Pipe laying from stormwater manholes SMH1962 to SMH1963 and construction of manholes SMH1953 and SMH1963 at L6; Installation of DCS;)	 Use of quiet plant and well-maintained construction plant; and Provide hoarding. Use of quiet plant and well-maintained construction plant; and Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall.
Contract No. KL/2014/01: Noise, dust impact, water quality and waste generation	 Sufficient watering of the works site with active dust emitting activities; Properly cover the stockpiles; On-site waste sorting and implementation of trip ticket system Appropriate desilting/sedimentation devices provided on site for treatment before discharge; Use of quiet plant and well-maintained construction plant; Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall; Provide mitigation measure to temporary use of chemicals;

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Major Environmental Impact	Control Measures		
	Provide sufficient mitigation measures as recommended in Approved EIA Report/Lease requirement.		
Contract No. KL/2014/03:			
Air Quality Impact, Construction Noise Impact, Water Quality Impact, Chemical and Waste Management, Landscape and Visual Impact	 Sufficient watering of the works site with the active dust emitting activities; Limitation of the speed for vehicles on unpaved site roads; Properly cover or enclosure of the stockpiles and dusty materials; Good site practices on loading dusty materials; Providing sufficient vehicles washing facilities at every vehicle exit point; Good maintenance to the plant and equipment; Use of quieter plant and Quality Powered Mechanical Equipment (QPME); Use of acoustic fabric and noise barrier; Using the approved Non-road Mobile Machineries (NRMMs); Proper storage and handling of chemical; Appropriate desilting, oil interceptors or sedimentation devices provided on site for treatment before discharge; Onsite waste sorting and implementation of trip ticket system; Training of the site personnel in proper waste management and chemical waste handling procedures; Proper storage of the construction materials; Erection of decorative screen hoarding; Strictly following the Environmental Permits and Licenses; Provide sufficient mitigation measures as recommended in Approved EIA Reports 		
Contract No. KI (2015/02)			
Contract No. KL/2015/02: Noise, dust impact, water quality and waste generation	 Sufficient watering of the works site with active dust emitting activities; Properly cover the stockpiles; On-site waste sorting and implementation of trip ticket system Appropriate desilting/sedimentation devices provided on site for treatment before discharge; Use of quiet plant and well-maintained construction plant; Provide movable noise barrier; Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall; Provide sufficient mitigation measures as recommended in Approved EIA Report/Lease requirement. 		

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1.5 Summary Status of Environmental Licences, Notifications and Permits

1.5.1 A summary of the relevant environmental licenses, permits and/or notifications on environmental protection for this EP and relevant Contract are presented in **Table 1.1**.

Table 1.1 Relevant Environmental Licenses, Permits and/or Notifications

Environmental License / Permit / Notification	Reference Number	Valid From	Valid Till		
Contract No. KL/2012/03:					
Environmental Permit	EP-337/2009	23/04/2009	N/A		
	EP-344/2009	23/04/2009	N/A		
Effluent Discharge License	WT00020971-2015	22/04/2015	21/04/2020		
Registration of Chemical Waste Producer	5213-286-K2958-05	-	N/A		
Contract No. KL/2014/01:					
Environmental Permit	EP-337/2009	23/04/2009	N/A		
Environmental Permit	EP-445/2013/A	13/08/2009	N/A		
Effluent Discharge License	WT00023634-2016	-	31/03/2021		
Registration of Chemical Waste Producer	5213-247-C4004-01	-	N/A		
Construction Noise Permit	GW-RE0186-19	16/03/2019	15/06/2019		
Construction Noise Permit	GW-RE0455-19	15/06/2019	14/12/2019		
Contract No. KL/2014/03:					
	EP-337/2009	23/04/2009	N/A		
Environmental Permit	EP-339/2009/A	18/06/2009	N/A		
	EP-451/2013	19/09/2013	N/A		
Notification pursuant to Air Pollution	395601	16/11/2015	N/A		
(Construction Dust) Regulation	393001	10/11/2015	IN/A		
Billing Account for Waste Disposal	A/C No.: 7023814	30/11/2015	N/A		
Billing Account for Waste Disposal	A/C No.: 7027469	25/08/2017	18/11/2017		
(Vessel)	A/C NO 7027469	22/11/2017	18/02/2018		
Construction Noise Dermit	GW-RE0433-19	06/06/2019	05/12/2019		
Construction Noise Permit	GW-RE0036-19	21/01/2019	11/07/2019		
Wastewater Discharge License	WT00023125-2015	06/01/2016	31/01/2021		
Chemical Waste Producer License	5213-247-C1232-12	23/11/2015	N/A		
Contract No. KL/2015/02:					
Environmental Permit	EP-337/2009	23/04/2009	N/A		
Wastewater Discharge License	WT00027495-2017	28/03/2017	31/03/2022		
Billing Account for Waste Disposal	A/C No.: 7026164	20/10/2016	N/A		
Registration of Chemical Waste Producer	WPN5213-229-P3271-01	14/08/2017	N/A		
Construction Noise Permit	-	-	-		



2. ENVIRONMENTAL MONITORING AND AUDIT

2.1 **Results and Observations**

Air Quality

Hong Kong.

- The schedule of air quality monitoring in reporting month is provided in the appendices of the 2.1.1 corresponding Monthly EM&A.
- The weather conditions during the monitoring are provided in the appendices of the 2.1.2 corresponding Monthly EM&A.
- The monitoring data of 24-hr TSP and 1 hour TSP are summarized in Table 2.1. Detailed 2.1.3 monitoring data are presented in the appendices of the corresponding Monthly EM&A.

Table 2.1 Summary of 24-hr and 1 hour TSP Monitoring Results

Parameter	Monitoring Station	Average (µg/m³)	Range (µg/ m³)	Action Level (µg/ m ³)	Limit Level (µg/ m³)	
Contract No.	KL/2012/03:					
N.A (The impa	act environmental mo	onitoring has been	ceased since 15	April 2019)		
Contract No.	KL/2014/01:					
N.A (No air qu	uality monitoring is re	quired for the Proje	ect)			
Contract No.	KL/2014/03:					
	KTD1a	No compl	aint of air quality	was resolved. Th	oroforo	
1-hr TSP	KTD2a			was received. Th		
	KER1b	no impact 1-hour TSP monitoring was conducted.				
	KTD1a	54	26-82	177		
24-hr TSP	KTD2a	63	48-71	157	260	
	KER1b	31	17-48	172		
Contract No. KL/2015/02:						
1-hr TSP	AM2	92	72 – 116	346	500	
24-hr TSP	AM2(A)	33	25 – 44	157	260	

- No Action / Limit Level exceedance was recorded for 24-hr TSP monitoring in the reporting 2.1.4 month.
- 2.1.5 No Action / Limit Level exceedance was recorded for 1-hr TSP monitoring in the reporting month.
- The monitoring data of 24-hr TSP was compared with the EIA predictions are presented in the 2.1.6 appendices of the corresponding Monthly EM&A.
- 2.1.7 The Event and Action Plan for air quality is given in in the appendices of the corresponding Monthly EM&A.

Noise

2.1.8 The schedule of noise monitoring in reporting month is provided in in the appendices of the corresponding Monthly EM&A.



2.1.9 The noise monitoring data are summarized in **Table 2.2**. Detailed monitoring data are presented in the appendices of the corresponding Monthly EM&A.

Table 2.2 Summary of Noise Impact Monitoring Results

Monitoring Stations	Construction Noise Level Leq _(30min) dB(A) (Range)	Action Level	Limit Level dB (A)
Contract No. KL/2012/03:			
N.A (The impact environme since 15 April 2019.)	ental monitoring has been ceased		
Contract No. KL/2014/01:			
(No Construction noise m	When one documented	NA	
Contract No. KL/2014/03:			
KTD1a	67-70	complaint is	75
KTD2a	69-75	received	75
KER1b	68-73		75
Contract No. KL/2015/02:			
M3	60 – 74#	1	70*
M4	71 – 76 #		70*
M5(C)	61 – 67		75

(*) Noise Limit Level is 65 dB(A) during school examination periods.

([#]) Measured noise level ≦ background / baseline noise level, detailed data refer to the corresponding Monthly EM&A report.

- 2.1.10 The noise monitoring data was compared with the EIA predictions are presented in the appendices of the corresponding Monthly EM&A.
- 2.1.11 No Action / Limit Level exceedance was recorded for noise monitoring in the reporting month.
- 2.1.12 The Event and Action Plan for noise is given in in the appendices of the corresponding Monthly EM&A.

Landscape and Visual

2.1.13 Site audits were carried out on a weekly basis to monitor and audit the landscape and visual mitigation measures within the site boundaries of this Project. Detailed of observations are presented in the appendices of the corresponding Monthly EM&A.

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3. SITE INSPECTION

3.1 Site Inspection

3.1.1 Site inspections were carried out weekly to monitor the implementation of proper environmental pollution control and mitigation measures for the Project. The site inspection of each Contract are summarized as follow:

Contract No. KL/2012/03:

Site audits were conducted on 6th, 14th, 19th and 24th June 2019 in the reporting month. IEC site inspection was conducted on 19th June 2019. No non-compliance was observed during the site audits.

Contract No. KL/2014/01:

Site audits were conducted by representatives of the Contractor, Supervising Officer and ET on 5, 13, 19 and 26 June 2019 in the reporting month. IEC joint site inspection was conducted on 26 June 2019. No non-compliance was observed during the site audits.

Contract No. KL/2014/03:

In the reporting month, four site inspections were carried out on 5, 12, 19 and 26 June 2019. Two of them, held on 5 and 12 May 2019 was the joint inspections with the IEC, ER, the Contractor and the ET.

Contract No. KL/2015/02:

Site audits were conducted on 3, 12, 17 and 24 June 2019 in the reporting month. A joint site audit with the representative of IEC, ER, the Contractor and the ET was conducted on 12 June 2019.

3.1.2 Detailed of observation, recommendation of site inspections and summary of the mitigation measures implementation schedule is provided in the appendices of the corresponding Monthly EM&A.

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4. ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

4.1 Complaints, Notification of Summons and Prosecution

4.1.1 The summary of complaints, notification of summons and prosecution in the reporting month is shown as **Table 4.1**.

Table 4.1 Summary of Complaints, Notification of Summons and Prosecution

Event	No. of Event This Month	Remark
Contract No. KL/2012/03:		
Complaint received	0	NA
Notifications of any summons & prosecutions received	0	NA
Contract No. KL/2014/01:		
Complaint received	0	NA
Notifications of any summons & prosecutions received	0	NA
Contract No. KL/2014/03:		
Complaint received	0	NA
Notifications of any summons & prosecutions received	0	NA
Contract No. KL/2015/02:		
Complaint received	0	NA
Notifications of any summons & prosecutions received	0	NA

4.1.2 Detailed records are presented in the appendices of the corresponding Monthly EM&A.

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5. IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES

5.1 Implementation Status

5.1.1 The Contractor has implemented environmental mitigation measures and requirements as stated in the EIA Reports, the EP and the EM&A Manuals. The implementation status of the mitigation measures during the reporting month are presented in the appendices of the corresponding Monthly EM&A.

5.2 Waste Management

5.2.1 The amount of wastes generated of this Project during the reporting month is shown in the appendices of the corresponding Monthly EM&A.

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6. FUTURE KEY ISSUES

6.1 Construction Programme for the Next Two Months

6.1.1 The major site activities undertaken for the coming two months are summarized in follow:

Contract No. KL/2012/03:

- Daily Cleaning;
- Maintenance platform in PS2;
- Maintenance platform in DCS; and
- Scaffold Platform Installation in NPS.

Contract No. KL/2014/01:

- TTA implementation, junction improvement works at Shing Fung Road, Wang Chiu Road / Kai Cheung Road and Sheung Yee Road/Wang Chiu Road;
- · Construction of box culvert and underpass;
- · Construction of utilities trough at Kai Tak Bridge;
- Construction of pile caps, noise barrier footings and steel structure, outfalls, deck structure and columns;
- · Laying of sewer, drainage and pavement;
- Erection of noise barrier steel structure and panels

Contract No. KL/2014/03:

- Installation of sheet pile for drainage works
- · Excavation and laying of drainage pipe and manhole
- · Removal of temporary decking and temporary road pavement
- Construction of SUS structure
- Excavation and ELS construction
- Construction of District Cooling System
- Construction of Subway A
- · Construction of road base and road pavement

Contract No. KL/2015/02:

- Jacking up the existing bridge K72 and demolish the exiting wall;
- Excavation works with ELS installation and construction of traffic deck (stage 4-1) at SKLR playground;
- Structural works for subway construction (Bay 6);
- Trail pit excavation and sheet piling works for subway construction at PERE (Stage 2);
- Drainage works and construction of parapet at Retaining Wall S15;
- Demolition of existing structure of bridge K72;
- Drainage works at Road D1;
- DCS & Watermains works in Portion 1 Road D1;
- · Watermains works in Portion 6; and
- Watermains works in Road L7.

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6.2 Key Issues for the Coming Month

6.2.1 The potential environmental impacts arising from the above construction activities and the control measures are shown in **Table 6.1**:

Table 6.1 Summary of Key Issues for the Coming Month and Control Measures

Major Impact Prediction	Control Measures				
Contract No. KL/2012/03:					
Air quality impact (dust)	Covering stockpiles with tarpaulin or similar means;				
Water quality impact (surface run-off)	 Provision of measures to prevent discharge into the stream. 				
Noise Impact	Controlling the number of plants use on site; andRegular maintenance of machines.				
Contract No. KL/2	014/01:				
Air quality impact (dust)	 Frequent watering of haul road and unpaved/exposed areas; Frequent watering or covering stockpiles with tarpaulin or similar means; and Watering of any earth moving activities. 				
Water quality impact (surface run-off)	 Diversion of the collected effluent to de-silting facilities for treatment prior to discharge to public storm water drains; Provision of adequate de-silting facilities for treating surface run-off and other collected effluents prior to discharge; Provision of perimeter protection such as sealing of hoarding footings to avoid run-off from entering the existing storm water drainage system via public road; and Provision of measures to prevent discharge into the stream. 				
Noise Impact	 Scheduling of noisy construction activities if necessary to avoid persistent noisy operation; Controlling the number of plants use on site; Regular maintenance of machines; and Use of acoustic barriers if necessary. 				
Contract No. KL/2	014/03:				
Construction dust, construction noise, water quality, waste management and landscape and visual impact.	 Sufficient watering of the works site with the active dust emitting activities; Limitation of the speed for vehicles on unpaved site roads; Properly cover or enclosure of the stockpiles and dusty materials; Good site practices on loading dusty materials; Providing sufficient vehicles washing facilities at every vehicle exit point; Good maintenance to the plant and equipment; Use of quieter plant and Quality Powered Mechanical Equipment (QPME); Use of acoustic fabric and noise barrier; Using the approved Non-road Mobile Machineries (NRMMs); Proper storage and handling of chemical; Appropriate desilting, oil interceptors or sedimentation devices provided on site for treatment before discharge; Onsite waste sorting and implementation of trip ticket system; Training of the site personnel in proper waste management and chemical waste handling procedures; Proper storage of the construction materials; Erection of decorative screen hoarding; Strictly following the Environmental Permits and Licenses; Provide sufficient mitigation measures as recommended in Approved EIA Reports 				

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Major Impact Prediction	Control Measures		
Contract No. KL/2	015/02:		
Air quality impact (dust)	 Frequent watering of haul road and unpaved/exposed areas; Frequent watering or covering stockpiles with tarpaulin or similar means; and Watering of any earth moving activities. 		
Water quality impact (surface run-off)	 Diversion of the collected effluent to de-silting facilities for treatment prior to discharge to public storm water drains; Provision of adequate de-silting facilities for treating surface run-off and other collected effluents prior to discharge; Provision of perimeter protection such as sealing of hoarding footings to avoid run-off from entering the existing storm water drainage system via public road; and Provision of measures to prevent discharge into the stream. 		
Noise Impact	 Scheduling of noisy construction activities if necessary to avoid persistent noisy operation; Controlling the number of plants use on site; Regular maintenance of machines; and Use of acoustic barriers if necessary. 		

6.3 Monitoring Schedules for the Next Three Months

6.3.1 The tentative schedules for environmental monitoring in the coming three months are provided in in the appendices of the corresponding Monthly EM&A.

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7. CONCLUSIONS

- 7.1.1 No Action / Limit Level exceedance was recorded for 24-hr TSP monitoring in the reporting month.
- 7.1.2 No Action / Limit Level exceedance was recorded for 1-hr TSP monitoring in the reporting month.
- 7.1.3 No Action / Limit Level exceedance was recorded for noise monitoring in the reporting month.
- 7.1.4 No complaint, notification of summons or prosecution was received in this reporting month.
- 7.1.5 The potential environmental impacts arising from the coming two months of major construction activities and the control measures are shown in **Table 6.1**.

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Appendix A

Monthly EM&A Report For Contract No. KL/2012/03 Kai Tak Development - Stage 4 Infrastructure at North Apron Area

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Civil Engineering and Development Department

EP-344/2009 – New Sewage Pumping Stations Serving KTD EP-337/2009 – New Distributor Roads Serving the Planned KTD

Contract No. KL/2012/03 Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area

Monthly EM&A Report

June 2019

(Version 1.0)

Approved By	(Environmental Team Leader)
REMARKS:	

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

WELLAB accepts no responsibility for changes made to this report by third parties

WELLAB LIMITED Room 1701, Technology Park, 18 On Lai Street, Shatin, NT, Hong Kong Tel: (852) 2898 7388 Fax: (852) 2898 7076 Website: www.wellab.com.hk



Kai Tak Development Site Office Contract No. KL/2012/03 c/o AECOM 8/F, Grand Central Plaza, Tower 2 138 Shatin Rural Committee Road Shatin New Territories Hong Kong Your reference:

Our reference:

HKCEDD11/50/105857

Date: 11 July 2019

Attention: Mr Mickey Lee

BY EMAIL & POST (email: RE3@ktd-5a.com)

Dear Sirs

Agreement No. EDO 08/2018 Independent Environmental Checker (IEC) for CEDD Contract No. KL/2012/03 Kai Tak Development – Stage 4 Infrastructure at Former North Apron Area Verification of Monthly EM&A Report for June 2019

We refer to emails of 5 and 10 July 2019 attaching a Monthly EM&A Report for June 2019 prepared by the ET.

We have no further comment and hereby verify the captioned report in accordance with Clause 3.3 of the Environmental Permit nos. EP-337/2009 and EP-344/2009.

Please do not hesitate to contact the undersigned or our Ms Katherine Chu on 2618 2831 should you have any queries.

Yours faithfully ANEWR CONSULTING LIMITED

Independent Environmental Checker

LYMA/CWKK/lhmh

cc CEDD – Mr C K Choi (email: ckchoi@cedd.gov.hk) Wellab – Dr Priscilla Choy (email: Priscilla.Choy@wellab.com.hk)



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EXECUTIVE SUMMARY

Introduction

- This is the 67th Monthly Environmental Monitoring and Audit (EM&A) Report prepared by Wellab Ltd. for "Contract No. KL/2012/03 - Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area" (Hereafter referred to as "the Project"). This contract comprises the construction of Schedule 2 Designated Projects (DP) Road D2 & Sewage Pumping Station PS2 and PS NPS which forms a part of the works under two Environmental Permits (EP), EP-337/2009 and EP-344/2009. The title of the designated projects under Environmental Permit No.: EP-344/2009 is "New sewage pumping stations serving Kai Tak Development" and under Environmental Permit No.: EP-337/2009 is "New distributor roads serving the planned Kai Tak Development". This report documents the findings of EM&A Works conducted from 1 to 30 June 2019.
- 2. All major construction works were completed, the site activities undertaken in the reporting month included:
 - Daily Cleaning;
 - E&M Work, GRC coping, Landscape Work in PS2;
 - Maintenance platform in DCS; and
 - E&M Works, Scaffold Platform Installation in NPS.

Environmental Monitoring Works

- 3. Site Inspections/Audits were conducted once per week. The implementation of the environmental mitigation measures, Event Action Plans and environmental complaint handling procedures were also checked.
- 4. Summary of the breaches of action and limit levels in the reporting month for the Project is tabulated in **Table I**.

Parameter	No. of Project-rela	Action Taken	
	Action Level	Limit Level	ACTION TAKEN
1-hr TSP	0	0	N/A
24-hr TSP	0	0	N/A
Noise	0	0	N/A

 Table I
 Breaches of Action and Limit Levels for the Project in the Reporting Month

5. The Proposal for Cessation of Construction Phase EM&A Works at Road D2 for Environmental Permits (EP) No. EP-377/2009 was approved by the EPD on 15 April 2019. The impact environmental monitoring has been ceased since 15 April 2019.

Environmental Licenses and Permits

- 6. Licenses/Permits granted to the Project include the Environmental Permit (EP) for the Project, Environmental Permits No. EP-344/2009 and EP-337/2009 were issued on 23 April 2009.
- 7. Registration of Chemical Waste Producer (Waste Producer Number: 5213-286-K2958-05).

8. Water Discharge License (WT00020971-2015).

Key Information in the Reporting Month

9. Summary of complaint received, reporting changes and notifications of any summons and successful prosecutions in the reporting month is tabulated in **Table II**.

Table II Summary Table for Key Information in the Reporting Month

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Complaint received	0		N/A	N/A	
Reporting Changes	0		N/A	N/A	
Notifications of any summons & prosecutions received	0		N/A	N/A	

Future Key Issues

10. The future key environmental issues in the coming month include:

- Dust generation from stockpiles of dusty materials, exposed site area and excavation works;
- Proper storage of construction materials on site;
- Storage of chemicals/fuel and chemical waste/waste oil on site;
- Accumulation of general and construction waste on site; and
- Noise from operation of the equipment, especially for machinery on-site.

1. INTRODUCTION

Background

- 1.1 The Kai Tak Development (KTD) is located in the south-eastern part of Kowloon Peninsula, comprising the apron and runway areas of the former Kai Tak Airport and existing waterfront areas at To Kwa Wan, Ma Tau Kuk, Kowloon Bay, Kwun Tong and Cha Kwo Ling. It covers a land area of about 328 hectares. Stage 4 Infrastructure at Former North Apron Area is one of the construction stages of KTD. Schedule 2 DPs in this Project include new distributor roads serving the planned KTD and new sewage pumping stations serving the planned KTD. The general layout of the Project is shown in **Figure 1**.
- 1.2 Two Environmental Permits (EPs) No. EP-344/2009 and EP-337/2009 were also issued to the Permit Holder Civil Engineering and Development Department on 23 April 2009 for new sewage pumping stations serving the planned KTD and new distributor roads serving the planned KTD respectively.
- 1.3 A study of environmental impact assessment (EIA) was undertaken to identify the key issues of air quality, noise, water quality, waste, land contamination, cultural heritage and landscape and visual impact, and recommend possible mitigation measures associated with the works. The EIA Report (Register No. AEIAR-130/2009) was approved by the Environmental Protection Department (EPD) on 4 April 2009.
- 1.4 Wellab Limited (Wellab) is commissioned by Kwan On Construction Co., Ltd. (the Contractor) on 1st January 2019 to undertake the role of the Environmental Team (ET) for the Contract No. KL/2012/03 Stage 4 Infrastructure at Former North Apron Area. The construction work under KL/2012/03 comprises the construction of Road D2 & Sewage Pumping Station PS2 and PS NPS which forms a part of the works under two EPs (EP-337/2009 and EP-344/2009).
- 1.5 The construction commencement of this Contract was on 1st December 2013 for Road D2, Sewage Pumping Station PS2 and PS NPS. This is the 67th Monthly EM&A report summarizing the EM&A works for the Project from 1 to 30 June 2019.

Project Organizations

- 1.6 Different parties with different levels of involvement in the project organization include:
 - Project Proponent Civil Engineering and Development Department (CEDD).
 - The Engineer and the Engineer's Representative (ER) AECOM.
 - Environmental Team (ET) Wellab Limited (WL).
 - Independent Environmental Checker (IEC) ANewR Consulting Limited. (ANewR).
 - Contractor Kwan On Construction Co., Ltd. (Kwan On).

1.7 The key contacts of the Project are shown in **Table 1.1** and **Figure 5**.

Table 1.1 Key Project Contacts					
Party	Role	Contact Person	Position	Phone No.	Fax No.
CEDD	Project Proponent	Mr. C. K. Choi	Senior Engineer	3106 2583	3579 4512
AECOM	Engineer's Representative	Mr. W. K. Leung Mr. Mickey Lee	CRE RE	2798 0771	3013 8864
Wellab Environmental Team	Dr. Priscilla Choy	Environmental Team Leader	2151 2089		
		Ms. Ivy Tam	Project Coordinator and Audit Team Leader	2151 2090	3107 1388
ANewR	Independent Environmental Checker	Mr. Adi Lee	Independent Environmental Checker	2618 2831	3007 8648
				2889 8675	2558 6900
Kwan On	Contractor	Mr. P.H. Ho	Site Agent	6146 6761 (Hotline telephone number)	

Construction Activities undertaken during the Reporting Month

- 1.8 The site activities undertaken in the reporting month included:
 - Daily Cleaning;
 - E&M Work, GRC coping, Landscape Work in PS2;
 - Maintenance platform in DCS; and
 - E&M Works, Scaffold Platform Installation in NPS.
- 1.9 The construction programme showing the inter-relationship with environmental protection/mitigation measures is presented in **Table 1.2**.

Protection/Mitigation Measures				
Construction Works	Generated Major Environmental Impact	Control Measures		
Construction of superstructure of Pumping Station PS2 and NPS;	Dust, Water Quality, Waste Management	 Sufficient watering of the works site with active dust emitting activities; Properly cover the stockpiles; Appropriate desilting/sedimentation devices provided on site for treatment before discharge; Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall; and On-site waste sorting and implementation of trip ticket system. 		
Backfilling between sewerage manholes 1K1_1 and FMH10_340 and construction of manhole FMH10_370a at L6;	Dust, Noise	 Use of quiet plant and well-maintained construction plant; and Properly cover the stockpiles; 		
Installation of precast unit and construction of in-situ portions of Box Culvert B6; Construction of jacking pits nos. 1 and 2; Installation of gas pipe at pit no. 10; Construction of washout chamber at pit no. 11;	Noise, Waste Management	 Use of quiet plant and well-maintained construction plant; and Provide hoarding. Good management and control on construction waste reduction 		
Construction of sewerage manhole FMH 10 at Bailey Street; Widening works of Sung Wong Toi Road.	Noise	 Use of quiet plant and well-maintained construction plant; and Provide hoarding. 		
Pipe laying from manhole SMH2204 to Box Culvert B6; Laying of rising mains from PS2 to chainage CHA-18; Pipe laying from stormwater manholes SMH1962 to SMH1963 and construction of manholes SMH1953 and SMH1963 at L6; Installation of DCS;	Noise, Water Quality	 Use of quiet plant and well-maintained construction plant; and Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall. 		

Table 1.2 Construction Programme Showing the Inter-Relationship with Environmental Protection/Mitigation Measures

Summary of EM&A Requirements

- 1.10 The EM&A programme requires construction noise monitoring, air quality monitoring, landscape and visual monitoring and environmental site audit. The EM&A requirements for each parameter are described in the following sections, including:
 - All monitoring parameters;
 - Action and Limit levels for all environmental parameters;
 - Event Action Plans;
 - Environmental requirements and mitigation measures, as recommended in the EM&A Manual under the EP.
- 1.11 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in Section 6 of this report.
- 1.12 This report presents the implementation of the EM&A programme for the Project from 1 to 30 June 2019.

1.13 Air quality monitoring stations within 500m and noise monitoring stations within 300m from the boundary of this Project are considered as relevant monitoring locations. In such regard, the relevant air quality and noise monitoring locations are tabulated in **Table 1.3** (see **Figure 2 and 3** for their locations).

Locations	Monitoring Stations In accordance with EM&A Manual	Alternative Monitoring Stations	
Air Quality Monitoring Stations			
AM2 - Lee Kau Yan Memorial School	Yes	AM2(A) – Ng Wah Catholic Secondary School	
AM3 – Sky Tower	No	AM3(A) – Holy Trinity Bradbury Centre AM3(B) – Family Planning Association of Hong Kong**	
AM4 – Grand Waterfront	No	AM4(A) – EMSD Workshop*	
AM5 – CCC Kei To Secondary School	No	N/A^	
AM6 – Site 1B4 (Planned)	N/A		
Noise Monitoring Stations			
M6 – Holy Carpenter Primary School	No	M6(A) – Oblate Primary School	
M7 – CCC Kei To Secondary School	Yes	N/A	
M8 – Po Leung Kuk Ngan Po Ling College	No	M8(A) – Po Leung Kuk Ngan Po Ling College (Site Boundary) [#]	
M9 – Tak Long Estate	Yes	N/A	
M10 – Site 1B4 (Planned)	N/A		

Table 1.3 Air Quality and Noise Monitoring Stations for this Project

Remarks:

> "Yes" – Monitoring station is the same as that stated in EM&A Manual

No – Monitoring station is not the same as that stated in EM&A Manual. Request for carrying monitoring works at the monitoring stations stated in EM&A Manual was rejected by owner of premise. Alternative monitoring stations were proposed by the ET of Schedule 3 EIA and approved by the EPD.

 \triangleright N/A – No alternative monitoring station is required.

**AM3(B) – The permission of air quality monitoring works (24-hour TSP) at station AM3(A) was denied in November 2017, the monitoring works were resumed at the alternative station – AM3(B) in December 2017.

*AM4(A) – EMSD Workshop was cancelled due to unsuccessful accessibility of the facility. 1-hr TSP monitoring was conducted at AM4(B) – Ma Tau Kuk Road (next to EMSD workshop) temporarily and 24-hr TSP monitoring was conducted at AM4(C) – New Pumping Station under Contract No. KL/2012/03.

^AM5(A) – Po Leung Kuk Ngan Po Ling College was cancelled because no permission was granted from the premise. Air quality monitoring was carried out at AM5 – CCC Kei To Secondary School.

> # The alternative position of M8 (remark as M8(A)) was adopted on .

- 1.14 According to the Environmental Monitoring and Audit Manual (EM&A Manual) of the Kai Tak Development (KTD) Schedule 3 Environmental Impact Assessment (EIA) Report, the impact monitoring at the designated monitoring stations as required in KTD EM&A Manual under the EP, has been conducted in Environmental Monitoring Works for Kai Tak Development under Schedule 3 of KTD, which is on-going starting from December 2010, when the impact monitoring data under Schedule 3 of KTD were adopted for the Project.
- 1.15 Although Contract no. KLN/2013/16 under Schedule 3 of KTD has been superseded by KLN/2016/09 since early March 2017, the ET continued to adopt the impact monitoring data under Schedule 3 of KTD until appropriate new arrangement is agreed.

- 1.16 The Proposal for Cessation of Construction Phase EM&A Works at Road D2 for Environmental Permits (EP) No. EP-377/2009 was approved by the EPD on 15 April 2019. The impact environmental monitoring has been ceased since 15 April 2019. Weekly site inspection, Landscape and Visual Monitoring and reporting will be remained until the completion of Landscape Works.
- 1.17 Weekly site inspection, Landscape and Visual monitoring and reporting will be remained until the completion of landscape works for Environmental Permits (EP) No. EP-344/2009.

Status of Compliance with Environmental Permits Conditions

1.18 The status of required submission related to this Project under the Environmental Permits No. EP-337/2009 and EP-344/2009 is summarized in the **Table 1.4** and **Table 1.5** respectively:

EP Conditions	Submission	Submission Date	Remark
1.11	Notification of Commencement Date of Construction of Project	31 October 2013	For Road D2
2.3	Management Organization of Main Construction Companies	31 October 2013	For Contract No. KL/2012/03
2.4	Design Drawing(s) of the Project	28 October 2013	For Road D2
2.11	Landscape Mitigation Plan(s) for distributors road(s)	7 January 2014	For Road D2
2.12	As-built drawing(s) for the distributor road(s)	To be submitted at least one week before the commencement of operation of distributor road(s)	
3.2	Baseline Monitoring Report	26 November 2010 (Part I) 24 December 2010 (Part II)	/
3.3	Four hard copies and one electronic copy of the Monthly EM&A Report No. 65 (May 2019)	14 June 2019	Monthly EM&A Report for Contract No. KL/2012/03

Table 1.4 Summary Table for Required Submission under EP No. EP-337/2009

Table 1.5 Summary Table for Required Submission under EP No. EP-344/2009

EP Conditions	Submission	Submission Date	Remark
1.11	Notification of Commencement Date of Construction of Project	31 October 2013	For Pumping Station PS2 and PS NPS
2.3	Management Organization of Main Construction Companies	31 October 2013	For Contract No. KL/2012/03
2.4	Design Drawing(s) of the Project	28 October 2013	For Pumping Station PS2 and PS NPS

EP Conditions	Submission	Submission Date	Remark
2.11	Landscape Mitigation Plan(s) for sewage pumping station(s)	7 January 2014	For Pumping Station PS2 and PS NPS
2.12	As-built drawing(s) for the sewage pumping station (s)	To be submitted at least one week before the commencement of operation of distributor road(s)	
3.2	Baseline Monitoring Report	26 November 2010 (Part I) 24 December 2010 (Part II)	/
3.3	Four hard copies and one electronic copy of the Monthly EM&A Report No. 65 (May 2019)	14 June 2019	Monthly EM&A Report for Contract No. KL/2012/03

2. AIR QUALITY

Monitoring Requirements

2.1 According to EM&A Manual under the EPs, 1-hour and 24-hour Total Suspended Particulates (TSP) monitoring were conducted to monitor the air quality for this Project. For regular impact monitoring, a sampling frequency of at least once in every six days at all of the monitoring stations for 24-hour TSP monitoring. For 1-hour TSP monitoring, the sampling frequency of at least three times in every six days shall be undertaken when the highest dust impact occurs. **Appendix A** shows the established Action/Limit Levels for the environmental monitoring works.

Monitoring Locations

2.2 Seven designated monitoring stations were selected for air quality monitoring programme. Impact dust monitoring was conducted at six of the air quality monitoring stations (AM2, AM2(A), AM3(A), AM3(B), AM4(C) and AM5. **Table 2.1** describes the air quality monitoring locations, which are also depicted in **Figure 2**.

Monitoring Stations	Locations	Location of Measurement
AM2	Lee Kau Yan Memorial School	Rooftop (about 8/F) Area
AM2(A)	Ng Wah Catholic Secondary School	Rooftop (about 8/F) Area
AM3(A)	Holy Trinity Bradbury Centre	Rooftop (about 8/F) Area
AM3(B)	Hong Kong Family Planning Association	Rooftop (about 4/F) Area
AM4(C)	New Pumping Station	Rooftop (about 6/F) Area
AM5	CCC Kei To Secondary School	Rooftop (about 10/F) Area
AM6	PA 15	Site 1B4 (Planned)

 Table 2.1
 Locations for Air Quality Monitoring

- 2.3 The Proposal for Cessation of Construction Phase EM&A Works at Road D2 for Environmental Permits (EP) No. EP-377/2009 was approved by the EPD on 15 April 2019. The impact environmental monitoring has been ceased since 15 April 2019.
- 2.4 1-hr TSP and 24-hr TSP monitoring were not required for Environmental Permits (EP) No. EP-344/2009.

3. NOISE

Monitoring Requirements

3.1 According to EM&A Manuals under the EP, construction noise monitoring was conducted to monitor the construction noise arising from the construction activities within KTD. The regular monitoring frequency for each monitoring station shall be on a weekly basis to conduct one set of measurements between 0700 and 1900 hours on normal weekdays. **Appendix A** shows the established Action and Limit Levels for the environmental monitoring works.

Monitoring Locations

- 3.2 Five designated monitoring stations were selected for noise monitoring programme. Noise monitoring was conducted at four designated monitoring stations (M6, M7, M8 and M9). **Figure 3** shows the locations of these stations.
- 3.3 Construction noise monitoring at Station M6 Holy Carpenter Primary School was rejected by the premise owner on 6th October 2014. The monitoring station has been relocated at a proposed alternative noise monitoring station M6(A) Oblate Primary School since 10th October 2014 to carry out the monitoring works.
- 3.4 The proposal for alternative position of M8 (remark as M8(A)) was agreed by IEC on 20th March 2019 in accordance with the Section 2.3.9 of EM&A Manual of the Project and the Environmental Protection Department (EPD) has no major objection on the proposal.

Monitoring Stations	Locations	Location of Measurement
*M6(A)	Oblate Primary School	Rooftop (about 7/F) Area
M7	CCC Kei To Secondary School	Rooftop (about 8/F) Area
^M8(A)	Po Leung Kuk Ngan Po Ling College	Ground Level (at a position
(A)	(Site Boundary)	3m above the ground)
M9	Tak Long Estate	Car Park Building (about 2/F)
M10	Site 1B4 (Planned)	-

Table 3.1Noise Monitoring Stations

Remarks:

* Alternative noise monitoring station for M6 – Holy Carpenter Primary School from 10th October 2014 onwards

[^] The proposal for alternative position of M8 (remark as M8(A)) was agreed by IEC on 20th March 2019 in accordance with the Section 2.3.9 of EM&A Manual of the Project and the Environmental Protection Department (EPD) has no major objection on the proposal. The Free Field noise measurement was adopted for Station M8(A) and its baseline reference noise level was adjusted with a correction of +3dB(A).

- 3.5 The Proposal for Cessation of Construction Phase EM&A Works at Road D2 for Environmental Permits (EP) No. EP-377/2009 was approved by the EPD on 15 April 2019. The impact environmental monitoring has been ceased since 15 April 2019.
- 3.6 1-hr TSP and 24-hr TSP monitoring were not required for Environmental Permits (EP) No. EP-344/2009.

4. LANDSCAPE AND VISUAL

Monitoring Requirements

- 4.1 According to EM&A Manual of the Kai Tak Development EIA Study, ET shall monitor and audit the contractor's activities during the construction period on a weekly basis, and to report on the contractor's performance.
- 4.2 The Proposal for Cessation of Construction Phase EM&A Works at Road D2 for Environmental Permits (EP) No. EP-377/2009 was approved by the EPD on 15 April 2019. The impact environmental monitoring has been ceased since 15 April 2019. Weekly site inspection, Landscape and Visual Monitoring and reporting will be remained until the completion of Landscape Works.

Results and Observations

- 4.3 Site audits were carried out on a weekly basis to monitor and audit the timely implementation of landscape and visual mitigation measures within the site boundaries of this Project. The summaries of site audits are attached in **Appendix B**.
- 4.4 No non-compliance of the landscape and visual impact was recorded in the reporting month.
- 4.5 In accordance with the Action Plan presented in **Appendix C**, no corrective actions were required in the reporting month.

5. ENVIRONMENTAL AUDIT

Site Audits

- 5.1 Site audits were carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site. The summaries of site audits are attached in **Appendix B**.
- 5.2 Site audits were conducted on 6th, 14th, 19th and 24th June 2019 in the reporting month. IEC site inspection was conducted on 19th June 2019. No non-compliance was observed during the site audits.

Status of Environmental Licensing and Permitting

5.3 All permits/licenses obtained for the Project are summarized in Table 6.1.

Permit No.	Valid	Period	Details	Status
Permit No.	From	То	Details	Status
Environmental Perm	it (EP)			
EP-337/2009	23/04/09	N/A	Construction of new distributor roads serving the planned Kai Tak development.	Valid
EP-344/2009	23/04/09	N/A	Construction of a new sewage pumping station serving the planned Kai Tak development with installed capacity of more than 2,000 m ³ per day and a boundary of which is less than 150m from an existing or planned residential area or educational institution.	Valid
Effluent Discharge Li	icense			
WT00020971-2015	22/04/15	21/04/20	Discharge License for the discharge of wastewater from the construction site including contaminated surface run-off to the communal storm water drain	Valid
Registration of Chemical Waste Producer				
5213-286-K2958-05			Registration of chemical waste producer for chemical waste produced during construction of Stage 4 at former North Apron Area Infrastructure.	Valid

Table 5.1Summary of Environmental Licensing and Permit Status

Status of Waste Management

- 5.4 The amount of wastes generated by the major site activities of this Project during the reporting month is shown in **Appendix F**.
- 5.5 In respect of the dump truck cover, the Contractor is advised to take record photos and inspection to ensure that the skips of all dump trucks have been fully covered before leaving the site.

Implementation Status of Environmental Mitigation Measures

5.6 During site inspections in the reporting month, no non-conformance was identified. ET weekly site inspections were carried out during the reporting month and the observations and recommendations are summarized in Table 6.2.

	Obsel valibils a	Observations and Recommendations of Site Inspections for EF-537/2009		
Parameters	Date	Observations and Recommendations	Follow-up	
Water Quality				
Air Quality				
Noise				
Waste/Chemical Management				
Landscape and Visual				
Permits /Licences				

Table 5.2Observations and Recommendations of Site Inspections for EP-337/2009

Table 5.3	Observations and Recommendations of Site Inspections for EP-344/2009
1 ubic 5.5	obset valions and Recommendations of Site inspections for E1 544/2007

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality			
Air Quality			
Noise			
Waste/Chemical Management			
Landscape and Visual			
Permits /Licences			

Summary of Mitigation Measures Implemented

5.7 The monthly IEC audit was carried out on 19th June 2019, the summary were recorded as follows:

Follow up of last monthly audit:

• No major environmental deficiency was observed during the previous site audit.

Observation(s) in the reporting month:

- No major environmental deficiency was observed during the site audit.
- 5.8 An updated summary of the EMIS is provided in **Appendix D**.

Implementation Status of Event Action Plans

5.9 The Event Action Plans for air quality, noise and landscape and visual are presented in Appendix C.

Environmental Monitoring

5.10 The Cessation of Impact Environmental Monitoring Works (Construction Phase) was approved by the EPD. Impact Environmental Monitoring was ceased since 15 April 2019.

Landscape and visual

5.11 No non-compliance was recorded in the reporting month.

Summary of Complaint, Warning, Notification of any Summons and Successful Prosecution

5.12 No environmental complaint and environmental prosecution was received in the reporting month. The summaries of environmental complaint, warning, summon and notification of successful prosecution for the Project are presented in **Appendix E**.

6. FUTURE KEY ISSUES

- 6.1 Major site activities undertaken for the coming two months include:
 - Daily Cleaning;
 - Maintenance platform in PS2;
 - Maintenance platform in DCS; and
 - Scaffold Platform Installation in NPS.
- 6.2 The tentative construction program for the Project is provided in **Appendix G.**

Key Issues for the Coming Month

- 6.3 Key environmental issues in the coming month include:
 - Dust generation from stockpiles of dusty materials, exposed site area and excavation works;
 - Proper storage of construction materials on site;
 - Storage of chemicals/fuel and chemical waste/waste oil on site;
 - Accumulation of general and construction waste on site; and
 - Noise from operation of the equipment, especially for machinery on-site.
- 6.4 The tentative program of major site activities and the impact prediction and environmental mitigation measures for the coming two months, i.e. July 2019 and August 2019 are summarized as follows:

Table 6.1Summary of the tentative program of major site activities, the impact prediction
and control measures for July and August 2019

Construction Works	Major Impact	Control Measures
	Prediction	
	Air quality impact	a) Covering stockpiles with tarpaulin or
	(dust)	similar means;
	Water quality	b) Provision of measures to prevent discharge into the
As mentioned in	impact (surface	stream;
Section 7.1	run-off)	
	Noise Impact	c) Controlling the number of plants use on site; and
	_	d) Regular maintenance of machines.
		-

7. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

- 7.1 The Proposal for Cessation of Construction Phase EM&A Works at Road D2 for Environmental Permits (EP) No. EP-377/2009 was approved by the EPD on 15 April 2019. The impact environmental monitoring has been ceased since 15 April 2019. Weekly site inspection, Landscape and Visual Monitoring and reporting will be remained until the completion of Landscape Works.
- 7.2 Weekly site inspection, Landscape and Visual Monitoring and reporting will be remained until the completion of Landscape Works for Environmental Permits (EP) No. EP-344/2009.

Complaints, Notification of any Summons and Prosecution Received

7.3 No environmental complaint and environmental prosecution was received in the reporting month. The summaries of environmental complaint, warning, summon and notification of successful prosecution for the Project are presented in **Appendix E**.

Recommendations

7.4 According to the environmental audit performed in the reporting month, the following recommendations were made:

Air Quality Impact

• To implement dust suppression measures on stockpiles.

Noise Impact

- To inspect the noise sources inside the site.
- To disperse the locations of noisy equipments and position the equipments as far away as possible from sensitive receivers.

Water Impact

• To prevent any surface runoff discharge into any stream course.

Waste/Chemical Management

- To check for any accumulation of waste materials or rubbish on site.
- To ensure the performance of sorting of C&D materials at source (during generation);
- To avoid any discharge or accidental spillage of chemical waste or oil directly from the site.
- To provide proper storage area or drip trays for oil containers/ equipment on site.
- To avoid improper handling or storage of oil drum on site.

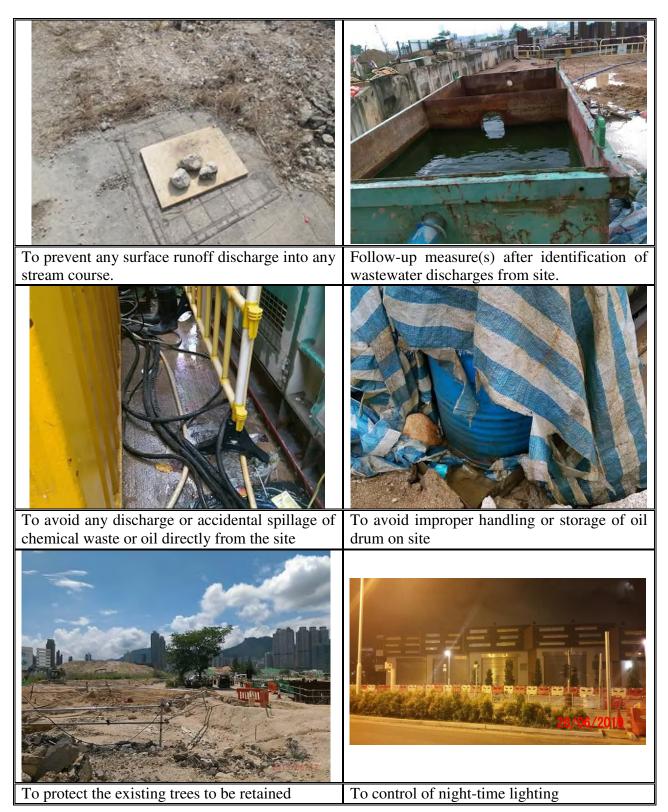
Landscape and Visual

- To protect the existing trees to be retained.
- To transplant the trees unavoidably affected by the works.
- To control of night-time lighting.
- To provide decorative screen hoarding.
- To complete landscape works at site area as early as possible.

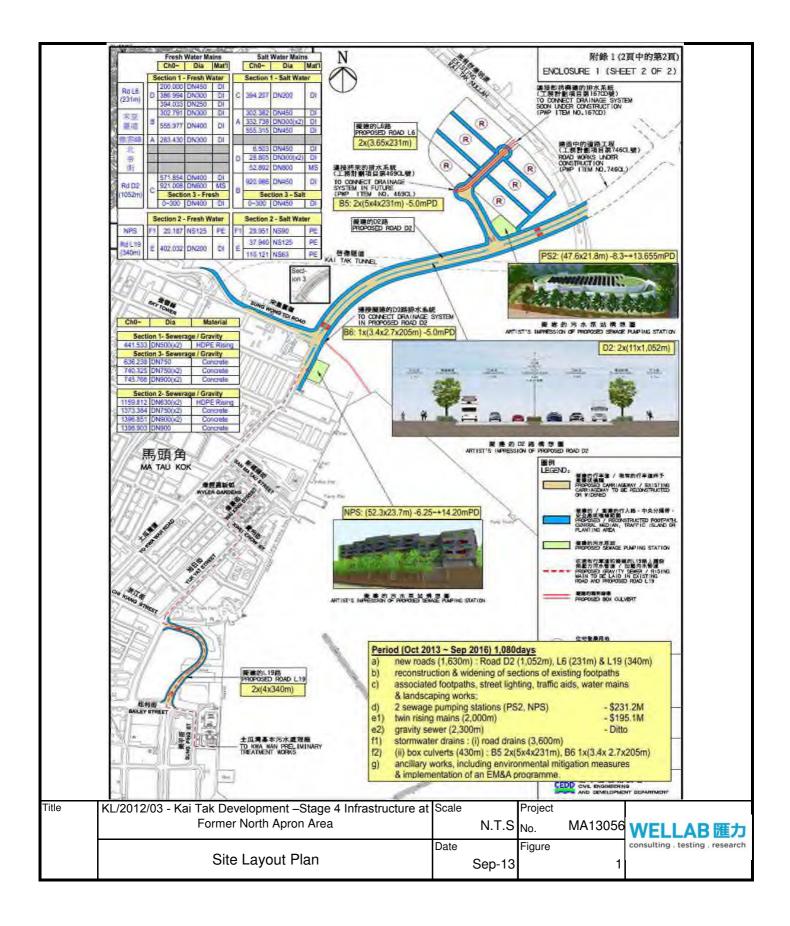
Effectiveness of Environmental Management

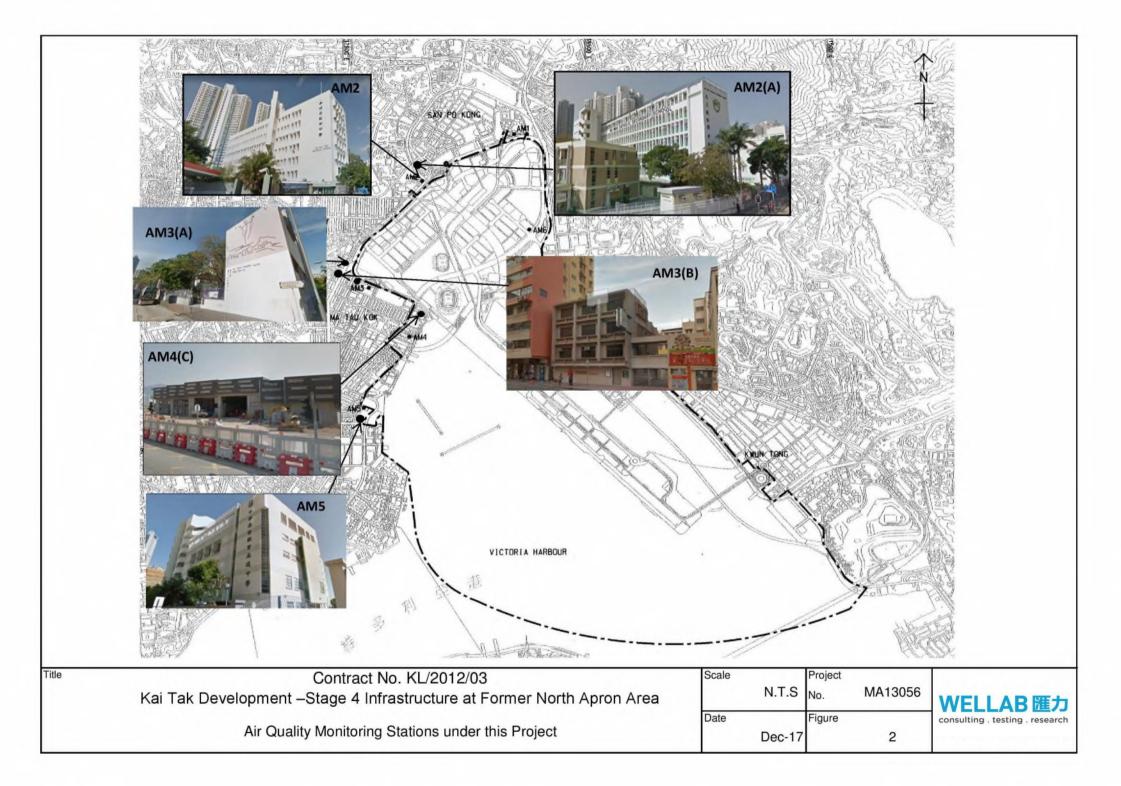
- 7.5 The above recommendations and the recommended mitigation measures in the EM&A Manual were carried out by the Contractor during construction. No non-compliance was recorded during the environmental site inspections as shown in **Appendix B**.
- 7.6 The effectiveness of environmental management is satisfactory as the above recommendations are met. Some of the examples of mitigation measures for the following recommendations are given in **Table 7.1** below.
 - Surface runoff discharge into any stream course is prevented;
 - Provision of sedimentation facilities after identification of wastewater discharges from site;
 - Discharge or accidental spillage of chemical waste or oil directly from the site is avoided;
 - Improper handling or storage of oil drum on site is avoided;
 - The existing trees to be retained are protected; and
 - Night-time lighting is controlled.

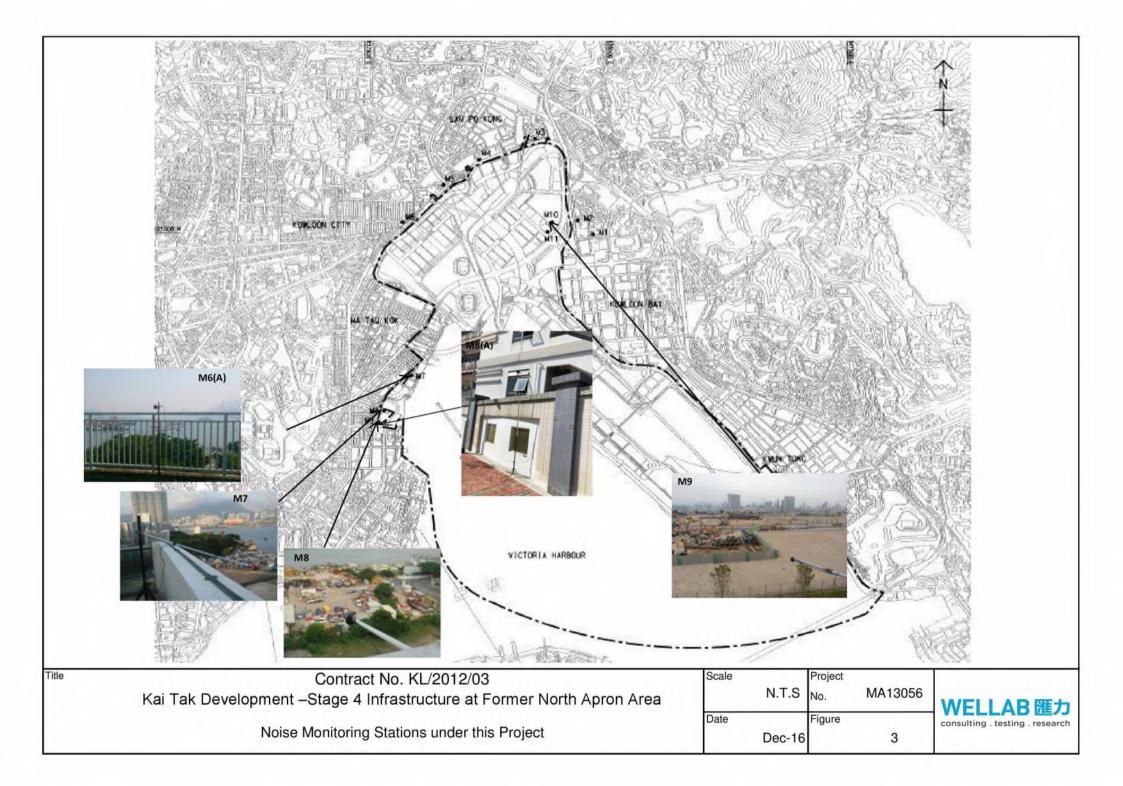
Table 7.1 Examples of Mitigation Measures for Environmental Recommendations

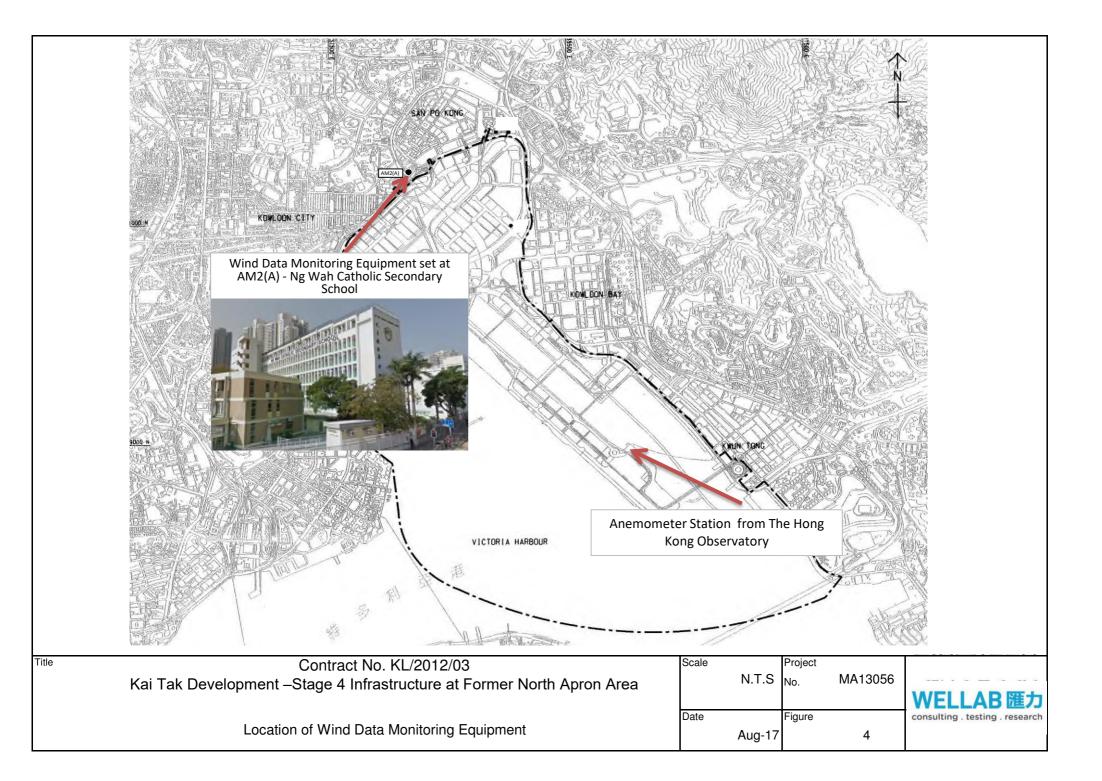


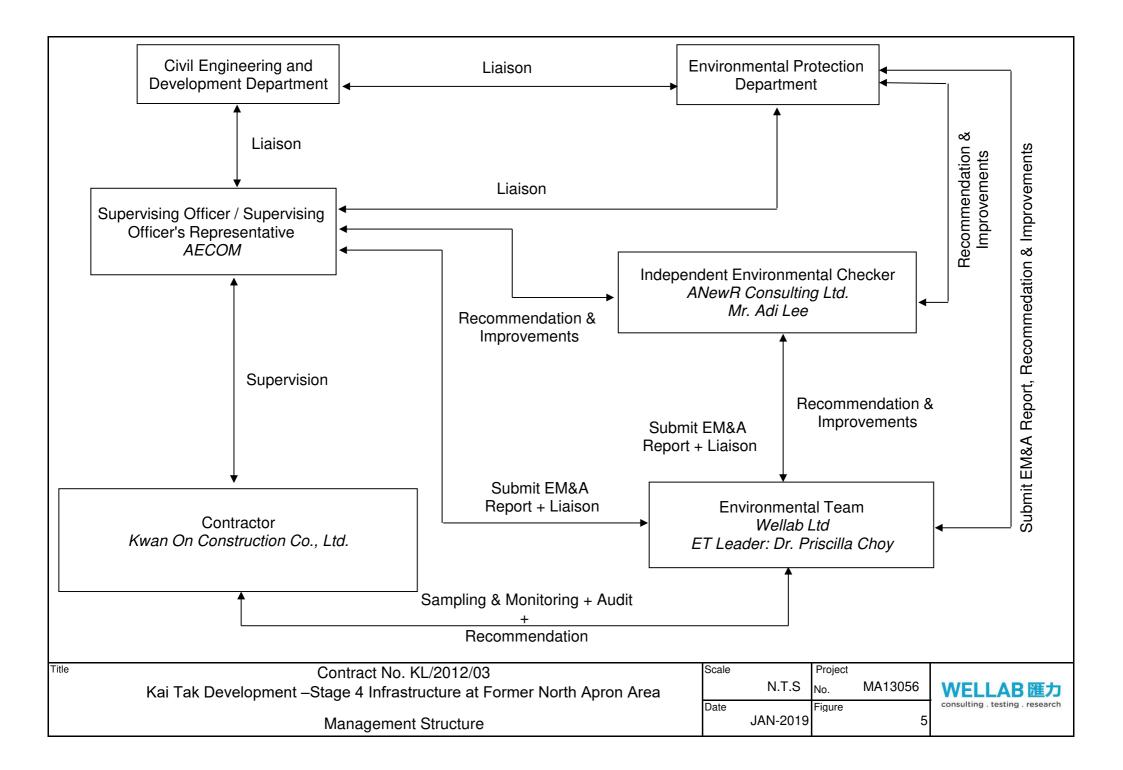
FIGURES











APPENDIX A ACTION AND LIMIT LEVELS

Appendix A - Action and Limit Levels

Location	Action Level, µg/m ³	Limit Level, µg/m ³
AM2	346	
AM3(A)	351	500
AM4(C)	371	500
AM5	345	

Table A-1Action and Limit Levels for 1-Hour TSP

1 able A-2 Action and Limit Levels for 24-Hour 18	Table A-2	Action and Limit Levels for 24-Hour TSI
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Location	Action Level, μg/m ³	Limit Level, µg/m ³
AM2(A)	157	
AM3(B)	167	260
AM4(C)	187	260
AM5	156	

Table A-3 Action and Limit Levels for Construction Noise

Time Period	Action Level	Limit Level
0700-1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A) 70dB(A)/65dB(A)*

Remarks: If works are to be carried out during restricted hours, the conditions stipulated in the Construction Noise Permit (CNP) issued by the Noise Control Authority have to be followed. *70dB(A) and 65dB(A) for schools during normal teaching periods and school examination periods, respectively.

APPENDIX B SITE AUDIT SUMMARY

Checklist Reference Number	190606
Date	6 June 2019
Time	10:00-12:00

		Related
Ref. No.	Non-Compliance	Item No
-	None identified	-
		Related
Ref. No.	Remarks/Observations	Item No
	B. Water Quality	
	No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	No environmental deficiency was identified during site inspection.	
	D. Noise	
	No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
	No environmental deficiency was identified during site inspection.	
	F. Visual and Landscape	
	No environmental deficiency was identified during site inspection.	
	G. Permits / Licenses	
	No environmental deficiency was identified during site inspection.	
	H. Others	
	• Follow-up on previous audit session (Ref. No. 190531), no major environmental deficiency was observed.	

	Name	Signature	Date
Recorded by	Eric Chan	2	10 June 2019
Checked by	Dr. Priscilla Choy	WI	10 June 2019

Contract No. KL/2012/03 Kai Tak Development - Stage 4 Infrastructure at Former North Apron Area EP-337/2009 - New Distributor Roads serving the Planned Kai Tak Development

Checklist Reference Number	190614
Date	14 June 2019
Time	10:00-12:00

		Related
Ref. No.	Non-Compliance	Item No.
-	None identified	м
		Related
Ref. No.	Remarks/Observations	Item No.
	B. Water Quality	
	No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	No environmental deficiency was identified during site inspection.	
	D. Noise	
	No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
	No environmental deficiency was identified during site inspection.	
	F. Visual and Landscape	
	No environmental deficiency was identified during site inspection.	
	G. Permits / Licenses	
	No environmental deficiency was identified during site inspection.	
	H. Others	
	• Follow-up on previous audit session (Ref. No. 190606), no major environmental deficiency was observed.	

	Name	Signature	Date
Recorded by	Eric Chan	24	17 June 2019
Checked by	Dr. Priscilla Choy	NA	17 June 2019

Checklist Reference Number	190619	
Date	19 June 2019	
Time	14:00-16:00	

		Related
Ref. No.	Non-Compliance	Item No
-	None identified	-
		Related
Ref. No.	Remarks/Observations	Item No
	B. Water Quality	
	No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	No environmental deficiency was identified during site inspection.	
	D. Noise	
 .	No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
	No environmental deficiency was identified during site inspection.	
	F. Visual and Landscape	
	No environmental deficiency was identified during site inspection.	
	G. Permits / Licenses	
	No environmental deficiency was identified during site inspection.	
	H. Others	
	• Follow-up on previous audit session (Ref. No. 190614), no major environmental deficiency was observed.	

	Name	Signature	Date
Recorded by	Eric Chan	7P	21 June 2019
Checked by	Dr. Priscilla Choy	WF	21 June 2019

Contract No. KL/2012/03 Kai Tak Development - Stage 4 Infrastructure at Former North Apron Area EP-337/2009 - New Distributor Roads serving the Planned Kai Tak Development

Checklist Reference Number	190624
Date	24 June 2019
Time	10:00-12:00

		Related
Ref. No.	Non-Compliance	Item No.
-	None identified	-
		Related
Ref. No.	Remarks/Observations	Item No
	B. Water Quality	
	No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	No environmental deficiency was identified during site inspection.	
	D. Noise	
	No environmental deficiency was identified during site inspection.	<u> </u>
	E. Waste / Chemical Management	· · · · · · · · · · · · · · · · · · ·
	No environmental deficiency was identified during site inspection.	
	F. Visual and Landscape	
	No environmental deficiency was identified during site inspection.	
	G. Permits / Licenses	
	No environmental deficiency was identified during site inspection.	
	H. Others	
	• Follow-up on previous audit session (Ref. No. 190619), no major environmental deficiency was observed.	

	Name	Signature	Date
Recorded by	Eric Chan	2-P	26 June 2019
Checked by	Dr. Priscilla Choy	NI	26 June 2019

Checklist Reference Number	190606
Date	6 June 2019
Time	10:00-12:00

Def Ne	New Correctioner	Related
Ref. No.	Non-Compliance None identified	Item No
-		- Dalata
Ref. No.	Remarks/Observations	Related
1	B. Water Quality	Trem Int
	No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	No environmental deficiency was identified during site inspection.	
· · ·	D. Noise	
	No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
	No environmental deficiency was identified during site inspection.	
	F. Visual and Landscape	
	No environmental deficiency was identified during site inspection.	
	G. Permits /Licences	
	No environmental deficiency was identified during site inspection.	
<u>.</u>	H. Others	
	• Follow-up on previous audit session (Ref. No. 190531), no major environmental deficiency was observed.	

	Name	Signature	Date
Recorded by	Eric Chan	2-P	10 June 2019
Checked by	Dr. Priscilla Choy	NEL	10 June 2019

Checklist Reference Number	190614
Date	14 June 2019
Time	10:00-12:00

Def Ma	New Generalized	Related
Ref. No.	Non-Compliance	Item No
н	None identified	-
Ref. No.	Remarks/Observations	Relate
Rel . 140.	B. Water Quality	Item No
	 No environmental deficiency was identified during site inspection. 	
	• No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	No environmental deficiency was identified during site inspection.	
	D. Noise	
	No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
	No environmental deficiency was identified during site inspection.	
	F. Visual and Landscape	
	No environmental deficiency was identified during site inspection.	
	G. Permits /Licences	
	No environmental deficiency was identified during site inspection.	
	H. Others	
	• Follow-up on previous audit session (Ref. No. 190606), no major environmental deficiency was observed.	

	Name	Signature	Date
Recorded by	Eric Chan	2-p	17 June 2019
Checked by	Dr. Priscilla Choy	WZ	17 June 2019

Contract No. KL/2012/03 Kai Tak Development - Stage 4 Infrastructure at Former North Apron Area EP-344/2009 - New Sewage Pumping Stations serving Kai Tak Development

Checklist Reference Number	190619	
Date	19 June 2019	
Time	14:00-16:00	

		Related
Ref. No.	Non-Compliance	Item No
~	None identified	-
		Related
Ref. No.	Remarks/Observations	Item No
	B. Water Quality	
	No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	No environmental deficiency was identified during site inspection.	
	D. Noise	
	No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
	No environmental deficiency was identified during site inspection.	
	F. Visual and Landscape	· ·
	No environmental deficiency was identified during site inspection.	
	G. Permits /Licences	
	No environmental deficiency was identified during site inspection.	
	H. Others	·
	• Follow-up on previous audit session (Ref. No. 190614), no major environmental	
	deficiency was observed.	

	Name	Signature	Date
corded by	Eric Chan	27	21 June 2019
ecked by	Dr. Priscilla Choy	WZ	21 June 2019
lecked by	Dr. Priscilla Choy	Wif	

Contract No. KL/2012/03 Kai Tak Development - Stage 4 Infrastructure at Former North Apron Area EP-344/2009 - New Sewage Pumping Stations serving Kai Tak Development

Checklist Reference Number	190624	
Date	24 June 2019	
Time	10:00-12:00	

		Related
Ref. No.	Non-Compliance	Item No
-	None identified	
		Related
Ref. No.	Remarks/Observations	Item No
	B. Water Quality	
	No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	No environmental deficiency was identified during site inspection.	
	D. Noise	
	No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
	No environmental deficiency was identified during site inspection.	
	F. Visual and Landscape	
	No environmental deficiency was identified during site inspection.	
	G. Permits /Licences	
	No environmental deficiency was identified during site inspection.	
	H. Others	
	• Follow-up on previous audit session (Ref. No. 190619), no major environmental	
	deficiency was observed.	

	Name	Signature	Date
Recorded by	Eric Chan	2-P	26 June 2019
Checked by	Dr. Priscilla Choy	WT	26 June 2019

APPENDIX C EVENT ACTION PLANS

Event/Action Plan for Air Quality

EVENT	ACTION				
	ET	IEC	ER	CONTRACTOR	
Action Level being	1. Identify source and investigate the	1. Check monitoring data submitted	1. Notify Contractor.	1. Rectify any unacceptable practice;	
exceeded by	causes of exceedance;	by ET;		2. Amend working methods if	
one sampling	2. Inform Contactor, IEC and ER;	2. Check Contractor's working		appropriate.	
	3. Repeat measurement to confirm finding.	method.			
Action Level being	1. Identify source and investigate the	1. Check monitoring data submitted	1. Confirm receipt of notification	1. Discuss with ET and IEC on proper	
exceeded by	causes of exceedance;	by ET;	of exceedance in writing;	remedial actions;	
two or more	2. Inform Contractor, IEC and ER;	2. Check Contractor's working	2. Notify Contractor;	2. Submit proposals for remedial	
consecutive	3. Increase monitoring frequency to daily;	method;	3. In consolidation with the IEC,	actions to ER and IEC within three	
sampling	4. Discuss with IEC and Contractor on	3. Discuss with ET and Contractor on	agree with the Contractor on the	working days of notification;	
	remedial actions required;	possible remedial measures;	remedial measures to be	3. Implement the agreed proposals;	
	5. Assess the effectiveness of	4. Advise the ER on the effectiveness	implemented;	4. Amend proposal if appropriate.	
	Contractor's remedial actions;	of the proposed remedial measures.	4. Supervise implementation of		
	6. If exceedance continues, arrange		remedial measures;		
	meeting with IEC and ER;		5. Conduct meeting with ET and		
	7. If exceedance stops, cease additional		IEC if exceedance continues.		
	monitoring.				
Limit Level being	1. Identify source and investigate the	1. Check monitoring data submitted	1. Confirm receipt of notification	1. Take immediate action to avoid	
exceeded by	causes of exceedance;	by ET;	of exceedance in writing;	further exceedance;	
one sampling	2. Inform Contractor, IEC, ER, and EPD;	2. Check Contractor's working	2. Notify Contractor;	2. Discuss with ET and IEC on proper	
	3. Repeat measurement to confirm finding;	method;	3. In consolidation with the IEC,	remedial actions;	
	4. Assess effectiveness of	3. Discuss with ET and Contractor on	agree with the Contractor on the	3. Submit proposals for remedial	
	Contractor's remedial actions and keep	possible remedial measures;	remedial measures to be	actions to ER and IEC within three	

	EPD, IEC and ER informed of	4. Advise the ER on the	implemented;	working days of notification;
	the results.	effectiveness of the proposed	4. Supervise implementation of	4. Implement the agreed proposals.
		remedial measures.	remedial measures;	
			5. Conduct meeting with ET and	
			IEC if exceedance continues.	
Limit Level being	1. Notify IEC, ER, Contractor and	1. Check monitoring data submitted	1. Confirm receipt of notification	1. Take immediate action to avoid
exceeded by	EPD;	by ET;	of exceedance in writing;	further exceedance;
two or more	2. Repeat measurement to confirm	2. Check Contractor's working	2. Notify Contractor;	2. Discuss with ET, ER and IEC on
consecutive	findings;	method;	3. In consolidation with the IEC,	proper remedial actions;
sampling	3. Carry out analysis of Contractor's	3. Discuss amongst ER, ET, and	agree with the Contractor on the	3. Submit proposals for remedial
	working procedures to identify source and	Contractor on the potential remedial	remedial measures to be	actions to IEC within three working
	investigate the causes of exceedance;	actions;	implemented;	days of notification;
	4. Increase monitoring frequency to	4. Review Contractor's remedial	4. Supervise implementation of	4. Implement the agreed proposals;
	daily;	actions whenever necessary to	remedial measures;	5. Submit further remedial actions if
	5. Arrange meeting with IEC, ER	assure their effectiveness and	5. If exceedance continues,	problem still not under control;
	and Contractor to discuss the	advise the ER accordingly.	consider stopping the Contractor	6. Stop the relevant portion of works
	remedial actions to be taken;		to continue working on that	as instructed by the ER until the
	6. Assess effectiveness of		portion of work which causes the	exceedance is abated.
	Contractor's remedial actions and		exceedance until the	
	keep EPD, IEC and ER informed		exceedance is abated.	
	of the results;			
	7. If exceedance stops, cease additional			
	monitoring.			

Event/Action Plan for Construction Noise

EVENT	ACTION					
	ET	IEC	ER	CONTRACTOR		
Action Level	1. Notify ER, IEC and Contractor;	1. Review the investigation	1. Confirm receipt of	1. Submit noise mitigation		
being	2. Carry out investigation;	results submitted by the ET;	notification of failure in	proposals to IEC and ER;		
exceeded	3. Report the results of investigation	2. Review the proposed remedial	writing;	2. Implement noise mitigation		
	to the IEC, ER and Contractor;	measures by the Contractor and	2. Notify Contractor;	proposals.		
	4. Discuss with the IEC and	advise the ER accordingly;	3. In consolidation with the	(The above actions should be		
	Contractor on remedial measures	3. Advise the ER on the	IEC, agree with the	taken within 2 working days after		
	required;	effectiveness of the proposed	Contractor on the remedial	the exceedance is identified)		
	5. Increase monitoring frequency to	remedial measures.	measures to be implemented;			
	check mitigation effectiveness.	(The above actions should be	4. Supervise the			
	(The above actions should be taken	taken within 2 working days after	implementation of remedial			
	within 2 working days after the	the exceedance is identified)	measures.			
	exceedance is identified)		(The above actions should be			
			taken within 2 working days			
			after the exceedance is			
			identified)			
Limit Level	1. Inform IEC, ER, Contractor and	1. Discuss amongst ER, ET, and	1. Confirm receipt of	1. Take immediate action to		
being	EPD;	Contractor on the potential	notification of failure in	avoid further exceedance;		
exceeded	2. Repeat measurements to confirm	remedial actions;	writing;	2. Submit proposals for remedial		
	findings;	2. Review Contractor's remedial	2. Notify Contractor;	actions to IEC and ER within 3		
	3. Increase monitoring frequency;	actions whenever necessary to	3. In consolidation with the	working days of notification;		
	4. Identify source and investigate the	assure their effectiveness and	IEC, agree with the	3. Implement the agreed		
	cause of exceedance;	advise the ER accordingly.	Contractor on the remedial	proposals;		

5. Carry out analysis of Contractor's	(The above actions should be	measures to be implemented;	4. Submit further proposal if
working procedures;	taken within 2 working days after	4. Supervise the	problem still not under control;
6. Discuss with the IEC, Contractor	the exceedance is identified)	implementation of remedial	5. Stop the relevant portion of
and ER on remedial measures		measures;	works as instructed by the ER
required;		5. If exceedance continues,	until the exceedance is abated.
7. Assess effectiveness of		consider stopping the	(The above actions should be
Contractor's remedial actions and		Contractor to continue	taken within 2 working days after
keep IEC, EPD and ER informed of		working on that portion of	the exceedance is identified)
the results;		work which causes the	
8. If exceedance stops, cease		exceedance until the	
additional monitoring.		exceedance is abated.	
(The above actions should be taken		(The above actions should be	
within 2 working days after the		taken within 2 working days	
exceedance is identified)		after the exceedance is	
		identified)	

Event/Action Plan for Landscape and Visual

EVENT	ACTION				
ACTION LEVEL	ET	IEC	ER	CONTRACTOR	
Design Check	1. Check final	1. Check report.	1. Undertake remedial design if necessary		
	design conforms to	2. Recommend			
	the requirements	remedial design if			
	of EP and prepare	necessary			
	report.				
Non-conformity on one occasion	1. Identify Source	1. Check report	1. Notify Contractor	1. Amend working methods	
	2. Inform IEC and	2. Check Contractor's	2. Ensure remedial measures are properly	2. Rectify damage and	
	ER	working method	implemented	undertake any necessary	
	3. Discuss remedial	3. Discuss with ET and		replacement	
	actions with IEC,	Contractor on possible			
	ER and Contractor	remedial measures			
	4. Monitor remedial	4. Advise ER on			
	actions until	effectiveness of			
	rectification has	proposed remedial			
	been completed	measures.			
		5. Check implementation			
		of remedial measures.			
Repeated Non-conformity	1. Identify Source	1. Check monitoring	1. Notify Contractor	1. Amend working methods	
	Inform IEC and	report	2. Ensure remedial measures are properly	2. Rectify damage and	

ER	2. Check Contractor's	implemented	undertake any necessary
2. Increase	working method		replacement
monitoring	3. Discuss with ET and		
frequency	Contractor on possible		
3. Discuss remedial	remedial measures		
actions with IEC,	4. Advise ER on		
ER and Contractor	effectiveness of		
4. Monitor remedial	proposed remedial		
actions until	measures		
rectification has	5. Supervise		
been completed	implementation of		
5. If non-conformity	remedial measures.		
stops, cease			
additional			
monitoring			

APPENDIX D ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE (EMIS)

Appendix D - Summary of Implementation Schedule of Mitigation Measures for Construction Phase

Types of Impacts	Mitigation Measures	Status
Impuets	8 times daily watering of the work site with active dust emitting activities. Implementation of dust suppression measures stipulated in Air Pollution Control (Construction Dust) Regulation. The following mitigation measures, good site practices and a comprehensive dust monitoring and audit programme are recommended to minimize cumulative dust impacts.	^
	 Stockpiling site(s) should be lined with impermeable sheeting and bunded. Stockpiles should be fully covered by impermeable sheeting to reduce dust emission. 	^
	 Misting for the dusty material should be carried out before being loaded into the vehicle. 	^
	 Any vehicle with an open load carrying area should have properly fitted side and tail boards. Material having the potential to create dust should not 	^
	 Material having the potential to create dual should not be loaded from a level higher than the side and tail boards and should be dampened and covered by a clean tarpaulin. 	^
	 The tarpaulin should be properly secured and should extent at least 300 mm over the edges of the sides and tailboards. The material should also be dampened if necessary before transportation. 	^
Construction Dust	 The vehicles should be restricted to maximum speed of 10 km per hour and confined haulage and delivery vehicle to designated roadways insider the site. On- site unpaved roads should be compacted and kept free of lose materials. 	۸
	 Vehicle washing facilities should be provided at every vehicle exit point. 	٨
	 The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituming materials or bardeeree. 	^
	 bituminous materials or hardcores. Every main haul road should be scaled with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet. 	٨
	 Every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the three sides. 	^
	 Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites. 	^

	Use of quiet PME, movable barriers barrier for Asphalt Paver, Breaker, Excavator and Hand-held breaker and full enclosure for Air Compressor, Bar Bender, Concrete Pump, Generator and Water Pump	^
	 Good Site Practice: Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program. Silencers or muttlers on construction equipment should 	^
	be utilized and should be properly maintained during the construction program.	N/A(1)
	 Mobile plant, if any, should be sited as far away from NSRs as possible. 	^
	 Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum. 	^
	 Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs. 	^
	 Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities. 	^
	Scheduling of Construction Works during School Examination Period	^
Construction Noise	 (i) Provision of low noise surfacing in a section of Road L2; and 	N/A
	(ii) Provision of structural fins	N/A
	 (i) Avoid the sensitive façade of class room facing Road L2 and L4; and 	N/A
	 (ii) Provision of low noise surfacing in a section of Road L2 & L4 	N/A
	 (i) Provision of low noise surfacing in a section of Road L4 before occupation of Site 111; and 	N/A
	(ii) Setback of building about 5m from site boundary.	N/A
	Setback of building about 35m to the northwest direction at 1L3 and 5m at Site 1L2.	N/A
	 avoid any sensitive façades with openable window facing the existing Kowloon City Road network; and 	N/A
	 (ii) for the sensitive facades facing the To Kwa Wan direction, either setback the facades by about 5m to the northeast direction or do not provide the facades with openable window. 	N/A

	(i) avoid any appoints founded with grantels window	
	 avoid any sensitive facades with openable window facing the existing To Kwa Wan Road or 	N/A
	 (ii) provision of 17.5m high noise tolerant building fronting To Kwa Wan Road and restrict the height of the residential block(s) located at less than 55m 	N/A
	 away from To Kwa Wan Road to no more than 25m above ground. avoid any sensitive facades with openable window facing the slip road connecting Prince Edward Road East and San Po Kong or other alternative mitigation measures and at-source mitigation measures for the surrounding new local roads to minimise the potential traffic noise impacts from the slip road 	N/A
	All the ventilation fans installed in the below will be provided with silencers or acoustics treatment. (i) SPS (ii) ESS (iii) Tunnel Ventilation Shaft (iv) EFTS depot	N/A N/A N/A N/A
	Installation of retractable roof or other equivalent measures	N/A
	The following mitigation measures are proposed to be incorporated in the design of the SPS at KTD, including:	
	 Dual power supply or emergency generator should be provided at all the SPSs to secure electrical power supply; 	N/A
	 Standby pumps should be provided at all SPSs to ensure smooth operation of the SPS during maintenance of the duty pumps; 	N/A
	 An alarm should be installed to signal emergency high 	N/A
Construction Water	 water level in the wet well at all SPSs; and For all unmanned SPSs, a remote monitor system connecting SPSs with the control station through telemetry system should be provided so that swift actions could be taken in case of malfunction of unmanned facilities. 	N/A
Quality	Land-based Construction	
	Construction Runoff	
	Exposed soil areas should be minimised to reduce the potential for increased siltation, contamination of runoff, and erosion. Construction runoff related impacts associated with the above ground construction activities can be readily controlled through the use of appropriate mitigation measures which include:	^
	 use of sediment traps adequate maintenance of drainage systems to prevent flooding and overflow 	^

Construction site should be provided with adequately designed perimeter channel and pre-treatment facilities and proper maintenance. The boundaries of critical areas of earthworks should be marked and surrounded by dykes or embankments for flood protection. Temporary ditches should be provided to facilitate runoff discharge into the appropriate watercourses, via a silt retention pond. Permanent drainage channels should incorporate sediment basins or traps and baffles to enhance deposition rates. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94.

Ideally, construction works should be programmed to minimise surface excavation works during the rainy season (April to September). All exposed earth areas should be completed as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means.

Sediment tanks of sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m³ capacity, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity is flexible and able to handle multiple inputs from a variety of sources and particularly suited to applications where the influent is pumped.

Open stockpiles of construction materials (for examples, aggregates, sand and fill material) of more than 50 m³ should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.

Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers.

Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events.

Oil interceptors should be provided in the drainage system and regularly cleaned to prevent the release of oils and grease into the storm water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain. ٨

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All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and located wheel washing bay should be provided at every site exit, and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains.

Drainage

It is recommended that on-site drainage system should be installed prior to the commencement of other construction activities. Sediment traps should be installed in order to minimise the sediment loading of the effluent prior to discharge into foul sewers. There should be no direct discharge of effluent from the site into the sea.

All temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge should be adequately designed for the controlled release of storm flows. All sediment control measures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rain storms. The temporarily diverted drainage should be reinstated to its original condition when the construction work has finished or the temporary diversion is no longer required.

All fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour WCZ.

Sewage Effluent

Construction work force sewage discharges on site are expected to be connected to the existing trunk sewer or sewage treatment facilities. The construction sewage may need to be handled by portable chemical toilets prior to the commission of the on-site sewer system. Appropriate numbers of portable toilets should be provided by a licensed contractor to serve the large number of construction workers over the construction site. The Contractor should also be responsible for waste disposal and maintenance practices.

Stormwater Discharges

Minimum distances of 100 m should be maintained between the existing or planned stormwater discharges and the existing or planned seawater intakes

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Debris and Litter	
In order to maintain water quality in acceptable conditions with regard to aesthetic quality, contractors should be required, under conditions of contract, to ensure that site management is optimised and that disposal of any solid materials. litter or wastes to marine waters does not occur	^
Construction Works at or in Close Proximity of Storm Culvert or Seafront	
The proposed works should preferably be carried out within the dry season where the flow in the drainage channel /storm culvert/ nullah is low.	۸
The use of less or smaller construction plants may be specified to reduce the disturbance to the bottom sediment at the drainage channel /storm culvert / nullah.	٨
Temporary storage of materials (e.g. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction materials should be located well away from any water courses during carrying out of the construction works.	^
Stockpiling of construction materials and dusty materials should be covered and located away from any water courses.	^
Construction debris and spoil should be covered up and/or disposed of as soon as possible to avoid being washed into the nearby water receivers.	^
Construction activities, which generate large amount of wastewater, should be carried out in a distance away from the waterfront, where practicable.	۸
Mitigation measures to control site runoff from entering the nearby water environment should be implemented to minimize water quality impacts. Surface channels should be provided along the edge of the waterfront within the work sites to intercept the runoff.	^
Construction effluent, site run-off and sewage should be properly collected and/or treated.	~
Any works site inside the storm water courses should be temporarily isolated, such as by placing of sandbags or silt curtains with lead edge at bottom and properly supported props to prevent adverse impact on the storm water quality.	^
Silt curtain may be installed around the construction activities at the seafront to minimize the potential impacts due to accidental spillage of construction materials.	^
Proper shoring may need to be erected in order to prevent soil/mud from slipping into the storm culvert/drainage channel/sea.	^

	Supervisory staff should be assigned to station on site to closely supervise and monitor the works	^
	Marine water quality monitoring and audit programme shall be implemented for the proposed sediment treatment operation.	۸
	 Good Site Practices It is not anticipated that adverse waste management related impacts would arise, provided that good site practices are adhered to. Recommendations for good site practices during construction activities include: Nomination of an approved person, such as a 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 Training of site personnel in proper waste management and chemical waste handling procedures Provision of sufficient waste disposal points and regular collection for disposal Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites) 	∧ ∧ ∧ ∧
Construction Waste Management	 Waste Reduction Measures Good management and control can prevent the generation of a significant amount of waste. Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include: Sort C&D waste from demolition of the remaining structures to recover recyclable portions such as metals 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 Encourage collection of aluminium cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force Any unused chemicals or those with remaining functional capacity should be recycled Proper storage and site practices to minimise the potential for damage or contamination of construction materials 	

Construction and Demolition Material Migation measures and good site practices should be incorporated into contract document to control potential construction measures include. • Where it is unnovidable to have transient stockpiles of OSD material within the Project work stockpiles should be located away from waterirons or trans as tra as possible. • Open stockpiles of construction materials on transient stockpiles should be located away from waterirons. • Open stockpiles of construction materials on transient stockpiles should be located away from waterirons. • Open stockpiles of construction materials on transient stockpiles in the stock and the		
 Incorporated into contract document to control potential environmental impact from handling and transportation of C&D material. The mitigation measures include: Where it is unavoidable to have transient stockpiles of C&D material within the Project work site pending collection for disposal, the transient stockpiles should be located away from waterions or storm drains as far as possible Open stockpiles of construction materials or construction wastes on site should be covered with tarapullin or similar fabric Skip holes for material transport should be totally enclosed by imparious sheeting Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving a construction site should be paved with concrete, bituminous materials or hardcores The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials tori the vehicle All dusty materials from the body or transfer operation so as to maintain the dusty materials wat The load of dusty materials carried by vehicle leaving a construction site should be covered anterials do not leak from the vehicle All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to nonitor the disposal of the supplic fill reception facilities, the material should consist entirely of inert construction waste and of size less than 250mm or other sizes as agreed with the Secretary of the Public Fill Committee. In order to monitor the disposal of the surplus CAD material at the designed public fill reception facility and to control fly tipping, a tip-ticket system as stipulated in the EWB TWB TWO. An independent Environmental Checker should be resonable for auditing the revormental dustion of the system. 	Construction and Demolition Material	
Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric Skip hoist for material transport should be totally enclosed by impervious sheeting Every vehicle should be washed to remove any dusty materials trom its body and wheels before leaving a construction site The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure dust materials do not leak from the vehicle All dusty materials should be be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet The leight from which excavated materials are dropped should be controlled to a minimum practical height to limit fugitive dust generation from unloading When delivering inert C&D material to public fill reception facilities, the material should consist entirely of inert construction waste and of size leas than 250mm or other sizes as agreed with the Secretary of the Public Fill Committee. In order to monitor the disposal of the surplus C&D material at the designed public fill reception facility and to control fity tipping, a trip-ticket system for Disposal of Construction and Demolition Materials' should be included as one of the contractual requirements and implemented by an Environmental Checker should be responsible for auditing the results of the system. Chemical Wastes After use, chemical wastes (for example, 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 collected by a licensed collector for disposal at the CWTF or other licensed facility, in accordance with the <i>Waste Disposal (Chemical Was</i>	 Incorporated into contract document to control potential environmental impact from handling and transportation of C&D material. The mitigation measures include: Where it is unavoidable to have transient stockpiles of C&D material within the Project work site pending collection for disposal, the transient stockpiles should be located away from waterfront 	^
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facilities, the material should consist entirely of inert construction waste and of size less than 250mm or other sizes as agreed with the Secretary of the Public Fill Committee. In order to monitor the disposal of the surplus C&D material at the designed public fill reception facility and to control fly tipping, a trip-ticket system as stipulated in the ETWB TCW No. 31/2004 "Trip Ticket System for Disposal of Construction and Demolition Materials" should be included as one of the contractual requirements and implemented by an Environmental Team undertaking the Environmental Monitoring and Audit work. An Independent Environmental Checker should be responsible for auditing the results of the system. Chemical Waste After use, chemical wastes (for example, 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 collected by a licensed collector for disposal at the CWTF or other licensed facility, in accordance with the Waste Disposal (Chemical Waste) <i>(General) Reaulation</i>	dropped should be controlled to a minimum practical height to limit fugitive dust generation	^
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D-8	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 collected by a licensed collector for disposal at the CWTF or other licensed facility, in accordance with the Waste Disposal (Chemical Waste)	^
	D-8	<u> </u>

	General Refuse	
	General refuse should be stored in enclosed bins or compaction units separate from C&D material. A licensed waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material. Effective collection and storage methods (including enclosed and covered area) of site wastes would be required to prevent waste materials from being blown around by wind, wastewater discharge by flushing or leaching into the marine environment, or creating odour nuisance or pest and vermin problem	~
	CM1 All existing trees should be carefully protected during construction.	^
Landscape and Visual	CM2 Trees unavoidably affected by the works should be transplanted where practical. Detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBC 2/2004 and 3/2006. Final locations of transplanted trees should be agreed prior to commencement of the work.	N/A
	CM3 Control of night-time lighting.	Λ
	CM4 Erection of decorative screen hoarding.	٨

Remarks:	 Compliance of mitigation measure;
	X Non-compliance of mitigation measure;
	N/A Not Applicable at this stage;
	N/A(1) Not observed;
	• Non-compliance but rectified by the contractor;
	* Recommendation was made during site audit but improved/rectified by the contractor.
	# Recommendation was made during site audit and to be improved / rectified by the contractor.

APPENDIX E SUMMARIES OF ENVIRONMENTAL COMPLAINT, WARNING, SUMMON AND NOTIFICATION OF SUCCESSFUL PROSECUTION

Contract No. KL/2012/03 Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area

Appendix E – Summary of environmental complaint, warning, summon and notification of successful prosecution

Reporting Month: June 2019

Log Ref.	Received Date	Details of Warning / Summons and Successful Prosecutions	Investigation/Mitigation Action	Status
N/A	N/A	N/A	N/A	N/A

Warnings / Summons and Successful Prosecutions received in the reporting month

Remarks: No warning/summon and prosecution were received in the reporting period.

Complaint Log

Cor	EPD mplaint ef No.	Date of Complaint	Complaint Details	Investigation / Mitigation Action	Status
]	N/A	N/A	N/A	N/A	N/A

APPENDIX F WASTE GENERATED QUANTITY

APPENDIX IV Monthly Summary Waste Flow Table

(PS Clause 1.86)

Name of Department: CEDD

Contract No. : KL/2012/03

Monthly Summary Waste Flow Table for June 2019 (year) (in tons)

			Actual	Quantities of In	nert C&D Mater	ials Generated N	Ionthly	Actu	al Quantities o	f C&D Wastes	Generated Mo	onthly
Month	Total Disposal Loads	Total Quantity Generated	Hard Rock & Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemicals Waste	Others, e.g. general refuse
	(No.s)	(in tons)	0	(in tons)	(in tons)	(in tons)	(in tons)	(in tons)	(in tons)	(in tons)	(in tons)	(in tons)
2013 (Oct - Dec) Sub-Total	108	463.69	0	0	0	0	0	0	0	0	0	463.69
2014 (Jan – Dec) Sub-Total	24	16925.7	0	0	16798.93	83.66	1804.27	0	0	0	0	43.11
2015 (Jan – Dec) Sub-Total	284	81859.97	0	0	38291.91	43457.21	19920	0	0	0	0	310.26
2016 (Jan – Dec) Sub-Total	3369	50762.64	0	0	0	49894.67	4020	0	0	0	0	867.95
2017 (Jan – Dec) Sub-Total	2737	39615.16	0	0	0	38996.26	0	0	0	0	0	603.11
2018 (Jan – Dec) Sub-Total	566	7483.57	0	0	0	6803.57	0	0	0	0	0	680
Jan-19	27	237.51	0	0	0	0	0	0	0	0	0	237.51
Feb-19	8	23.03	0	0	0	0	0	0	0	0	0	23.03
Mar-19	22	55.8	0	0	0	0	0	0	0	0	0	55.8
Apr-19	3	5.26	0	0	0	0	0	0	0	0	0	5.26
May-19	2	7.81	0	0	0	0	0	0	0	0	0	7.81
Jun-19	5	11.58	0	0	0	0	0	0	0	0	0	11.58
Total	7155	197451.72	0	0	55090.84	139235.4	25744.27	0	0	0	0	3309.11

APPENDIX G CONSTRUCTION PROGRAMME

			Jun				1	ul	20)19	Δ	ug		1	9	ept	
		7	4	21	30	7	1		31	7		21	31	7		21	30
1	Sung Wong Tai Road Plumbing and Drainage Base course Asphalt laying Road Marking Planting Resurfacing Temp. Traffic Arrangement Scraping and asphalt laying																
2	Pump Station NPS and PS2 NPS : FSI Scada system test Three days test Recycle wood installation Painting Window Glass installation External lighting & CCTV Planting Made good defects																
3	PS2 : FSI Scada system test Benching Three days test Fall arrest system Cladding Fence wall External lighting & CCTV Planting																
	Landscaping (Patch up) Road L6 footpath																

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Appendix B

Monthly EM&A Report For Contract No. KL/2014/01 Kai Tak Development - Stage 2 Infrastructure works for Developments at Southern Part of the Former Runway

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Civil Engineering and Development Department

EP-337/2009 & EP-445/2013/A

Contract No. KL/2014/01

Kai Tak Development – Stage 2 Infrastructure works for Developments at Southern Part of the Former Runway

Monthly EM&A Report June 2019

(Version 1.1)

Approved By	
	(Environmental Team Leader)

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

CINOTECH accepts no responsibility for changes made to this report by third parties

CINOTECH CONSULTANTS LTD Room 1710, Technology Park, 18 On Lai Street, Shatin, NT, Hong Kong Tel: (852) 2151 2083 Fax: (852) 3107 1388 Email: info@cinotech.com.hk



Ka Shing management consultant Limited Carbon Audit



Our ref: 10-7-2019 10-7-2019

By email: clive.cheng@aecom-ktd.com and By hand

Supervising Officer Representative Aecom Asia Co Ltd. 8/F Grand Central Plaza Tower 2 138 Shatin Rural Committee Road Sha Tin, N.T. Hong Kong (Attn: Mr. Cheng Chi Hung)

Dear Mr. Cheng,

Re: Contract No. KL/2014/01 (Environmental Permit Nos. EP-337/2009 and EP-445/2013/A) Kai Tak Development –Stage 2 Infrastructure Works for Developments at Southern Part of the Former Runway Monthly EM&A report for June 2019

Reference is made to the Environmental Team's submission of the draft Monthly EM&A Report (version 1.1) for June 2019 provided to Independent Environmental Checker (IEC) via email dated on 9 th July 2019 for review and comment.

Please be informed that IEC has no adverse comment on the captioned submission. IEC writes to verify the captioned submission in accordance with Specific Condition 2.2 of the Environmental Permit No. 337/2009 and 445/2013/A.

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

Yours faithfully,

c.c

For and on behalf of

Ka Shing Management Consultant Limited

Dr. C.F

Independent Environmental Checker

CEDD Mr. CHU Chi Hong, Keith AECOM Mr. Anthony Lok CEC-CCC Mr. Eric Fong Cinotech Mr K.S Lee (By email: keithchchu@cedd.gov.hk)(By email: anthony.lok@aecom-ktd.com)(By email: eric-cs-fong@continental-engineering.com)(By email: ks.lee@cinotech.com.hk)

Participation of the second



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八龍屯戸显育之日 2C 凱啟如商業入厦 13 倭 2 3 Tel: (852) 2618 2166 Fax: (852) 2120 7752 電話: (852) 2618 2166 傳真: (852) 2120 7752

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EXECUTIVE SUMMARY

Introduction

- This is the 39th Monthly Environmental Monitoring and Audit Report prepared by Cinotech Consultants Ltd. for "Contract No. KL/2014/01 - Kai Tak Development – Stage 2 Infrastructure Works for Developments at the Southern Part of the Former Runway" (Hereafter referred to as "the Project"). This contract work comprises two Schedule 2 designated projects (DP), namely the new distributor road D4 (part) and roads D3A & D4A serving the planned KTD. The DPs are part of the designated projects under Environmental Permits (EP) No.: EP-337/2009 ("New distributor roads serving the planned Kai Tak Development") and EP-445/2013/A ("Kai Tak Development – Roads D3A & D4A") respectively. This report documents the findings of EM&A Works conducted from 1-30 June 2019.
- 2. With reference to the same principle of EIA report of the Project, no air quality monitoring station within 500 m and noise monitoring station within 300 m from the boundary of this Project are considered as relevant monitoring locations. In such regard, no relevant air quality and noise monitoring location are required for monitoring under the Project. The monitoring works for recommended monitoring stations in EM&A Manual of the DPs are conducted by Kai Tak Development (KTD) Schedule 3 Project.
- 3. The major site activities undertaken in the reporting month included:
 - TTA implementation, junction improvement works at Shing Fung Road, Wang Chiu Road / Kai Cheung Road and Sheung Yee Road/Wang Chiu Road;;
 - Construction of box culvert and underpass;
 - Construction of utilities trough at Kai Tak Bridge;
 - Construction of pile caps, noise barrier footings and steel structures, outfalls, deck structure and columns;
 - Laying of sewer, drainage and pavement;
 - Erection of noise barrier steel structure and panels

Environmental Monitoring Works

- 4. Environmental monitoring for the Project was performed in accordance with the EM&A Manual and the monitoring results were checked and reviewed. Site Inspections/Audits were conducted once per week. The implementation of the environmental mitigation measures, Event Action Plans and environmental complaint handling procedures were also checked.
- 5. Summary of the non-compliance in the reporting month for the Project is tabulated in Table I.

 Table I
 Non-compliance Recorded for the Project in the Reporting Month

Parameter	No. of Project-rela	ted Exceedance	Action Taken
1 al alletel	Action Level	Limit Level	Action Taken
Noise	0	0	N/A

1

Environmental Monitoring for Air Quality and Construction Noise

6. No monitoring for air quality and construction noise is required. No Action/Limit Level exceedance was recorded.

Environmental Licenses and Permits

- Licenses/Permits granted to the Project include the Environmental Permits (EP) for the Project, EP-337/2009 issued on 23 April 2009 and EP-445/2013 issued on 3 May 2013 (Amended Environmental Permit (No.: EP-445/2013/A) issued on 13 August 2014).
- 8. Billing Account for Disposal of Construction Waste (A/C No. 7024073)
- 9. Registration of Chemical Waste Producer (License: 5213-247-C4004-01).
- 10. Water Discharge License (License: WT00023634-2016).
- 11. Construction Noise Permits (Permit: GW-RE0186-19, GW-RE0455-19)

Key Information in the Reporting Month

12. Summary of key information in the reporting month is tabulated in Table II.

Event	Event Details		Action Taken	Status	Remark
	Number	Nature	-		
Complaint received	0		N/A	N/A	
Reporting Changes	0		N/A	N/A	
Notifications of any summons & prosecutions received	0		N/A	N/A	

 Table II
 Summary Table for Key Information in the Reporting Month

Future Key Issues

13. The future key environmental issues in the coming month include:

- Dust generation from stockpiles of dusty materials, exposed site area, excavation works and rock breaking activities;
- Water spraying for dust generating activity and on haul road;
- Proper storage of construction materials on site;
- Storage of chemicals/fuel and chemical waste/waste oil on site;
- Accumulation of general and construction waste on site;
- Noise from operation of the equipment, especially for excavation activities and machinery on-site;
- Wastewater and runoff discharge from site;
- Regular removal of silt, mud and sand along u-channels and sedimentation tanks; and
- Review and implementation of temporary drainage system for the surface runoff.

1. INTRODUCTION

Background

- 1.1 The Kai Tak Development (KTD) is located in the south-eastern part of Kowloon Peninsula, comprising the apron and runway areas of the former Kai Tak Airport and existing waterfront areas at To Kwa Wan, Ma Tau Kok, Kowloon Bay, Kwun Tong and Cha Kwo Ling. It covers a land area of about 328 hectares. Stage 2 Infrastructure Works for Developments for Southern Part of the Former Runway is one of the construction stages of KTD. It contains two Schedule 2 DPs including new distributor roads serving the planned KTD and KTD Roads D3A & D4A. The general layout of the Project is shown in **Figure 1**.
- 1.2 One Environmental Permit (EP) No.: EP-337/2009 was issued on 23 April 2009 for new distributor roads serving the planned KTD and one Environmental Permit No.: EP-445/2013 was issued on 3 May 2013 for Kai Tak Development Roads D3A & D4A to Civil Engineering and Development Department (CEDD) as the Permit Holder. Pursuant to Section 13 of the EIAO, the Director of Environmental Protection Department amended the Environmental Permit No.: EP-445/2013 based on the Application No. VEP-449/2014 and the Environmental Permit (No.: EP-445/2013/A) was issued on 13 August 2014.
- 1.3 A study of environmental impact assessment (EIA) was undertaken to consider the key issues of air quality, noise, water quality, waste, land contamination, cultural heritage and landscape and visual impact, and identify possible mitigation measures associated with the works. EIA Reports (Register No. AEIAR-130/2009 and AEIAR-170/2013) were approved by the Environmental Protection Department (EPD) on 4 March 2009 and 3 May 2013 respectively.
- 1.4 Cinotech Consultants Limited (Cinotech) was commissioned by Civil Engineering and Development Department (CEDD) to undertake the role of the Environmental Team (ET) for the Contract No. KL/2014/01 Stage 2 Infrastructure Works for Developments at the Southern Part of the Former Runway. The construction work under KL/2014/01 comprises the construction of part of the Road D4 under the EP (EP-337/2009) and the construction of Roads D3A & D4A under the EP (EP-445/2013/A).
- 1.5 Cinotech Consultants Limited was commissioned by Civil Engineering and Development Department (CEDD) to undertake the Environmental Monitoring and Audit (EM&A) works for the Project. The construction commencement of this Contract is on 13 April 2016. This is the 39th Monthly EM&A report summarizing the EM&A works for the Project from 1 – 30 June 2019.
- 1.6 All project information since the commencement of work under EPs including Monthly EM&A Reports is made available to the public via internet access at the website: http://www.kl201401.com/

3

Project Organizations

- 1.7 Different parties with different levels of involvement in the project organization include:
 - Project Proponent Civil Engineering and Development Department (CEDD).
 - The Supervising Officer and the Supervising Officer's Representative (SO) AECOM Asia Co. Ltd. (AECOM).
 - Environmental Team (ET) Cinotech Consultants Limited (CCL).
 - Independent Environmental Checker (IEC) Ka Shing Management Consultant Ltd. (KSMC).
 - Contractor Continental Engineering Corp. and Chit Cheung Construction Co. Ltd. Joint Venture (CCJV).

Table 1	Table 1.1 Key Project Contacts						
Party	Party Role Contact Person		Position	Phone No.	Fax No.		
CEDD	Project	Mr. Keith Chu	Senior Engineer	3579 2450	3579		
	Proponent	Ms. Adonia Yung	Engineer	3579 2124	4516		
AECOM	Supervising Officer	Mr. Clive Cheng	CRE	3746 1801	2798 0783		
~ 1	otech Environmental Team	Mr. K S Lee	Environmental Team Leader	2151 2091	3107		
Cinotech		Ms. Betty Choi	Audit Team Leader	2151 2072	1388		
KSMC Independent Environmental I Checker		Dr. C. F. Ng	IEC	2618 2166	2120 7752		
ССЈУ	CCJV Contractor Mr. Dennis Ho		Environmental Officer	2960 1398	2960 1399		

1.8 The key contacts of the Project are shown in **Table 1.1**.

Construction Activities undertaken during the Reporting Month

- 1.9 The site activities undertaken in the reporting month included:
 - TTA implementation, junction improvement works at Shing Fung Road, Wang Chiu Road / Kai Cheung Road and Sheung Yee Road/Wang Chiu Road;
 - Construction of box culvert and underpass;
 - Construction of utilities trough at Kai Tak Bridge;
 - Construction of pile caps, noise barrier footings and steel structures, outfalls, deck structure and columns;
 - Laying of sewer, drainage and pavement;
 - Erection of noise barrier steel structure and panels

1.10 The construction programme showing the inter-relationship with environmental protection/mitigation measures is presented in Table 1.2.

Table 1.2 Construction Programme Showing the Inter-Relationship with Environmental Protection/Mitigation Measures

Construction Works	Major Environmental Impact	Control Measures
As mentioned in Section 1.8	Noise, dust impact, water quality and waste generation	Sufficient watering of the works site with active dust emitting activities; Properly cover the stockpiles; On-site waste sorting and implementation of trip ticket system; Appropriate desilting/sedimentation devices provided on site for treatment before discharge; Use of quiet plant and well-maintained construction plant; Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall; Provide mitigation measure to temporary use of chemicals; Provide sufficient mitigation measures as recommended in Approved EIA Report/Lease requirement.

Summary of EM&A Requirements

- 1.11 The EM&A programme requires construction noise monitoring, air quality monitoring, landscape and visual monitoring and environmental site audit. The EM&A requirements for each parameter are described in the following sections, including:
- All monitoring parameters;
- Action and Limit levels for all environmental parameters;
- Event Action Plans;
- Environmental requirements and mitigation measures, as recommended in the EM&A Manual under the EP.
- 1.12 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in Section 5 of this report.

2. AIR QUALITY

Monitoring Requirements

- 2.1 With reference to the same principle of EIA report of the Project, air quality monitoring station should be provided at the Air Sensitive Receivers (ASR) within 500 m from the boundary of this Project. Since the opening of the Centre of Excellence in Paediatrics (Children's Hospital) on 18 December 2019, the hospital is considered as the only relevant monitoring location and therefore the monitoring is required.
- 2.2 As the monitoring works for the hospital is covered by the Contract KL/2014/03 (Kai Tak Development Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway) at the monitoring station (KTD1a), the corresponding monitoring results for June 2019 should be accessed in the EM&A report for the reporting month. Appendix A shows the established Action and Limit Levels for the environmental monitoring works.

Observations

- 2.3 No monitoring for air quality is required for this report.
- 2.4 Site audits were carried out on a weekly basis to monitor and audit the timely implementation of air quality mitigation measures within the site boundaries of this Project. The summaries of site audits are attached in **Appendix C**.

3. NOISE

Monitoring Requirements

- 3.1 With reference to the same principle of EIA report of the Project, construction noise monitoring station should be provided at the Noise Sensitive Receivers (NSR) within 300 m from the boundary of this Project. Since the opening of the Centre of Excellence in Paediatrics (Children's Hospital) on 18 December 2019, the hospital is considered as the only relevant monitoring location and therefore the monitoring is required.
- 3.2 As the monitoring works for the hospital is covered by the Contract KL/2014/03 (Kai Tak Development Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway) at the monitoring station (KTD1a), the corresponding monitoring results for June 2019 should be accessed in the EM&A report for the reporting month. Appendix A shows the established Action and Limit Levels for the environmental monitoring works.

Observations

- 3.3 No monitoring for construction noise is required for this report. No Action/Limit Level exceedance was recorded. The summary of exceedance record in reporting month is shown in **Appendix B**.
- 3.4 Site audits were carried out on a weekly basis to monitor and audit the timely implementation of construction noise mitigation measures within the site boundaries of this Project. The summaries of site audits are attached in **Appendix C**.

4. LANDSCAPE AND VISUAL

Monitoring Requirements

4.1 According to EM&A Manual of the Kai Tak Development EIA Study, ET shall monitor and audit the contractor's operation during the construction period on a weekly basis, and to report on the contractor's compliance.

Results and Observations

- 4.2 Site audits were carried out on a weekly basis to monitor and audit the timely implementation of landscape and visual mitigation measures within the site boundaries of this Project. The summaries of site audits are attached in **Appendix C**.
- 4.3 No non-compliance of the landscape and visual impact was recorded in the reporting month.
- 4.4 Should non-compliance of the landscape and visual impact occur, action in accordance with the action plan presented in **Appendix D** shall be performed.

5. ENVIRONMENTAL AUDIT

Site Audits

- 5.1 Site audits were carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site. The summaries of site audits are attached in **Appendix C**.
- 5.2 Site audits were conducted by representatives of the Contractor, Supervising Officer and ET on 5, 13, 19 and 26 June 2019 in the reporting month. IEC joint site inspection was conducted on 26 June 2019. No non-compliance was observed during the site audits.

Status of Environmental Licensing and Permitting

5.3 All permits/licenses obtained for the Project are summarized in Table 5.1.

Permit No.	Valid Period		Details	Status
reriiit ivo.	From	То	Details	Status
Environmental Per	mit (EP)			
EP-337/2009	23/04/09	N/A	Construction of new distributor roads serving the planned Kai Tak development.	Valid
EP-445/2013/A	13/08/14	N/A	Construction of Kai Tak Development roads D3A and D4A	Valid
Effluent Discharge L	icense	•		
WT00023634-2016 31/03/21		31/03/21	Wastewater from the construction site including effluent treated by screen and sedimentation tank	Valid
Registration of Chem	ical Waste F	Producer		
5213-247-C4004-01	5213-247-C4004-01 N/A Chemical Waste Types: Surplus paint, waste contaminated by paint, diesel, waste contaminated by diesel, spent lubricating oil and waste, soil contaminated by lubricating oil.		Valid	
Construction Noise P	ermit (CNP))		
GW-RE0186-19	16/03/19	15/06/19	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work other than	Valid
GW-RE0455-19	15/06/19	14/12/19	percussive pilling and performing prescribed construction work.	Valid

Table 5.1 Summary of Environmental Licensing and Permit Status

Status of Waste Management

5.4 The amount of wastes generated by the major site activities of this Project during the reporting month is shown in **Appendix G**.

5.5 In respect of the dump truck cover, the Contractor is reminded to take record photos and inspection to ensure that all dump trucks have fully covered the skip before leaving the site.

Implementation Status of Environmental Mitigation Measures

5.6 During site inspections in the reporting month, no non-conformance was identified. ET weekly site inspections were carried out during the reporting month and the observations and recommendations are summarized in Table 5.2.

Table 3.2 Observations and recommendations of Site Inspections				
Parameters	Date	Observations and	Follow-up	
		Recommendations		
Water Quality	29 May 2019 Ponding at Urban Room R		The condition was observed to be improved/rectified by the contractor during the audit session on 5 June 2019.	
Air Quality	5 June 2019	<u>Reminder:</u> The stockpile should be completely covered to minimize dust nuisance.	The condition was observed to be improved/rectified by the contractor during the audit session on 13 June 2019.	
Noise	Noise			
Waste/	19 June 2019	Reminder: General waste at Urban Room B should be cleared regularly to avoid accumulation.	The condition was observed to be improved/rectified by the contractor during the audit session on 26 June 2019.	
Chemical Management	26 June 2019	<u>Reminder:</u> General near site office should be cleared regularly to avoid accumulation.	Follow up actions will be reported in the next monthly report.	
Landscape and Visual				
Permits/ Licences				

Table 5.2 Observations and Recommendations of Site Inspections

Summary of Mitigation Measures Implemented

5.7 An updated summary of the EMIS is provided in **Appendix E**.

Implementation Status of Event Action Plans

5.8 The Event Action Plans for noise and landscape and visual are presented in AppendixD. No Event Action Plan for air quality is considered necessary.

Construction Noise

5.9 No Action/Limit Level exceedance was recorded in the reporting month.

Landscape and visual

5.10 No non-compliance was recorded in the reporting month.

Summary of Complaint, Warning, Notification of any Summons and Successful Prosecution

5.11 The summaries of environmental complaint, warning, summon and notification of successful prosecution for the Project is presented in **Appendix F**.

6. FUTURE KEY ISSUES

- 6.1 Major site activities undertaken for the coming two months include:
 - TTA implementation, junction improvement works at Shing Fung Road, Wang Chiu Road / Kai Cheung Road and Sheung Yee Road/Wang Chiu Road;
 - Construction of box culvert and underpass;
 - Construction of utilities trough at Kai Tak Bridge;
 - Construction of pile caps, noise barrier footings and steel structure, outfalls, deck structure and columns;
 - Laying of sewer, drainage and pavement;
 - Erection of noise barrier steel structure and panels
 - 6.2 Key environmental issues in the coming month include:
 - Wastewater and runoff discharge from site;
 - Regular removal of silt, mud and sand along u-channels and sedimentation tanks;
 - Review and implementation of temporary drainage system for the surface runoff;
 - Noise from operation of the equipment, especially for rock-breaking activities, piling works and machinery on-site;
 - Dust generation from stockpiles of dusty materials, exposed site area, excavation works and rock breaking activities;
 - Water spraying for dust generating activity and on haul road;
 - Proper storage of construction materials on site;
 - Storage of chemicals/fuel and chemical waste/waste oil on site;
 - Accumulation of general and construction waste on site

6.3 The tentative program of major site activities and the impact prediction and control measures for the coming two months, i.e. July and August 2019 are summarized as follows:

Construction Works	Major Impact Prediction	Control Measures
As mentioned in Section 7.1	Air quality impact (dust) Water quality impact (surface run-off)	 a) Frequent watering of haul road and unpaved/exposed areas; b) Frequent watering or covering stockpiles with tarpaulin or similar means; and c) Watering of any earth moving activities. a) Diversion of the collected effluent to de-silting facilities for treatment prior to discharge to public storm water drains; b) Provision of adequate de-silting facilities for treating surface run-off and other collected effluents prior to discharge; c) Provision of perimeter protection such as sealing of hoarding footings to avoid run-off from entering the existing storm water drainage system via public road; and d) Provision of measures to prevent discharge into the stream.
	Noise Impact	 a) Scheduling of noisy construction activities if necessary to avoid persistent noisy operation; b) Controlling the number of plants use on site; c) Regular maintenance of machines; and
		d) Use of acoustic barriers if necessary.

7. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

7.1 The Environmental Monitoring and Audit (EM&A) Report presents the EM&A works undertaken during the period from 1 to 30 June 2019.

Air Quality and Construction Noise

7.2 No regular monitoring air quality and noise monitoring is required for the Project. No Action/Limit Level exceedance was recorded.

Landscape and visual

7.3 No non-compliance was recorded in the reporting month.

Complaint and Prosecution

- 7.4 No environmental complaints and environmental prosecution were received in the reporting month.
- 7.5 The ET will keep track on the EM&A programme to ensure compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

Recommendations

7.6 According to the environmental audit performed in the reporting month, the following recommendations were made:

Air Quality

• To properly cover the dusty stockpile to prevent dust generation.

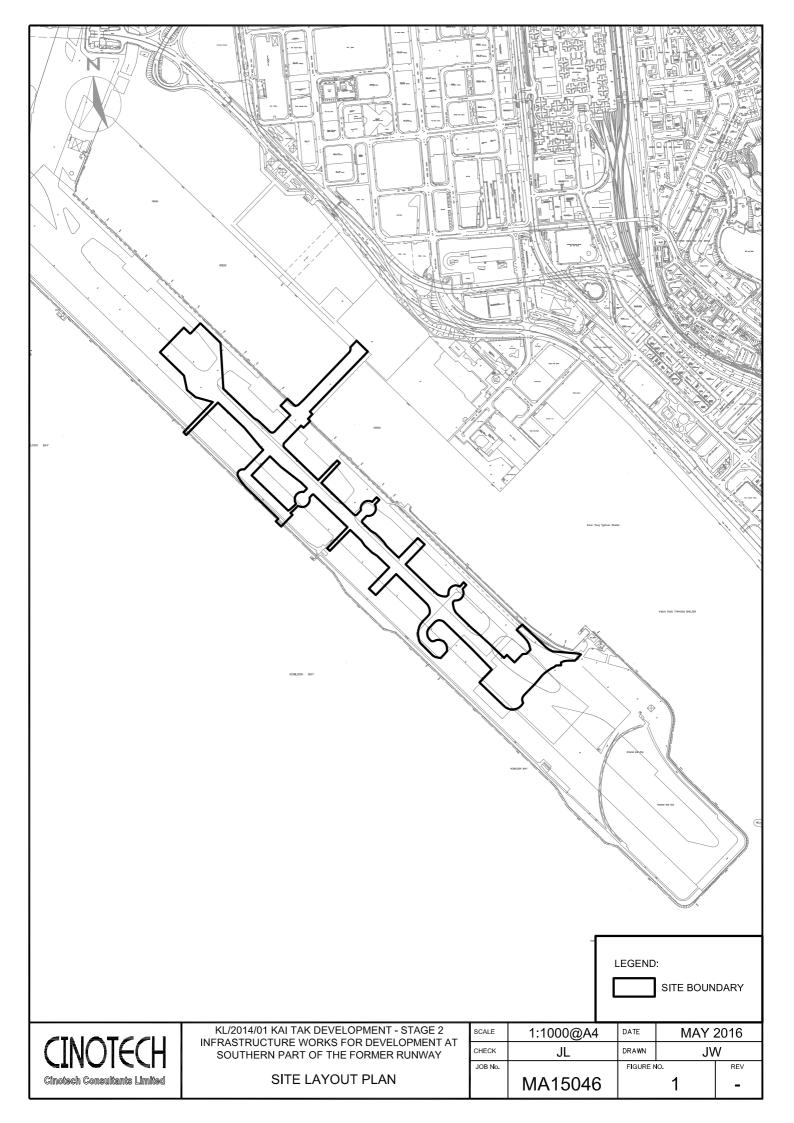
Water Quality

• To avoid ponding within landscape deck.

Waste/ chemical management

• To avoid the accumulation of general refuse.

FIGURES



APPENDIX A ACTION AND LIMIT LEVELS

Appendix A - Action and Limit Levels

Monitoring Station	Parameter	Action Level (μg/ m ³)	$ Limit \ Level^{(1)(2)} \\ (\mu g/\ m^3) $
KTD1a 24-hr TSP		177	260
KTD1a*	KTD1a [*] 1-hr TSP		500

Table A-1 Action and Limit Levels for Air Quality Monitoring

* 1-hr TSP monitoring should be required in case of complaints.

Table A-2	Action and Limit Levels for Construction Noise Monitoring
I abit A-2	Action and Limit Levels for Construction Noise Monitoring

Time Period	Action Level	Limit Level ⁽¹⁾⁽²⁾
0700-1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A) 70dB(A)/65dB(A)*

Remarks: (1) If works are to be carried out during restricted hours, the conditions stipulated in the Construction Noise Permit (CNP) issued by the Noise Control Authority have to be followed.

(2) No regular noise impact monitoring station for this Contract. It is subject to the noise sensitive receiver(s) and additional monitoring work.

(*) 70dB(A) and 65dB(A) for schools during normal teaching periods and school examination periods respectively.

APPENDIX B SUMMARY OF EXCEEDANCE

Contract No. KL/2014/01 Kai Tak Development –Stage 2 Infrastructure Works for Developments at the Southern Part of the Former Runway

Appendix B – Summary of Exceedance

Exceedance Record for Contract No. KL/2014/01

Reporting Month: June 2019

(A) Exceedance Record for Construction Noise

(NIL in the reporting month)

(B) Exceedance Record for Landscape and Visual

(NIL in the reporting month)

APPENDIX C SITE AUDIT SUMMARY

Checklist Reference Number	190605
Date	5 June 2019 (Wednesday)
Time	14:00 - 16:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	B. Water Quality	
	No environmental deficiency was identified during site inspection.	
	C. Air Quality	
R-01	Stockpile at NCW should be covered by impervious materials or levelled to reduce dust nuisance.	C7
	D. Noise	
	No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
	No environmental deficiency was identified during site inspection.	
	F. Visual and Landscape	
	No environmental deficiency was identified during site inspection.	
	G. Permits /Licenses	
	No environmental deficiency was identified during site inspection.	
	H. Others	
	• Follow-up on previous audit session (Ref. No.:190529): All environmental deficiencies identified in the previous audit were rectified/improved by the Contractor.	

	Name	Signature	Date
Recorded by	Jeffrey Lo	GJ.	5 June 2019
Checked by	Karina Chan	Jell.	5 June 2019

Checklist Reference Number	190613
Date	13 June 2019 (Thursday)
Time	14:00 - 15:15

		Related
Ref. No.	Non-Compliance	Item No
-	None identified	-
		Related
Ref. No.	Remarks/Observations	Item No
	B. Water Quality	
	No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	No environmental deficiency was identified during site inspection.	
	D. Noise	
	No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
	No environmental deficiency was identified during site inspection.	
	F. Visual and Landscape	
	No environmental deficiency was identified during site inspection.	
	G. Permits /Licenses	
	No environmental deficiency was identified during site inspection.	
	H. Others	
	• Follow-up on previous audit session (Ref. No.:190605): All environmental deficiencies identified in the previous audit were rectified/improved by the Contractor.	

	Name	Signature	Date
Recorded by	Jeffrey Lo	GN.	13 June 2019
Checked by	Karina Chan	Jell	13 June 2019

Checklist Reference Number	190619
Date	19 June 2019 (Wednesday)
Time	14:45 - 16:30

D.C.N.	New Comeliance	Related
Ref. No.	Non-Compliance	Item No
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No
	B. Water Quality	
	No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	No environmental deficiency was identified during site inspection.	
	D. Noise	
	No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
R-01	• General waste at Urban Room B should be cleared regularly to avoid accumulation.	E1
	F. Visual and Landscape	
	No environmental deficiency was identified during site inspection.	
	G. Permits /Licenses	
	No environmental deficiency was identified during site inspection.	
	H. Others	
	• Follow-up on previous audit session (Ref. No.:190613): No major environmental deficiency was identified in the previous audit.	

	Name	Signature	Date
Recorded by	Jeffrey Lo	GT.	19 June 2019
Checked by	Karina Chan	Jel.	19 June 2019

Checklist Reference Number	190626
Date	26 June 2019 (Wednesday)
Time	14:30 - 16:00

DAN		Related
Ref. No.	Non-Compliance	Item No
-	None identified	-
		Related
Ref. No.	Remarks/Observations	Item No
	B. Water Quality	
	No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	No environmental deficiency was identified during site inspection.	
	D. Noise	
	No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
R-01	General waste near site office should be cleared regularly to avoid accumulation.	E1
	F. Visual and Landscape	
	No environmental deficiency was identified during site inspection.	
	G. Permits /Licenses	
	No environmental deficiency was identified during site inspection.	
	H. Others	
	• Follow-up on previous audit session (Ref. No.:190619): All environmental deficiencies identified in the previous audit were rectified/improved by the Contractor.	

	Name	Signature	Date
Recorded by	Jeffrey Lo	GT.	26 June 2019
Checked by	Karina Chan	All	26 June 2019

APPENDIX D EVENT ACTION PLANS

Appendix D - Event Action Plans

Event/Action Plan for Construction Noise

EVENT	ACTION					
	ET	IEC	ER	CONTRACTOR		
Action Level being exceeded	 Notify ER, IEC and Contractor; Carry out investigation; Report the results of investigation to the IEC, ER and Contractor; Discuss with the IEC and Contractor on remedial measures required; Increase monitoring frequency to check mitigation effectiveness. (The above actions should be taken within 2 working days after the exceedance is identified) 	 Review the investigation results submitted by the ET; Review the proposed remedial measures by the Contractor and advise the ER accordingly; Advise the ER on the effectiveness of the proposed remedial measures. (The above actions should be taken within 2 working days after the exceedance is identified) 	 Confirm receipt of notification of failure in writing; Notify Contractor; In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; Supervise the implementation of remedial measures. (The above actions should be taken within 2 working days after the exceedance is identified) 	 Submit noise mitigation proposals to IEC and ER; Implement noise mitigation proposals. (The above actions should be taken within 2 working days after the exceedance is identified) 		
Limit Level being exceeded	 Inform IEC, ER, Contractor and EPD; Repeat measurements to confirm findings; Increase monitoring frequency; Identify source and investigate the cause of exceedance; Carry out analysis of Contractor's working procedures; Discuss with the IEC, Contractor and ER on remedial measures required; Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; If exceedance stops, cease additional monitoring. The above actions should be taken within 2 working days after the exceedance is identified) 	 Discuss amongst ER, ET, and Contractor on the potential remedial actions; Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly. (The above actions should be taken within 2 working days after the exceedance is identified) 	 Confirm receipt of notification of failure in writing; Notify Contractor; In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; Supervise the implementation of remedial measures; If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance until the exceedance is abated. (The above actions should be taken within 2 working days after the exceedance is identified) 	 Take immediate action to avoid further exceedance; Submit proposals for remedial actions to IEC and ER within 3 working days of notification; Implement the agreed proposals; Submit further proposal if problem still not under control; Stop the relevant portion of works as instructed by the ER until the exceedance is abated. (The above actions should be taken within 2 working days after the exceedance is identified) 		

Appendix D - Event Action Plans

Event/Action Plan for Landscape and Visual

EVENT ACTION		ACTION				
LEVEL	ET	IEC	ER	CONTRACTOR		
Design Check	 Check final design conforms to the requirements of EP and prepare report. 	 Check report. Recommend remedial design if necessary 	 Undertake remedial design if necessary 			
Non- conformity on one occasion	 Identify Source Inform IEC and ER Discuss remedial actions with IEC, ER and Contractor Monitor remedial actions until rectification has been completed 	 Check report Check Contractor's working method Discuss with ET and Contractor on possible remedial measures Advise ER on effectiveness of proposed remedial measures. Check implementatio n of remedial measures. 	 Notify Contractor Ensure remedial measures are properly implemented 	 Amend working methods Rectify damage and undertake any necessary replacement 		
Repeated Non- conformity	 Identify Source Inform IEC and ER Increase monitoring frequency Discuss remedial actions with IEC, ER and Contractor Monitor remedial actions until rectification has been completed If non- conformity stops, cease additional monitoring 	 Check monitoring report Check Contractor's working method Discuss with ET and Contractor on possible remedial measures Advise ER on effectiveness of proposed remedial measures Supervise implementatio n of remedial measures. 	 Notify Contractor Ensure remedial measures are properly implemented 	 Amend working methods Rectify damage and undertake any necessary replacement 		

APPENDIX E ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE (EMIS)

EIA Ref.	Mitigation Measures	Status		
Construction Air Qu	Construction Air Quality			
S3.2 (AEIAR-130/2009)	8 times daily watering of the work site with active dust emitting activities.	٨		
(AEIAR-130/2003) S4.8 (AEIAR-170/2013)	Control measures stipulated in the approved KTD Schedule 3 EIA Report should be strictly followed.	٨		
S3.2 (AEIAR-130/2009) and S4.8	Implementation of dust suppression measures stipulated in Air Pollution Control (Construction Dust) Regulation. The following mitigation measures, good site practices and a comprehensive dust monitoring and audit programme are recommended to minimize cumulative dust impacts.			
(AEIAR-170/2013)	 Stockpiling site(s) should be lined with impermeable sheeting and bunded. Stockpiles should be fully covered by impermeable sheeting to reduce dust emission. Misting for the dusty material should be carried out before being loaded into the 	^		
	 Any vehicle with an open load carrying area should have properly fitted side and tail boards. 			
	 Material having the potential to create dust should not be loaded from a level higher than the side and tail boards and should be dampened and covered by a clean tarpaulin. 	^		
	 The tarpaulin should be properly secured and should extent at least 300 mm over the edges of the sides and tailboards. The material should also be dampened if necessary before transportation. 	^		
	 The vehicles should be restricted to maximum speed of 10 km per hour and confined haulage and delivery vehicle to designated roadways insider the site. Onsite unpaved roads should be compacted and kept free of lose materials. 	^		
	• Vehicle washing facilities should be provided at every vehicle exit point.	^		

Appendix E - Summary of Implementation Schedule of Mitigation Measures for Construction Phase

EIA Ref.	Mitigation Measures	Status
	 The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores. Every main haul road should be scaled with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet. Every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the three sides; and Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites. 	∧ ∧ ∧
Construction Noise		
S3.3 (AEIAR-130/2009)	Use of quiet PME, movable barriers barrier for Asphalt Paver, Breaker, Excavator and Hand-held breaker and full enclosure for Air Compressor, Bar Bender, Concrete Pump, Generator and Water Pump.	^
S3.3 (AEIAR-130/2009)	Good Site Practice:	
(AEIAK-130/2009)	• Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program.	^
	• Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program.	٨
	 Mobile plant, if any, should be sited as far away from NSRs as possible. 	^
	 Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum. 	٨
	 Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs. 	٨
	• Material stockpiles and other structures should be effectively utilized, wherever	^

EIA Ref.	Mitigation Measures	Status
	practicable, in screening noise from on-site construction activities.	
S3.3 (AEIAR-130/2009)	Scheduling of Construction Works during School Examination Period	N/A
S3.8 (AEIAR-170/2013)	Provision of a landscaped deck along Roads D3A & D4A.	N/A
S3.8 (AEIAR-170/2013)	 Provision of about 1090 m length of vertical noise barrier (connected to the deck) at Roads D3A & D4A; Provision of about 60 m length of overhang vertical noise barrier (connected to the deck) at Road D4A; and Provision of staircases with noise barriers next to Sites 4A1 and 4B1 It should be noted that the exact length of the mitigation measures would be subject to minor refinement during the detailed design stage. 	N/A N/A N/A
S3.8 (AEIAR-170/2013)	Non-noise sensitive use areas within Sites 4A1 and 4B1.	N/A
S3.8 (AEIAR-170/2013)	Avoid sensitive façade with openable window facing Road D3A.	N/A
Construction Water	Quality	
S3.4 (AEIAR-130/2009) and S5.8 (AEIAR-170/2013)	 <u>Construction Runoff</u> Exposed soil areas should be minimised to reduce the potential for increased siltation, contamination of runoff, and erosion. Construction runoff related impacts associated with the above ground construction activities can be readily controlled through the use of appropriate mitigation measures which include: use of sediment traps adequate maintenance of drainage systems to prevent flooding and overflow 	∧ ∧

EIA Ref.	Mitigation Measures	Status
	Construction site should be provided with adequately designed perimeter channel and pre- treatment facilities and proper maintenance. The boundaries of critical areas of earthworks should be marked and surrounded by dykes or embankments for flood protection. Temporary ditches should be provided to facilitate runoff discharge into the appropriate watercourses, via a silt retention pond. Permanent drainage channels should incorporate sediment basins or traps and baffles to enhance deposition rates. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94.	٨
	Ideally, construction works should be programmed to minimise surface excavation works during the rainy season (April to September). All exposed earth areas should be completed as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means.	٨
S5.8 (AEIAR-170/2013)	Earthworks final surfaces should be well compacted and the subsequent permanent work or surface protection should be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate drainage like intercepting channels should be provided where necessary.	٨
	Measures should be taken to minimize the ingress of rainwater into trenches. If excavation of trenches in wet seasons is necessary, they should be dug and backfilled in short sections. Rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.	٨
S3.4 (AEIAR-130/2009)	Sediment tanks of sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m ³ capacity, are recommended as a general mitigation measure	٨

EIA Ref.	Mitigation Measures	Status
	which can be used for settling surface runoff prior to disposal. The system capacity is flexible and able to handle multiple inputs from a variety of sources and particularly suited to applications where the influent is pumped.	
S3.4 (AEIAR-130/2009) and S5.8 (AEIAR-170/2013)	Open stockpiles of construction materials (for examples, aggregates, sand and fill material) of more than 50 m ³ should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.	*
(Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers.	^
S3.4 (AEIAR-130/2009)	Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events.	^
	Oil interceptors should be provided in the drainage system and regularly cleaned to prevent the release of oils and grease into the storm water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain.	^
S3.4 (AEIAR-130/2009) and S5.8 (AEIAR-170/2013)	All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and located wheel washing bay should be provided at every site exit, and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting	^

EIA Ref.	Mitigation Measures	Status
	from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains.	
S5.8 (AEIAR-170/2013)	Boring and Drilling Water Water used in ground boring and drilling for site investigation or rock / soil anchoring should as far as practicable be re-circulated after sedimentation. When there is a need for final disposal, the wastewater should be discharged into storm drains via silt removal facilities.	٨
	Acid Cleaning, Etching and Pickling Wastewater Acidic wastewater generated from acid cleaning, etching, pickling and similar activities should be neutralized to within the pH range of 6 to 10 before discharging into foul sewers	^
S3.4	Drainage	
(AEIAR-130/2009)	It is recommended that on-site drainage system should be installed prior to the commencement of other construction activities. Sediment traps should be installed in order to minimise the sediment loading of the effluent prior to discharge into foul sewers. There should be no direct discharge of effluent from the site into the sea.	٨
S3.4 (AEIAR-130/2009)	All temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge should be adequately designed for the controlled release of storm flows. All sediment control measures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rain storms. The temporarily diverted drainage should be reinstated to its original condition when the construction work has finished or the temporary diversion is no longer required.	^

EIA Ref.	Mitigation Measures	Status
S3.4 (AEIAR-130/2009)	All fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour WCZ.	Λ
S5.8 (AEIAR-170/2013)	There is a need to apply to EPD for a discharge licence for discharge of effluent from the construction site under the WPCO. The discharge quality must meet the requirements specified in the discharge licence. All the runoff and wastewater generated from the works areas should be treated so that it satisfies all the standards listed in the TM-DSS. Minimum distance of 100 m should be maintained between the discharge points of construction site effluent and the existing seawater intakes and the planned WSR mentioned in S5.3.1 as appropriate. The beneficial uses of the treated effluent for other on-site activities such as dust suppression, wheel washing and general cleaning etc., can minimise water consumption and reduce the effluent discharge volume. If monitoring of the treated effluent quality from the works areas is required during the construction phase of the Project, the monitoring should be carried out in accordance with the relevant WPCO licence which is under the ambit of regional office (RO) of EPD.	Λ
S3.4 (AEIAR-130/2009) and S5.8 (AEIAR-170/2013)	Sewage EffluentConstruction work force sewage discharges on site are expected to be connected to the existing trunk sewer or sewage treatment facilities. The construction sewage may need to be handled by portable chemical toilets prior to the commission of the on-site sewer system. Appropriate numbers of portable toilets should be provided by a licensed contractor to serve the large number of construction workers over the construction site. The Contractor should also be responsible for waste disposal and maintenance practices.	٨
S5.8	Notices should be posted at conspicuous locations to remind the workers not to discharge	^

EIA Ref.	Mitigation Measures	Status
(AEIAR-170/2013)	any sewage or wastewater into the surrounding environment. Regular environmental audit of the construction site will provide an effective control of any malpractices and can encourage continual improvement of environmental performance on site. It is anticipated that sewage generation during the construction phase of the project would not cause water pollution problem after undertaking all required measures.	
S3.4 (AEIAR-130/2009) and S5.8 (AEIAR-170/2013)	Stormwater Discharges Minimum distances of 100 m should be maintained between the existing or planned stormwater discharges and the existing or planned seawater intakes.	٨
	Debris and Litter In order to maintain water quality in acceptable conditions with regard to aesthetic quality, contractors should be required, under conditions of contract, to ensure that site management is optimised and that disposal of any solid materials, litter or wastes to marine waters does not occur.	٨
S5.8 (AEIAR-170/2013)	Accidental Spillage Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction 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. Any service shop and maintenance facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.	٨

EIA Ref.	Mitigation Measures	Status
	 Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows: Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport. Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents. Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area. 	∧ ∧ ∧
Construction Waste	Management	
S6.7 (AEIAR-170/2013)	Prepare a Waste Management Plan, which becomes a part of the Environmental Management Plan, in accordance with the requirements stipulated in ETWB TC(W) No. 19/2005, approved by the Engineer/Supervising Officer of the Project based on current practices on construction sites.	٨
S3.5 (AEIAR-130/2009) and S6.7 (AEIAR-170/2013)	 Good Site Practices It is not anticipated that adverse waste management related impacts would arise, provided that good site practices are adhered to. Recommendations for good site practices during construction activities include: Nomination of an approved person, such as a 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 Training of site personnel in proper waste management and chemical waste handling procedures 	^
	Provision of sufficient waste disposal points and regular collection for disposal	^

EIA Ref.	Mitigation Measures	Status
	• Appropriate measures to minimise windblown litter and dust during transportation of	^
	waste by either covering trucks or by transporting wastes in enclosed containers	
	 A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites) 	٨
	 Regular cleaning and maintenance systems, sumps and oil interceptors 	٨
	 Separation of chemical wastes for special handling and appropriate treatment 	٨
	Waste Reduction Measures	
	Good management and control can prevent the generation of a significant amount of	
	waste. Waste reduction is best achieved at the planning and design stage, as well as by	
	ensuring the implementation of good site practices. Recommendations to achieve waste reduction include:	
	 Sort C&D waste from demolition of the remaining structures to recover recyclable portions such as metals 	٨
	• 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	^
	 Encourage collection of aluminium cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force 	
	 Any unused chemicals or those with remaining functional capacity should be recycled 	^
	 Proper storage and site practices to minimise the potential for damage or 	Λ
	contamination of construction materials	
	 Plan and stock construction materials carefully to minimize amount of waste 	٨
	generated and avoid unnecessary generation of waste	
	• Training should be provided to workers about the concepts of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycle.	^

EIA Ref.	Mitigation Measures	Status
S3.5 (AEIAR-130/2009)	Construction and Demolition Materials Mitigation measures and good site practices should be incorporated in the contract document to control potential environmental impact from handling and transportation of	
	 C&D material. The mitigation measures include: Where it is unavoidable to have transient stockpiles of C&D material within the Project work site pending collection for disposal, the transient stockpiles shall be located away from waterfront or storm drains as far as possible. 	^
	• Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric.	٨
	• Skip hoist for material transport should be totally enclosed by impervious sheeting.	^
	• Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving a construction site.	٨
	• The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.	^
	• The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure dust materials do not leak from the vehicle.	^
	• All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet.	٨
	• The height from which excavated materials are dropped should be controlled to a minimum practical height to limit fugitive dust generation from unloading.	^
	When delivering inert C&D material to public fill reception facilities, the material should consist entirely of inert construction waste and of size less than 250mm or other sizes as agreed with the Secretary of the Public Fill Committee. In order to monitor the disposal of the surplus C&D material at the designed public fill reception facility and to control fly	^
	tipping, a trip-ticket system as stipulated in the ETWB TCW No. 31/2004 "Trip Ticket	

EIA Ref.	Mitigation Measures	Status
	System for Disposal of Construction and Demolition Materials" should be included as one of the contractual requirement sand implemented by an Environmental Team undertaking the Environmental Monitoring and Audit work. An Independent Environmental Checker should be responsible for auditing the results of the system.	
S3.5 (AEIAR-130/2009)	General Refuse General refuse should be stored in enclosed bins or compaction units separate from C&D material. A licensed waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material. Effective collection and storage methods (including enclosed and covered area) of site wastes would be required to prevent waste materials from being blown around by wind, wastewater discharge by flushing or leaching into the marine environment, or creating odour nuisance or pest and vermin problem	^
Construction Lands	cape and Visual	L
\$3.8.12	• Minimized construction area and contractor's temporary works areas.	٨
(AEIAR-130/2009)	• All existing trees should be carefully protected during construction.	Λ
and S7.9 (AEIAR-170/2013)	• Trees unavoidably affected by the works should be transplanted where practical. Detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBC 2/2004 and 3/2006. Final locations of transplanted trees should be agreed prior to commencement of the work.	٨
	• Control of night-time lighting.	٨
	• Erection of decorative screen hoarding.	٨
	• Reduction of construction period to practical minimum.	^
	• Limitation of / Ensuring no run-off into surrounding landscape and adjacent seawater areas.	٨
	• Temporary or advance landscape should be provided along the temporary access roads to the Cruise Terminal until such time as road D3 is open.	^

Remarks:	EIA Report (AEIAR-130/2009) – Kai Tak Development				
	EIA Report (AEIAR-170/2013) – Kai Tak Development – Roads D3A & D4A				
	^Compliance of mitigation measure;N/ANot Applicable at this stage;N/A(1)Not observed;	 X Non-compliance of mitigation measure; Non-compliance but rectified by the contractor; 			
	* Recommendation was made during site audit but improved/rectified by the contractor.	# Recommendation was made during site audit but not yet improved/rectified by the contract			

APPENDIX F SUMMARIES OF ENVIRONMENTAL COMPLAINT, WARNING, SUMMON AND NOTIFICATION OF SUCCESSFUL PROSECUTION

Contract No. KL/2014/01 Kai Tak Development –Stage 2 Infrastructure Works for Developments at the Southern Part of the Former Runway

Appendix F – Summary of environmental complaint, warning, summon and notification of successful prosecution

Reporting Month: June 2019

Contract No. KL/2014/01

Log Ref.	Location	Received Date	Details of Complaint/warning/summon and prosecution	Investigation/Mitigation Action	Status
N/A	N/A	N/A	N/A	N/A	N/A

Remarks: No environmental complaint/warning/summon and prosecution were received in the reporting period.

APPENDIX G WASTE GENERATED QUANTITY

		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	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics	Chemical Waste	Others, e.g. general refuse
	(in tonne)	(in tonne)	(in tonne)	(in tonne)	(in tonne)	(in tonne)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in tonne)
Jan	3289.57	0	0	0	3289.57	0	0	0	0	0	269.42
Feb	21.88	0	0	0	21.88	0	0	0	0	0	145.98
Mar	10.18	0	0	0	10.18	0	0	0	0	0	394.09
Apr	10320.43	0	0	10300.49	19.94	0	0	0	0	0	161.91
May	22209.44	0	0	22209.44	0	0	0	0	0	0	183.38
June	9294.81	0	0	9294.81	0	0	0	0	0	0	140.98
Sub-total	45146.31	0	0	41840.74	3341.57	0	0	0	0	0	1295.76
July											
Aug											
Sept											
Oct											
Nov											
Dec											
Total	45146.31	0	0	41840.74	3341.57	0	0	0	0	0	1295.76

Monthly Summary Waste Flow Table for 2019

FUGRO TECHNICAL SERVICES LIMITED

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Appendix C

Monthly EM&A Report For Contract No. KL/2014/03 Kai Tak Development - Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway

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Report No.: 0405/15/ED/1193A

MONTHLY EM&A REPORT

June 2019

- Client **Civil Engineering and Development** : Department, HKSAR Contract No. KLN/2015/07 • **Contract Name :** Environmental Monitoring Works for Contract KL/2014/03 - Kai Tak Development - Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway **Report No.** 0405/15/ED/1193A 2 New Distributor Roads Serving the Planned Kai Tak EP-337/2009 **Development Area** EP-339/2009/A Decommissioning of the Remaining Parts (Ex-GFS Building, Radar Station and Hong Kong Aviation Club) of the former Kai Tak Airport
- EP-451/2013 Trunk Road T2

Prepared by : Toby K. H. Wan Reviewed by : Alfred Y. S. Lam Certified by : Colin K. L. Yung Environmental Team Leader MateriaLab Consultants Limited

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Ref.: CEDKTDS3EM00_0_0403L.19

9 July 2019

By Post and Email

Hyder-Meinhardt Joint Venture 17/F, Two Harbour Square, 180 Wai Yip Street, Kwun Tong Kowloon, Hong Kong

Attention: Mr. Wong W. K., Chris

Dear Mr. Wong,

Re: Contract No. KL/2014/03 – Kai Tak Development – Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway <u>Monthly EM&A Report for June 2019</u>

Reference is made to the Environmental Team's submission of the Monthly EM&A Report for June 2019 (Report No. 0405/15/ED/1193A) we received by e-mail on 9 July 2019.

Please be informed that we have no adverse comment on the captioned report. We hereby verify the captioned submission according to Condition 3.3 of EP-337/2009, Condition 3.3 of EP-339/2009/A and Condition 3.4 of EP-451/2013.

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

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

hoff Bory

F. C. Tsang Independent Environmental Checker

c.c. CEDD Fugro

CRBC

Attn.: Ms. Amy Chu Attn.: Mr. Colin K. L. Yung Attn.: Mr. Dickey Yau Fax: 2369 4980 By email Fax: 2283 1689

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EXECUTIVE SUMMARY

- i. The Civil Engineering and Development Department HKSAR has appointed MateriaLab Consultants Limited (MCL) to undertake the Environmental Team services for the Project and implement the EM&A works.
- ii. This Monthly EM&A report presents the environmental monitoring and audit works for the period between 1 June and 30 June 2019. As informed by the Contractor, major activities in the reporting month were:
 - Excavation and laying of drainage pipe and manhole;
 - Excavation and ELS construction.
 - Construction of SUS structure;
 - · Construction of District Cooling System;
 - Construction of Subway A; and
 - · Construction of road base and road pavement.

Breaches of the Action and Limit Levels

iii. No Action / Limit Level exceedance was recorded for 24-hr TSP and construction noise at KTD1a, KTD2b and KER1b in the reporting month.

Complaint, Notification of Summons and Successful Prosecution

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

Reporting Changes

v. There was no reporting change in the reporting month.

Future Key Issues

vi. The key issues to be considered in the coming reporting month include:

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



1. INTRODUCTION

1.1 Background

- 1.1.1 The Kai Tak Development is located in the south-eastern part of Kowloon Peninsula of the HKSAR, comprising the apron and runway areas of the former Kai Tak Airport and existing waterfront areas at To Kwa Wan, Ma Tau Kok, Kowloon Bay, Kwun Tong and Cha Kwo Ling.
- 1.1.2 Contract No. KL/2014/03 is the works package to construct an approximately 420m long supporting underground structure (SUS) underneath Shing Cheong Road and Cheung Yip Street. The EM&A programme under this Contract is governed by three EPs (EP-337/2009, EP-339/2009/A and EP-451/2013) and two EM&A Manuals (AEIAR-130/2009 and AEIAR-174/2013). The Works to be executed under this Contract and corresponding EPs include but not be limited to the following main items:

EP-451/2013 – Trunk Road T2

(i) Construction of approximately 420m long supporting underground structure (SUS) including diaphragm walls, barrettes, piled foundation, top and bottom slabs, end wall and adits underneath Shing Cheong Road and Cheung Yip Street;

EP-337/2009 – New Distributor Roads Serving the Planned Kai Tak Development

- (ii) Widening and re-alignment of Cheung Yip Street of approximately 330m long and associated footpaths;
- (iii) Demolition, reconstruction and widening of Shing Cheong Road of approximately 410m long and associated footpaths;
- (iv) Construction of drainage outfall and modification of existing seawall;
- (v) Construction of ancillary works including surface drainage, sewerage, water, fire fighting, street lighting, street furniture, road marking, road signage, utilities and services, irrigation and landscape works.

EP-339/2009/A – Decommissioning of the Remaining Parts (Ex-GFS Building, Radar Station and Hong Kong Aviation Club) of the former Kai Tak Airport

(vi) Demolition of RADAR Tower and guard house;

Other works not covered by any EP

- (vii) Construction of two subways between Phase II of New Acute Hospital (Site A) and Hong Kong Children's Hospital (Site C), and between Phase I of New Acute Hospital (Site B) and Site C;
- (viii) Construction of District Cooling System (DCS) along Cheung Yip Street and Shing Cheong Road
- 1.1.3 The location and boundary of the site is shown in **Figure 1**.
- 1.1.4 This Monthly EM&A report is required under EP-337/2009 Condition 3.3, EP-339/2009/A Condition 3.3 and EP-451/2013 Condition 3.4. It is to report the results and findings of the EM&A programme required in the EM&A Manuals.
- 1.1.5 This is the 40th monthly EM&A Report which summarize the impact monitoring results and audit findings for the Project within the period between 1 June and 30 June 2019.

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1.2 **Project Organization**

- 1.2.1 The project proponent was the Civil Engineering and Development Department, HKSAR (CEDD). Hyder Meinhardt Joint Venture (HMJV) was commissioned by CEDD as the Engineer for the Project. Ramboll Hong Kong Limited was commissioned as the Independent Environmental Checker (IEC). China Road and Bridge Corporation (Hong Kong) (CRBC) was appointed as the main contractor for the construction works under the contract KL/2014/03. MateriaLab Consultants Limited (MCL) was appointed as the Environmental Team (ET) by CEDD to implement the EM&A programme for the Project.
- 1.2.2 The organization structure is shown in **Appendix B**. The key personnel contact names and numbers for the Project are summarized in **Table 1.1**.

Party	Position	Name	Telephone	Fax
Project Proponent (CEDD)	Co-ordinator	Ms. Amy Chu	3106 3172	2369 4980
Engineer's Representative (HMJV)	Chief Resident Engineer	Mr. W. K., Chris Wong	3742 3803	3742 3899
IEC (Ramboll Hong Kong Limited)	Independent Environmental Checker	Mr. F. C. Tsang	3465 2851	3465 2899
Main Contractor (CRBC)	Site Agent	Mr. Yau Kwok Kiu, Dickey	5699 4503	2283 1689
	Environmental Officer	Mr. Kola Lam	55454625	2283 1689
ET (MCL)	Environmental Team Leader	Mr. Colin Yung	3565 4114	3565 4160

 Table 1.1
 Contact Information of Key Personnel

1.3 Construction Programme and Activities

- 1.3.1 The construction of the Project commenced in February 2016 and is expected to complete in 2020. The construction programme is shown in **Appendix A**.
- 1.3.2 A summary of the major construction activities undertaken in the reporting month were:
 - Excavation and laying of drainage pipe and manhole;
 - Excavation and ELS construction.
 - · Construction of SUS structure;
 - · Construction of District Cooling System;
 - · Construction of Subway A; and
 - · Construction of road base and road pavement.

1.4 Inter-relationship with the environmental protection/ mitigation measures with the construction programme

1.4.1 According to the construction activities in the construction programme mentioned in Section 1.3.2, the following environmental protection/ mitigation measures including Air Quality Impact,



Construction Noise Impact, Water Quality Impact, Chemical and Waste Management, Landscape and Visual Impact shall be implemented:

- · Sufficient watering of the works site with the active dust emitting activities;
- · Limitation of the speed for vehicles on unpaved site roads;
- Properly cover or enclosure of the stockpiles and dusty materials;
- · Good site practices on loading dusty materials;
- · Providing sufficient vehicles washing facilities at every vehicle exit point;
- · Good maintenance to the plant and equipment;
- · Use of quieter plant and Quality Powered Mechanical Equipment (QPME);
- · Use of acoustic fabric and noise barrier;
- · Using the approved Non-road Mobile Machineries (NRMMs);
- Proper storage and handling of chemical;
- Appropriate desilting, oil interceptors or sedimentation devices provided on site for treatment before discharge;
- · Onsite waste sorting and implementation of trip ticket system;
- Training of the site personnel in proper waste management and chemical waste handling procedures;
- Proper storage of the construction materials;
- · Erection of decorative screen hoarding;
- · Strictly following the Environmental Permits and Licenses;
- Provide sufficient mitigation measures as recommended in Approved EIA Reports

1.5 Status of Environmental Licences, Notifications and Permits

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

Environmental License / Permit / Notification	Reference Number	Valid From	Valid Till	
Environmental Permit	EP-337/2009 EP-339/2009/A EP-451/2013	23 April 2009 18 June 2009 19 September 2013	Not Applicable Not Applicable Not Applicable	
Notification pursuant to Air Pollution (Construction Dust) Regulation	395601	4 December 2015	Not Applicable	
Billing Account for Waste Disposal	A/C No.: 7023814	22 December 2015	Not Applicable	
Billing Account for Waste Disposal (Vessel)	A/C No.: 7027469	8 May 2019	18 August 2019	
Construction Noise Permit	GW-RE0433-19	6 June 2019	5 December 2019	
Construction Noise Permit	GW-RE0036-19	21 January 2019	11 July 2019	
Wastewater Discharge License	WT00023125-2015	6 January 2016	31 January 2021	
Chemical Waste Producer License	5213-247-C1232-12	23 November 2015	Not Applicable	

 Table 1.2
 Relevant Environmental Licenses, Permits and/or Notifications

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2. AIR QUALITY

2.1 Monitoring Requirement

In accordance with the approved EM&A Manuals, 24-hour Total Suspended Particulates (TSP) level at the designated air quality monitoring station is required. Impact 24-hour TSP monitoring should be carried out at least once every 6 days. In case of complaints, 1-hour TSP monitoring should be carried out at least 3 times per 6 days when the highest dust impacts are likely to occur. The Action and Limit Levels of the air quality monitoring are given in **Appendix C**.

2.2 Monitoring Equipment

The 24-hour TSP air quality monitoring was performed using High Volume Air Samplers (HVS) located at each of the designated monitoring station. Portable TSP Monitors would be used in case of complaints for 1-hour TSP monitoring.

Table 2.1 summarizes the equipment used in air quality monitoring.

Item	Location	Brand	Model Equipment		Serial Number
			TE-5170 (TSP)	High Volume Sampler	
			TE-300-310X	- Mass Flow Controller	2037
1	KER1b	Tisch	TE-5005X	- Blower Motor Assembly	3482
			TE-5007X	- Mechanical Timer	4488
			TE-5009X	- Continuous Flow Recorder	4371
			TE-5170 (TSP)	High Volume Sampler	
	KTD1a	Tisch	TE-300-310X	- Mass Flow Controller	2524
2			TE-5005X	- Blower Motor Assembly	4037
			TE-5007X	- Mechanical Timer	5160
			TE-5009X	- Continuous Flow Recorder	4377
			TE-5170 (TSP)	High Volume Sampler	
	KTD2b	Tisch	TE-300-310X	- Mass Flow Controller	2618
3			TE-5005X	- Blower Motor Assembly	3838
			G3031	- Mechanical Timer	2251
			G1051	- Continuous Flow Recorder	2307
4		Tisch	TE-5025A	HVS Sampler Calibrator	438320/2154
5		*Sibata	Model LD-3B	Sibata Portable TSP Monitors NA	

 Table 2.1
 Air Quality Monitoring Equipment

Note:

No complaint of air quality was received. Therefore, no impact 1-hour TSP monitoring was conducted.

2.3 Monitoring Methodology

2.3.1 24-hour TSP air quality monitoring

HVS Installation

The following guidelines were adopted during the installation of HVS:

- Sufficient support is provided to secure the samplers against gusty wind.
- No two samplers are placed less than 2 meters apart.



- The distance between the sampler and an obstacle, such as buildings, is at least twice the height that the obstacle protrudes above the sampler.
- A minimum of 2 meters of separation from walls, parapets and penthouses is required for rooftop samples.
- A minimum of 2 meters separation from any supporting structure, measured horizontally is required.
- No furnaces or incineration flues are nearby.
- Airflow around the samplers is unrestricted.
- The samplers are more than 20 meters from the drip line.
- Any wire fence and gate, to protect the sampler, should not cause any obstruction during monitoring.

Filters Preparation

Fiberglass filters (provided by the HOKLAS accredited laboratory) shall be used (Note: these filters have a collection efficiency of larger than 99% for particles of 0.3 µm diameter). A HOKLAS accredited laboratory (ALS Technichem (HK) Pty Ltd.) is responsible for the preparation of 24-hr conditioned and pre-weighed filter papers for monitoring team.

All filters are equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature is around 25°C and not variable by more than \pm 3°C; the relative humidity (RH) is < 50% and not variable by more than \pm 5%. A convenient working RH is 40%.

Operating / Analytical Procedures

Operating / analytical procedures for the air quality monitoring are highlighted as follows:

- Prior to the commencement of the dust sampling, the flow rate of the HVS are properly set (between 0.6 m³/min and 1.7 m³/min) in accordance with the EM&A manual. The flow rate shall be indicated on the flow rate chart.
- The power supply shall be checked to ensure the samplers worked properly.
- On sampling, the samplers shall be operated for 5 minutes to establish thermal equilibrium before placing any filter media at the designated air quality monitoring station.
- The filter holding frame is then removed by loosening the four nuts and carefully a weighted and conditioned filter is centered with the stamped number upwards, on a supporting screen.
- The filter shall be aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter. Then the filter holding frame is tightened to the filter holder with swing bolts. The applied pressure should be sufficient to avoid air leakage at the edges.
- The shelter lid shall be closed and secured with the aluminum strip.
- The timer is then programmed. Information shall be recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number).
- After sampling, the filter shall be removed and sent to laboratory for weighing. The elapsed time is also recorded.
- Before weighing, all filters are equilibrated in a conditioning environment for 24 hours. The conditioning environment temperature should be between 25°C and 30°C and not vary by more than ±3°C; the relative humidity (RH) should be < 50% and not vary by more than ±5%. A convenient working RH is 40%. Weighing results are returned to MCL for further analysis of TSP concentrations collected by each filter.

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2.3.2 1-hour TSP air quality monitoring

Operating / Analytical Procedures

The measuring procedures of the 1-hr dust meter are in accordance with the Manufacturer's instruction Manual as follows:

- Pull up the air sampling inlet cover
- Change the Mode 0 to BG once
- Push Start/Stop switch once
- Turn the knob to SENSI.ADJ and press it
- Push Start/Stop switch once
- Return the knob to the position MEASURE slowly
- Push the timer set switch to set measuring time
- Remove the cap and make a measurement

2.4 Maintenance / Calibration

2.4.1 24-hour TSP air quality monitoring

The following maintenance / calibration are required for the HVS:

- The high volume motors and their accessories are properly maintained. Appropriate maintenance such as routine motor brushes replacement and electrical wiring checking are made to ensure that the equipments and necessary power supply are in good working condition.
- All HVS shall be calibrated (five point calibration) using Calibration Kit upon installation and thereafter in every 3 months.
- A copy of the calibration certificates for the HVS and calibrator are provided in Appendix D.
- 2.4.2 1-hour TSP air quality monitoring

The portable TSP monitor should be calibrated at 1 year intervals

2.5 Monitoring Locations

- 2.5.1 According to the EM&A Manual, three air quality monitoring locations, namely KTD1, KTD2 and KER1, are covered by this Contract within the South Apron Area of Former Kai Tak Airport. The other two air quality monitoring locations, which are identified in Cha Kwo Ling area, are farther than 500m away from the site boundary and thus not covered by this Contract. The monitoring works in Cha Kwo Ling area are covered by other Contract(s) respectively.
- 2.5.2 According to the approved alternative baseline air quality and noise monitoring locations (EPD reference: () in EP2/K19/A/21 pt.5), the original monitoring locations (KTD1, KTD2 and KER1) are proposed to be replaced by alternative monitoring locations (KTD1a, KTD2a and KER1a) for air quality monitoring.
- 2.5.3 According to the approved relocation of monitoring location KER1a (EPD reference: () in EP2/K19/A/21 pt.5), the monitoring location KER1a are proposed to be relocated by alternative monitoring locations KER1b for air quality monitoring.



- 2.5.4 According to the approved relocation of monitoring location KTD2a (EPD reference: () in EP2/K19/A/21 pt.6), the monitoring location KTD2a are proposed to be relocated by alternative monitoring locations KTD2b for air quality monitoring.
- 2.5.5 The most updated locations are summarized in **Table 2.2** and shown in **Figure 2**.

Monitoring Station	Location				
KTD1a	Centre of Excellence in Paediatrics (Children's Hospital)				
KTD2b	G/IC Zone next to Kwun Tong Bypass (Next to the site of the New Acute Hospital)				
KER1b	Site Boundary at Cheung Yip Street				

 Table 2.2
 Location of Air Quality Monitoring Station

2.6 Results and Observations

- 2.6.1 The schedule of air quality monitoring in reporting month is provided in **Appendix E**.
- 2.6.2 No Action / Limit Level exceedance was recorded for 24-hr TSP at KTD1a, KTD2b and KER1b in the reporting month.
- 2.6.3 No complaint of air quality was received. Therefore, no impact 1-hour TSP monitoring was conducted in the reporting month.
- 2.6.4 During the reporting month, major dust sources including loading and unloading of C&D wastes, vehicles movement were observed in the site. Non-project related construction activities at the nearby construction site and road traffic along Shing Cheong Road, Cheung Yip Street and the Kwun Tong By-pass were observed. The above factors may affect the monitoring results.
- 2.6.5 The weather conditions during the monitoring are provided in **Appendix K**.
- 2.6.6 The monitoring data of 24-hr TSP are summarized in **Table 2.3**. Detailed monitoring data are presented in **Appendix F**.

Parameter	Monitoring Station	Average (µg/m³)	Range (µg/ m³)	Action Level (µg/ m ³)	Limit Level (µg/ m ³)		
24-hr TSP in µg/m³	KTD1a	54	26-82	177			
	KTD2b	63	48-71	157	260		
	KER1b	31	17-48	172			

- Table 2.3
 Summary of 24-hr TSP Monitoring Results
- 2.6.7 The Event and Action Plan for air quality is given in **Appendix H**.

2.7 Comparison of 24-hr TSP Monitoring Results with EIA Predictions

2.7.1 The monitoring data of 24-hr TSP was compared with the EIA predictions as summarized in **Table 2.4**.

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Profit Industrial Building,
1-15 Kwai Fung Crescent, Kwai Fong,
Hong Kong.



Table 2.4	Comparison of 24-hr TSP data with EIA predictions

Monitoring Station	Receiver Reference	Predicted Maximum 24-hour TSP Concentration (μg/m ³)	24-hour TSP concentration in June 2019 (μg/m³)	Average 24-hour TSP concentration in June 2019 (µg/m ³)
KTD1a	KTD3	126	26-82	54
KTD2b	-	-	48-71	63
KER1b	KTD6	169	17-48	31

Note:

For KTD2b, there was no receiver reference in the EIA report, EIAR-174/2013.

Predicted Maximum TSP Concentration extracted from Table 4.14 of EIA Report, EIAR-174/2013.

2.7.2 The 24-hour TSP monitoring results at KTD1a and KER1b were below the Predicted Maximum 24-hr TSP concentration in the approved Environmental Impact Assessment (EIA) Report and no Action / Limit Level exceedance was recorded in the reporting period.



3. NOISE

3.1 Monitoring Requirement

3.1.1 In accordance with the approved EM&A Manuals, Leq (30min) monitoring is conducted for at least once a week during the construction phase between 0700 and 1900 on normal weekdays at the designated monitoring locations.

3.2 Monitoring Equipment

- 3.2.1 The sound level meter used in noise monitoring will comply with the International Electrotechnical Commission Publication (IEC) 651:1979 (Type 1) and 804:1985 (Type 1) specifications as referred to in the Technical Memorandum issued under the Noise Control Ordinance (NCO).
- 3.2.2 Sound level calibrator will be used for the on-site calibration of the meter. This calibrator complies with the IEC Publication 942 (1988) Class 1 and ANSI S1.40 1984. Noise measurements were only accepted to be valid if the calibration levels from before and after the measurement agree to within 1.0dB.
- 3.2.3 Measurements shall be recorded to the nearest 0.1dB. Sound level meters are programmed to measure A-weighted equivalent continuous sound pressure level at 30-minute intervals between 0700 and 1900 on normal weekdays at least once a week when construction activities are underway.

Table 3.1 summarizes the noise monitoring equipment model being used for this project.

ltem	n Brand	Model	Equipment	Serial Number
1	Casella	CEL-63X Series	Integrating Sound Level Meter	1488270
2	Casella	CEL-63X Series	3X Series Integrating Sound Level Meter	
3	Casella	CEL-120/1	120/1 Calibrator	
4	Benetech	GM816	Wind Speed Anemometer	13372555
5	Benetech	GM816	Wind Speed Anemometer	N/A

Table 3.1 Noise Monitoring Equipment

3.3 Monitoring Parameters and Frequency

Table 3.2 presents the noise monitoring parameters and frequencies.

Table 3.2 Monitoring Parameters and Frequencies of Noise Monitoring

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

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3.4 Monitoring Methodology

- 3.4.1 The monitoring procedures are as follows:
 - The monitoring station is set at a point 1m from the exterior of the sensitive receivers building façade and set at a position 1.2m above the ground.
 - The battery condition is checked to ensure good functioning of the meter.
 - Parameters such as frequency weighting, the time weighting and the measurement time are set as follows:
 - frequency weighting : A
 - time weighting : Fast
 - measurement time : Weekly 30 minutes between 0700-1900 on normal weekdays
 - Prior to and after noise measurement, the meter shall be calibrated using the calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after measurement is more than 1.0 dB, the measurement will be considered invalid and repeat of noise measurement is required after re-calibration or repair of the equipment.
 - Noise monitoring should be cancelled in the presence of fog, rain, and wind with a steady speed exceeding 5 m/s, or wind with gusts exceeding 10 m/s.
 - Noise measurement should be paused during periods of high intrusive noise if possible and observation shall be recorded when intrusive noise is not avoided.
 - At the end of the monitoring period, the Leq, L10 and L90 are recorded. In addition, site conditions and noise sources are recorded on a standard record sheet.

3.5 Maintenance / Calibration

- 3.5.1 Maintenance and Calibration procedures are as follows:
 - The microphone head of the sound level meter and calibrator should be cleaned with a soft cloth at quarterly intervals.
 - The sound level meter and calibrator should be calibrated annually by a HOKLAS laboratory.
 - Relevant calibration certificates are provided in **Appendix D**.

3.6 Monitoring Locations

- 3.6.1 According to the EM&A Manual, three noise monitoring locations, namely KTD1, KTD2 and KER1, are covered by this Contract within the South Apron Area of Former Kai Tak Airport. The other two noise monitoring locations, which are identified in Cha Kwo Ling area, are farther than 300m away from the site boundary and thus not covered by this Contract. The monitoring works in Cha Kwo Ling area are covered by other Contract(s) respectively.
- 3.6.2 According to the approved alternative baseline air quality and noise monitoring locations (EPD reference: () in EP2/K19/A/21 pt.5), the original monitoring locations (KTD1, KTD2 and KER1) are proposed to be replaced by alternative monitoring locations (KTD1a, KTD2a and KER1a) for noise monitoring.
- 3.6.3 According to the approved relocation of monitoring location KER1a (EPD reference: () in EP2/K19/A/21 pt.5), the monitoring location KER1a are proposed to be relocated by alternative monitoring locations KER1b for noise monitoring.



- 3.6.4 According to the approved relocation of monitoring location KTD2a (EPD reference: () in EP2/K19/A/21 pt.6), the monitoring location KTD2a are proposed to be relocated by alternative monitoring locations KTD2b for noise monitoring.
- 3.6.5 The most updated locations are summarized in **Table 3.3** and shown in **Figure 2**.

Monitoring Station	Location		
KTD1a	Centre of Excellence in Paediatrics (Children's Hospital)		
KTD2b	G/IC Zone next to Kwun Tong Bypass (Next to the site of the New Acute Hospital)		
KER1b	Site Boundary at Cheung Yip Street		

Table 3.3 Location of Noise Monitoring Station

3.7 Results and Observations

- 3.7.1 The schedule of noise monitoring in reporting month is provided in **Appendix E**.
- 3.7.2 During the monitoring month, at KTD1a, project related construction activities and road traffic along Shing Cheong Road were observed in the surroundings. At KTD2b, road traffic along the Kwun Tong By-pass and non-project related construction activities at the nearby construction site was observed. At KER1b, road traffic along Cheung Yip Street was observed. Major noise sources including noise emission from plant & PME and some other construction activities, travel of vehicles, loading and unloading of C&D waste were observed in the site. The above factors may affect the monitoring results.
- 3.7.3 No raining and wind with speed over 5 m/s was observed during noise monitoring according to the onsite observation. The weather conditions during the monitoring month are provided in **Appendix K**.
- 3.7.4 The noise monitoring data are summarized in **Table 3.4**. Detailed monitoring data are presented in **Appendix G**.

Time Period	Leq _(30min) dB(A) (Range) Noise Monitoring Stations		Action Level	Limit Level	
	KTD1a	KTD2b	KER1b		
0700-1900 hrs on normal weekdays	67-70	69-75	68-73	When one documented complaint is received	75 dB(A)

 Table 3.4
 Summary of Noise Impact Monitoring Results

Note:

KTD1a: Façade Measurement

KTD2b & KER1b: Free-field measurement (+3dB(A) correction has been applied)

- 3.7.5 No Action / Limit Level exceedance of location KTD1a, KTD2b and KER1b was recorded for construction noise in the reporting month.
- 3.7.6 The Action and Limit Levels for noise impact monitoring have been set and are presented in **Appendix C**.



3.7.7 The Event and Action Plan for noise is given in **Appendix H**.

3.8 Comparison of Noise Monitoring Results with EIA Predictions

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

Table 3.5	Comparison of Noise Monitoring data with EIA predictions
	companyon of Noise Monitoring data with LIA predictions

Monitoring Station	Receiver Reference	Maximum Predicted Mitigated Construction Noise Level, dB(A)	Maximum Leq _(30min) dB(A) In June 2019
KTD1a	KTD1	74	70
KTD2b	KTD2	75	75
KER1b	KER1	75	73

Note:

Maximum Predicted Mitigated Construction Noise Level extracted from Table 5.13 of EIA Report, EIAR-174/2013.

3.8.2 The impact noise monitoring results of location KTD1a, KTD2b and KER1b in the reporting month did not exceed the Maximum Predicted Mitigated Construction Noise Level in the approved Environmental Impact Assessment (EIA) Report and no Action / Limit Level exceedance was recorded in the reporting period.



4. LANDSCAPE AND VISUAL

4.1 Audit Requirements

- 4.1.1 As per the Trunk Road T2 EM&A Manual, the landscape and visual mitigation measures during the construction phase shall be audited by a Registered Landscape Architect, as a member of the Environmental Team, at least once every two weeks to ensure compliance with the intended aims of the measures.
- 4.1.2 According to the Kai Tak Development EM&A Manual, measures to mitigate landscape and visual impacts during construction should be checked to ensure compliance with the intended aims of the measures. The progress of the engineering works shall be regularly reviewed onsite to identify the earliest practical opportunities for the landscape works to be undertaken. The ET shall report on the Contractor's compliance on a weekly basis.

4.2 Results and Observations

- 4.2.1 To monitor and audit the implementation of landscape and visual mitigation measures, four weekly Landscape and Visual Site audits were carried out on 5, 12, 19 and 26 June 2019 and two of them 5 and 19 June 2019 were carried out by a Registered Landscape Architect. The weekly Landscape and Visual Impact reports were counter-signed by IEC as according to the requirement of EM&A Manual (AEIAR-130/2009).
- 4.2.2 Should non-compliance of the landscape and visual impact occur, action in accordance to the event action plan presented in **Appendix H** shall be carried out.



5. WASTE MANAGEMENT

5.1 Audit Requirements

- 5.1.1 The effective management of waste arising during the construction phase will be monitored through the site audit programme. Regular audits and site inspections should be carried out to ensure that the recommended good site practices and other mitigation measures are implemented by the Contractor.
- 5.1.2 The audit should look at all aspects of on-site waste management practices including the waste generation, storage, recycling, transport and disposal. The aims of waste audit are:
 - to ensure the waste arising from the works are handled, stored, collected, transferred and disposed of in an environmentally acceptable manner;
 - verify the implementation status and evaluate the effectiveness of the mitigation measures; and
 - to encourage the reuse and recycling of material.

5.2 Results and Observations

- 5.2.1 C&D materials and wastes sorting were carried out on site. Receptacles were available for C&D wastes and general refuse collection.
- 5.2.2 The amount of wastes generated by the site activities in the reporting month is shown in **Appendix I**.



6. SITE INSPECTION

6.1 Site Inspection

- 6.1.1 Site inspections were carried out weekly to monitor the implementation of proper environmental pollution control and mitigation measures for the Project. A summary of the mitigation measures implementation schedule is provided in **Appendix J**.
- 6.1.2 In the reporting month, four site inspections were carried out on 5, 12, 19 and 26 June 2019. Two of them, held on 5 and 12 May 2019 was the joint inspections with the IEC, ER, the Contractor and the ET.
- 6.1.3 No outstanding issues were reported during the reporting month. Details of observations recorded during the site inspections are summarized in **Appendix M**.
- 6.1.4 All the follow-up actions requested by Contractor's ET and IEC during the site inspections were undertaken as reported by the Contractor and confirmed in the following weekly site inspection conducted during the reporting month.



7. ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

7.1 Environmental Exceedance

7.1.1 No Action / Limit Level exceedance was recorded for 24-hr TSP and construction noise at KTD1a, KTD2b and KER1b in the reporting month.

7.2 Complaints, Notification of Summons and Prosecution

- 7.2.1 No environmental complaint, notification of summons and successful prosecution were received in the reporting month.
- 7.2.2 Cumulative complaint log, summaries of complaints, notification of summons and successful prosecutions are presented in **Appendix L.**



8. IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES

8.1 Implementation Status

8.1.1 The Contractor has implemented environmental mitigation measures and requirements as stated in the EIA Reports, the EP and the EM&A Manuals. The implementation status of the mitigation measures during the reporting month is summarized in **Appendix J**. Status of required submission under the EP during the reporting period is summarized in **Table 8.1**.

EP Condition	Submission	Submission Date
EP-337/2009		
Condition 2.3	Management Organization of Main Construction Companies	18/12/2015
Condition 2.4	Design Drawing of the Project	18/12/2015
Condition 2.11	Landscape Mitigation Plan(s)	18/12/2015
Condition 3.3	Monthly EM&A Report (May 2019)	14/06/2019
EP-339/2009/A		
Condition 2.4	Management Organization of Main Construction Companies	18/12/2015
Condition 2.5	Design Drawing of the Project	18/12/2015
Condition 3.3	Monthly EM&A Report (May 2019)	14/06/2019
EP-451/2013		
Condition 2.3	Management Organization of Main Construction Companies	18/12/2015
Condition 2.4	Design Drawing of the Project	18/12/2015
Condition 2.5	Landscape Mitigation Plan(s)	18/12/2015
Condition 2.10	Supplementary Contamination Assessment Report	18/12/2015
Condition 3.3	Baseline Monitoring Report	12/02/2016
Condition 3.4	Monthly EM&A Report (May 2019)	14/06/2019

 Table 8.1
 Status of Required Submission under Environmental Permit

MATERIALAB CONSULTANTS LIMITED Room 723 & 725, 7/F. Block B. Tel :+852 2450 8238

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9. FUTURE KEY ISSUES

9.1 Construction Programme for the Next Two Months

- Installation of sheet pile for drainage works
- Excavation and laying of drainage pipe and manhole
- · Removal of temporary decking and temporary road pavement
- Construction of SUS structure
- Excavation and ELS construction
- Construction of District Cooling System
- Construction of Subway A
- · Construction of road base and road pavement

9.2 Key Issues for the Coming Month

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

9.3 Monitoring Schedules for the Next Three Months

9.3.1 The tentative schedules for environmental monitoring in the coming three months are provided in **Appendix E**.



10. CONCLUSIONS

- 10.1.1 24-hour TSP impact monitoring and construction noise monitoring were carried out in the reporting month, no Action / Limit Level exceedance was recorded during the period.
- 10.1.2 No complaint of air quality was received. Therefore, no impact 1-hour TSP monitoring was conducted in the reporting month.
- 10.1.3 Four environmental site inspections were carried out in the reporting month. Recommendations on mitigation measures on chemical and waste management was given to the Contractor for remediating the deficiencies identified during the site inspections.
- 10.1.4 Four weekly Landscape and Visual Site audits were carried out on 5, 12, 19 and 26 June 2019 and two of them 5 and 19 June 2019 were carried out by a Registered Landscape Architect in the reporting month. The weekly Landscape and Visual Impact reports were counter-signed by IEC as according to the requirement of EM&A Manual (AEIAR-130/2009).
- 10.1.5 Referring to the Contractor's information, no environmental complaint, notification of summons and successful prosecution was received in the reporting month.

10.2 Comment and Recommendations

- 10.2.1 The recommended environmental mitigation measures, as proposed in the EIA reports and EM&A Manuals shall be effectively implemented to minimize the potential environmental impacts from the Project. The EM&A programme would effectively monitor the environmental impacts generated from the construction activities and ensure the proper implementation of mitigation measures.
- 10.2.2 According to the environmental audit performed in the reporting month, the following recommendations were made:

Air Quality Impact

• No specific observation was identified in the reporting month.

Construction Noise Impact

• No specific observation was identified in the reporting month.

Water Quality Impact

• No specific observation was identified in the reporting month.

Chemical and Waste Management

• All waste generated at the site should be cleared regularly.

Land Contamination

• No specific observation was identified in the reporting month.

Landscape and Visual Impact

• No specific observation was identified in the reporting month.

General Condition

• No specific observation was identified in the reporting month.

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Permit / Licenses

No specific observation was identified in the reporting month.

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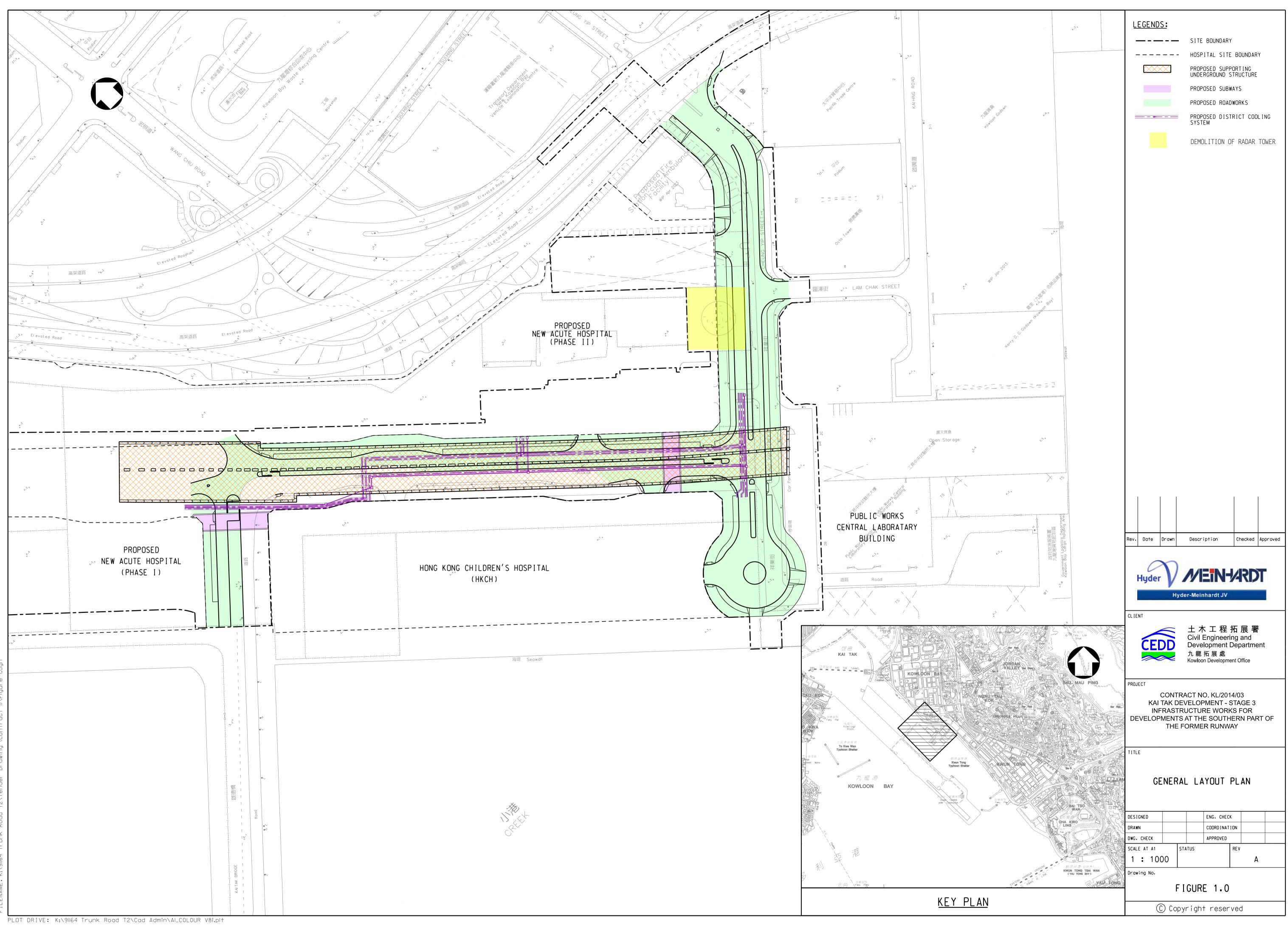
 E-mail
 : mcl@fugro.com

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Figure 1

Project General Layout



NTED BY: kitchan 18/2/2015 13:00:43 .ENAME: K:\91164 Trunk Road T2\Tender Drawing (Contract 1)\

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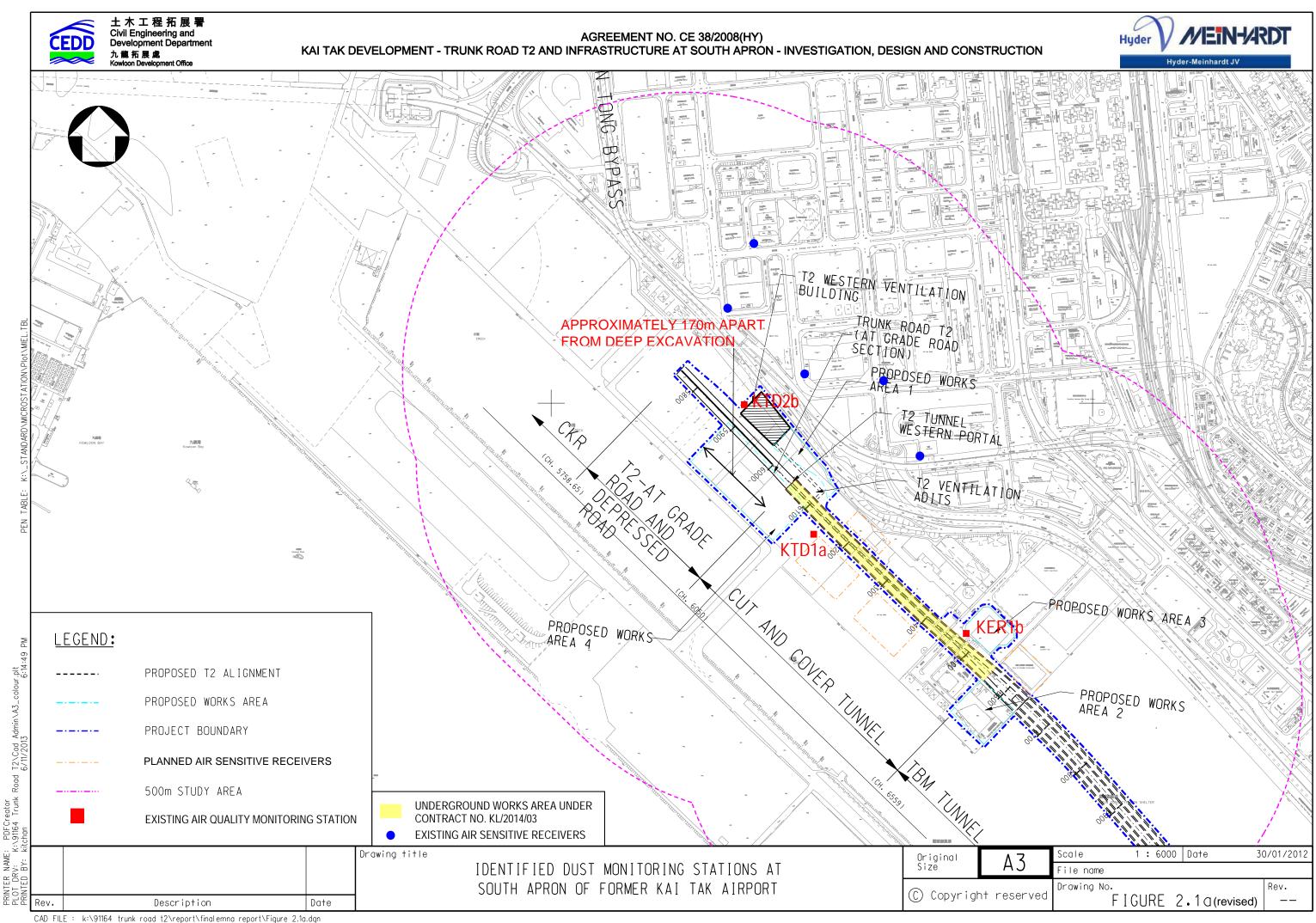
 E-mail
 : mcl@fugro.com

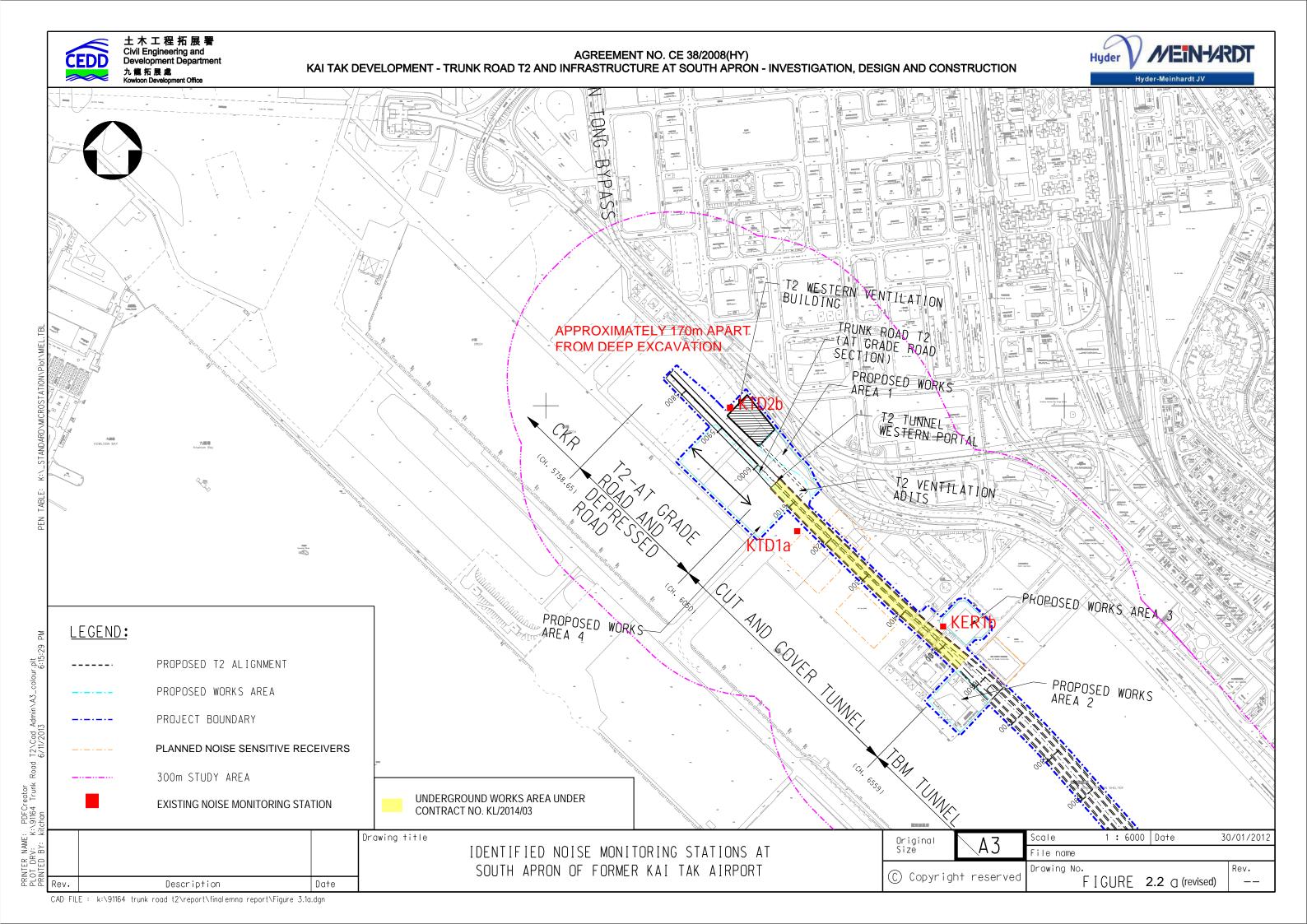
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Figure 2

Air and Noise Monitoring Locations





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Appendix A

Construction Programme

vity ID	Activity Name	Rem	Start	Finish	ay 7			ine 18		
		Dur			19 26	02	09	16 23	30	07
KL/2014/03-Stag	e 3 Infrastructure Works for Developments at the Southern Part of the For	mer R	unway							
Project Key Dates										
Project Completi	on Date									
K-PK-PCD-1000	Section 1-Remainder of the Works (i.e. all Works except Works included in other Section of the Work)	0		31-May-19*		1		er of the Works (
K-PK-PCD-1100	Section 1A - Construction of supporting underground structure	0		06-Jul-19*						♦ Section
K-PK-PCD-1300	Section 3 - Construction of District Cooling System (DCS)	0		31-May-19*				ction of District	:	
K-PK-PCD-1600	Section 5 - Completion of All Landscape Softworks	0		08-Jul-19*					:	
K-PK-PCD-1800	Section 7 - Preservation and Protection of Existing Trees	0		09-Jul-19*						♦ Se
Site Handover Da	ate									
K-PK-SHD-1300	Portion C	0		09-Aug-19*						
K-PK-SHD-1400	Portion D	0		31-May-19*		Portion 1	D			
K-PK-SHD-1500	Portion E	0		31-May-19*		Portion	E			
K-PK-SHD-1600	Portion F	0		31-May-19*		Portion	F			
K-PK-SHD-1900	Portion K	0		31-May-19*		Portion 1	K			
K-PK-SHD-2000	Portion M	0		31-May-19*		Portion 1	М			
K-PK-SHD-2100	Portion N	0		31-May-19*		Portion 1	N			
K-PK-SHD-2200	Portion O	0		31-May-19*		Portion	0			
K-PK-SHD-2400	Portion Q	0		09-Aug-19*						
K-PK-SHD-2500	Portion R	0		31-May-19*		Portion 1	Ŕ			
General Submiss	ion					•				
Temporary Utilit	y Diversion Works									
Temporary Diversio	on for Watermain Works									
Laying Proposed (I	Fresh) Watermain									
K-PA-TUD-2152	Removal of Temporary Support to Utilities at Zone 1	15	22-Jun-19	07-Jul-19						Rem
Temporary Diversio	on for CLP Cable at CH6+560					-				
K-PA-TUD-4100	Removal of Temporary Support to Utilities at Zone 4	15	19-Jun-19	03-Jul-19					P	Removal o



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Project ID :42 3MRP Jun - Aug 19 Layout : KL201403 3MRP Page 1 of 6

r Rur		,		CEDD	九龍拓 Kowloon De	ment De 要處 welopment	epartment	
Ju 49	9				Augus 50	et.		ber 51
	14	21	28	04	11	18	25	01
ept Wor	ks inclu	ded in othe	er Sectio	on of the W	Vork)			
-								
tion 1A -	Constr	uction of su	upportin	ng undergro	ound stru	cture		
			TT	0				
DCS)								
-~)								
ection 5	- Comp	letion of A	ll L and	scape Soft	works			
cenon y	Comp	ICTION OF A		scape Soft	WUIKS			
Section '	7 D	ervation ar	d Proto	ation of F-	intina T-			
section	/ - rres	ervation ar	iu riote	CUON OF EX	asung Ir	ces		
				♦ Pe	ortion C			
				♦ Pe	ortion Q			
movalo	f Tempo	orary Supp	ort to U	tilities at 7	Cone 1			
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l of Tarr	nora	Support to	Helle:	a of Zona				
i of tem	iporary	Support to	ountie	s at Zone 4	t			
			3 Month	ns Rolling	Program	me		
		Date	1	evision	Chec		Approve	ed
	31-May			9 - Aug 19				
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			-		1		1	

Hyder - Meinhar		KL/2014/03 Kai Tak Development -	Stage 3 Infrastructure Wo	rks for Dev	velopments a	t the Sou	uthern Part of th	e Former Runway	土木工程拓展署 Civil Engineering and Development Department 九龍拓展劇 Kondoro Development Office	
Activity ID	Activity Name		Rem Start Dur	Finish	Y 7		June 48	July 49	August 50	Der 51
Temporary Traffic	c Management				19 26	02	09 16 23	30 07 14	21 28 04 11 18 25	01
Implementation of T	Temporary Traffic	Arrangement								
K-PA-TTA-8960	TTA stage 5 - Ro	ad diversion for Handover of Portion C and Portion Q	0	09-Aug-19					◆ TTA stage 5 - Road diver	rsion fc
Interfacing Works	S									
K-PA-INT-4000	Joint inspection a	nd handover for connecting waterworks (NAH)	4 09-Jul-19	12-Jul-19				Joint inspec	ction and handover for connecting waterworks (NAH	f)
Materials Procure	ement (Major N	Aaterials)								
Water Works										
K-PA-MP-1050	Manufacturing &	delivery to site	10 20-Aug-18 A	09-Jun-19]	Manufacturing & delivery to	o site		
Prelimiaries										
K-DR-PRE-1800	Submission of tin	ne-lapsed photographs and video	162 20-Feb-16 A	08-Nov-19						
Barge Loading Fa	cilities									
K-DR-PRE-1485	Demolition of the	barging point	13 01-Jun-19	17-Jun-19			Demolition of the	e barging point		
Section 1 of the W	orks-Remainde	r of the Works								
Roadwork and Dr	rainage Works									
Road D4-3 (Ching	Shung Road)									
Zone 2 R & D Work.	s (Stage 1) CH410	-CH340								
SCR1137	Sewerage connect	tion	0 16-May-19 A	25-May-19 A		ge connection				
Zone 1 & 2 and Shir	ng Fung Road R &	D Works (Stage 2) CH410-CH340								
SCR1360	Additional DCS (CH -6 to 0	44 01-Jun-19	25-Jul-19					Additional DCS CH -6 to 0	
SCR1370	Sewerage (FMH-	B to FMH-A)	15 13-May-19 A	19-Jun-19			Sewerage (FN	IH-B to FMH-A)		
SCR1380	Lay salt waterma	ins	18 01-Jun-19	22-Jun-19			Lay salt v	vatermains		
SCR1390	Salt watermain c	onnection	17 24-Jun-19	13-Jul-19				Salt wate	rmain connection	
SCR1400	Lay fresh watern	nains	18 15-May-19 A	22-Jun-19			Lay fresh	watermains		
SCR1410	fresh watermain	connection	22 24-Jun-19	20-Jul-19					fresh watermain connection	
SCR1420	Proposed drainag	e M112 to M118 and gullies	20 01-Jun-19	25-Jun-19			Propo	sed drainage M112 to M118	3 and gullies	
SCR1430	Lay new UU at r	oundabout	22 22-Jun-19	19-Jul-19				L	ay new UU at roundabout	
					I			<u>.</u>		
		Milestone Critical Activity					Project ID :42 3MRP Jun -		3 Months Rolling Programme Date Revision Checked Appro	ved
	AND BRIDGE CORP	Non-Critical Activity	3 MRP Jun 2	2019 - Ai	ıq 2019		Layout : KL201403 3MRF Page 2 of 6	31-Ma		<u>+cu</u>
		ORATION Remaining Level of Effort Actual Work Actual Work		Page 2 of 6	J					



	EINHARDT	KL/2014/03 Kai Tak Development - Stage 3	Infrastr	ucture Wo	rks for Dev	velopments	at the Sout	hern Part of 1	the Former
Hyder - Mei	Activity Name		Rem	Start	Finish	ay 7		June 48	
SCR1440	Trim formation	ay subbase and kerb	Dur 17	03-Jul-19	23-Jul-19	19 26	02 09		30 07
			17						
SCR1450	Lay bituminous p	pavement	15	24-Jul-19	10-Aug-19				
SCR1460	Divert traffic ont	o the permanent Shing Fung Road and Shing Cheong Road	5	12-Aug-19	17-Aug-19				
one 1 & 2 and	Shing Fung Road R &	& D Works (Stage 3) CH410-CH340							
SCR1470	Carry out and con	nplete remaining works	60	19-Aug-19	05-Nov-19				
Zone 3 R & D W	orks (Stage 2) CH270	0 to 190							
SCR1830	Trim formation, I	ay subbase and kerb	7	08-Mar-19 A	10-Jun-19		Ti	rim formation, lay sub	base and kerb
SCR1840	Lay bituminous p	avement	6	18-Mar-19 A	17-Jun-19			Lay bitumino	us pavement
SCR1860	Carry out and con	nplete remaining works	73	28-Mar-19 A	18-Sep-19				
Zone 4 R & D W	orks								
SCR2020	Storm drainage N	1107 to M105/M204 to M201	18	06-May-19 A	22-Jun-19			Storm	drainage M107 to
SCR2030	Storm drainage N	1202a to M202/M106c to M106 and gullies	6	17-Apr-19 A	20-Jun-19			Storm dra	inage M202a to
SCR2040	Sewerage FMH2	3-4 to FMH23-3	20	01-Jun-19	25-Jun-19			Se	werage FMH23-4
SCR2042	Utility Laying by	HGC, TGT, PCCW, HKBN, CT, PCCW, Wharf T&T, Towngas, CLP, ect	24	14-Jun-19	12-Jul-19				
SCR2050	Lay fresh and sa	t watermains	20	08-May-19 A	25-Jun-19			La	y fresh and salt w
SCR2060	Backfill to level	approx. +4.5 mPD to formation level	17	24-Jun-19	13-Jul-19				
SCR2070	Trim formation, I	ay subbase and kerb	16	05-Jul-19	24-Jul-19				
SCR2080	Lay bituminous p	avement	22	10-Jul-19	06-Aug-19				
SCR2095	Remaining Fresh	and Salt Watermain	22	01-Jun-19	27-Jun-19				Remaining Fresh
SCR2097	Watermain Conn	ection	8	28-Jun-19	08-Jul-19			I	W
SCR2099	Remaining DCS	on Subway A (CH285-CH315)	3	17-May-19 A	04-Jun-19		Remaining	g DCS on Subway A (СН285-СН315)
SCR2105	Remaining storm	drainage (both gate 2 and subway A)	11	17-May-19 A	14-Jun-19			Remaining storm	drainage (both ga
SCR2130	Backfill to level	approx. +4.0 mPD (formation level)	5	15-Jun-19	20-Jun-19			Backfill t	o level approx. +
SCR2140	Trim Formation,	Laying of Subbase and kerb	10	20-Jun-19	02-Jul-19				Trim Form
SCR2150	Laying of Bitum	inous Pavement	15	26-Jun-19	13-Jul-19				
SCR2160	Divert traffic ont	o the permanent Cheung Yip Street and Shing Cheong Road	2	07-Aug-19	09-Aug-19				



Critical Activity Non-Critical Activity Remaining Level of Effort Actual Work

Milestone

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Project ID :42 3MRP Jun - Aug 19 Layout : KL201403 3MRP

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r Runway	CEDD	土木工程拓展署 Civil Engineering and Development Department 九龍拓展處	
July		Kowloon Development Office August	ber
49		50	51
7 14 21	28 04	11 18 25	01
Trim fo	ormation, lay subba	ay bituminous pavement	o the
to M105/M204 to M201			
M202/M106c to M106 a	nd gullies		
-4 to FMH23-3			
Utility Laying by HG	C, TGT, PCCW, H	KBN, CT, PCCW, Wharf	Т&
watermains			
Backfill to level app			
Trim		base and kerb tuminous pavement	
h and Salt Watermain	Duy 01		
Vatermain Connection			
)			
ate 2 and subway A)			
+4.0 mPD (formation level)		
mation, Laying of Subbase			
Laying of Bitumino			
	Di Di	vert traffic onto the perma	aner

Date	3 Months Rolling P Revision	Checked	Approve
31-May-19	Jun 19 - Aug 19		

	EIN-1/4RDT	KL/2014/03 Kai Tak Development - Stage	3 Infrastru	ucture Wo	orks for Dev	elopments	at the Southern Part of t	he Forme
Hyder - Meint / ID	Activity Name		Rem Dur	Start	Finish a	y ,	June 48	
SCR2170	Storm drainage M	i204 to M205	22	10-Aug-19	06-Sep-19	19 26	02 09 16 23	30 07
SCR2172	Carry out and con	nplete remaining works	76	02-Aug-19	08-Nov-19			
Road D4-4 (Che	ung Yip Street)							
CH100 to CH150	Cheung Yip Street C	ul de Sac						
Cheung Yip Stree	t Cul de Sac							
SCR2635	Lay fresh and sal	t watermains (the other half of cul de sac)	20	01-Jun-19	25-Jun-19		Lay	fresh and salt w
SCR2640		ay subbase and kerb (the other half of cul de sac)	22	20-Jun-19	17-Jul-19			
SCR2650	Lay bituminous p	avement	23	11-Jul-19	08-Aug-19			
SCR2660	Utility Laying by	HGC, TGT, PCCW, HKBN, CT, PCCW, Wharf T&T, Towngas, CLP, ect	12	09-Aug-19	23-Aug-19			
SCR2670	Laying Cable and	Construction for Road Lighting	18	24-Aug-19	17-Sep-19			
SCR2700	Storm drainage S	MH4048717-M501a-M501	52	09-Aug-19	17-Oct-19			
CH220 - CH420 S	Southbound							
Part 2								
Water Works								
K-01-RWS-106	07 Laying of Fresh V	Vatermain Pipe	5	01-Jun-19	06-Jun-19		Laying of Fresh Watermain Pi	pę
K-01-RWS-1098	37 Laying of Salt Wa	termain Pipe	5	08-Jun-19	13-Jun-19		Laying of Salt Wate	rmain Pipe
Road Works		т.						
				14.1 10	21.4 10		Construe	tion of Subgrade
		ubgrade Works and Subbase Works	7	14-Jun-19	21-Jun-19			_
K-01-RWS-1079	97 Road Base and Pa	avement Works	5	22-Jun-19	27-Jun-19			Road Base and Pa
K-01-RWS-108	07 Temporary Road	Construction for TTA stage 3 - phase 3	6	26-Jun-19	03-Jul-19			Tempora
Part 3					-			
Laying of Draina	ge Pipe and Construc	tion of Manhole			-			
K-01-RWS-1064	12 Excavation of Dra	ainage Pipe and Manhole (M205 to M206)	6	04-Jul-19	10-Jul-19			
K-01-RWS-1064	17 Laying Drainage	Pipe and Construction Manhole	15	11-Jul-19	29-Jul-19			•
K-01-RWS-106	57 Backfilling Drain	age Pipe and Manhole	5	30-Jul-19	05-Aug-19			



Project ID :42 3MRP Jun - Aug 19 Layout : KL201403 3MRP Page 4 of 6

r Runway	CEDD	土木工程序 Civil Engineerin Development D 九龍拓展處 Kowloon Developmen	g and epartment nt Office
July 49		August 50	per 51
7 14 21	28 04	11 18	
watermains (the other half	f of cul de sac)		
Trim formation	n, lay subbase and	kerb (the othe	r half of cul de s
- <u></u>	<u></u>		
	Lay	y bituminous p	avement
			T1212
			 Utility Layin
	<u></u>		
Works and Cubb ass Was			
e Works and Subbase Wor	rks		
Pavement Works			
Pavement works			
ary Road Construction for	TTA stage 2 pho		
ary Road Construction for	1 IA stage 3 - pha	50 3	
Excavation of Drainage	Pine and Manhola	(M205 to M2	06)
Excavation of Drainage	Tipe and Mannole	(101205 10 1012	00)
	Laying Drainage	Pine and Cor	struction Manho
		Tipe and Con	
	Backfil	ling Drainage	Pipe and Manho
	- Dackin	ining Dramage	
	3 Months Rolling		
Date	Revision	Checked	Approved
31-May-19	Jun 19 - Aug 19		
			I
1			

ty ID	Activity Name	Rem	Start	Finish	ау	Ju	ine	
		Dur			7	4	8 16 23	30 0
K-01-RWS-10747	Laying of Salt Watermain Pipe	7	06-Aug-19	13-Aug-19				
Road Works								
K-01-RWS-10817	Construction of Subgrade Works and Subbase Works	5	14-Aug-19	20-Aug-19				
K-01-RWS-10827	Road Base and Pavement Works	3	21-Aug-19	23-Aug-19				
K-01-RWS-10837	Temporary Road Construction for TTA stage 3 - phase 4	5	22-Aug-19	27-Aug-19				
Miscellaneous Work	(S							
K-01-RWS-9622	Utility Laying by HGC, TGT, PCCW, HKBN, CT, PCCW, Wharf T&T, Towngas, CLP, ect (CH190 to CH420)	18	22-Aug-19	12-Sep-19				
ection 1A of the V	Works -Construction of Supporting Underground Structure							
Miscellaneous Wo	rks							
K-1A-MWS-1005	Miscellaneous works - Construction of mass concrete and other remaining works	12	15-Jan-19 A	11-Jun-19		Mise	cellaneous works -	Construction
K-1A-MWS-1010	Miscellaneous works - SUS structure Defect works and Remedial works	40	16-Feb-19 A	21-Jul-19				-
ection 3 of the W	orks- Construction of District Cooling System (Subject to Excision)							
Construction of D	Vistrict Cooling System							
								1
Construction of D	CS Works at Zone 2							
Construction of D SCR2780		44	11-Jun-19	03-Aug-19				
SCR2780	CS Works at Zone 2	44	11-Jun-19	03-Aug-19				
SCR2780	CS Works at Zone 2 Additional DCS CH -6 to 0		11-Jun-19 08-Apr-19 A	03-Aug-19 06-Jul-19				Zo
SCR2780 Construction of D	CS Works at Zone 2 Additional DCS CH -6 to 0 CS Works at Zone 4	29				Zone 4 I	DCS Works (CH27	
SCR2780 Construction of D SCR2328	CS Works at Zone 2 Additional DCS CH -6 to 0 CS Works at Zone 4 Zone 4 DCS Works (CH315 - CH336 & CYS Section)	29	08-Apr-19 A	06-Jul-19		Zone 4 I	DCS Works (CH27	
SCR2780 Construction of D SCR2328 SCR2329	CS Works at Zone 2 Additional DCS CH -6 to 0 CS Works at Zone 4 Zone 4 DCS Works (CH315 - CH336 & CYS Section) Zone 4 DCS Works (CH270 - CH315)	29	08-Apr-19 A 10-May-19 A	06-Jul-19		Zone 4 I	DCS Works (CH27	
SCR2780 Construction of D SCR2328 SCR2329 SCR2330	CS Works at Zone 2 Additional DCS CH -6 to 0 CS Works at Zone 4 Zone 4 DCS Works (CH315 - CH336 & CYS Section) Zone 4 DCS Works (CH270 - CH315) Testing of DCS - pressure test	29 6 7	08-Apr-19 A 10-May-19 A 26-Jul-19	06-Jul-19 08-Jun-19 03-Aug-19		Zone 4 I	DCS Works (CH27	
SCR2780 Construction of D SCR2328 SCR2329 SCR2330 SCR2340 SCR2350	CS Works at Zone 2 Additional DCS CH -6 to 0 CS Works at Zone 4 Zone 4 DCS Works (CH315 - CH336 & CYS Section) Zone 4 DCS Works (CH270 - CH315) Testing of DCS - pressure test Testing of DCS - chemical cleaning	29 6 7 7	08-Apr-19 A 10-May-19 A 26-Jul-19 05-Aug-19	06-Jul-19 08-Jun-19 03-Aug-19 12-Aug-19		Zone 4 I	DCS Works (CH27	
SCR2780 Construction of D SCR2328 SCR2329 SCR2330 SCR2340 SCR2350	CS Works at Zone 2 Additional DCS CH -6 to 0 CS Works at Zone 4 Zone 4 DCS Works (CH315 - CH336 & CYS Section) Zone 4 DCS Works (CH270 - CH315) Testing of DCS - pressure test Testing of DCS - chemical cleaning Submission of testing records, as-built drawings	29 6 7 7	08-Apr-19 A 10-May-19 A 26-Jul-19 05-Aug-19	06-Jul-19 08-Jun-19 03-Aug-19 12-Aug-19		Zone 4 I	DCS Works (CH27	
SCR2780 Construction of D SCR2328 SCR2329 SCR2330 SCR2330 SCR2340 SCR2350 ScR2350	CS Works at Zone 2 Additional DCS CH -6 to 0 CS Works at Zone 4 Zone 4 DCS Works (CH315 - CH336 & CYS Section) Zone 4 DCS Works (CH270 - CH315) Testing of DCS - pressure test Testing of DCS - chemical cleaning Submission of testing records, as-built drawings	29 6 7 15	08-Apr-19 A 10-May-19 A 26-Jul-19 05-Aug-19	06-Jul-19 08-Jun-19 03-Aug-19 12-Aug-19		Zone 4 I	DCS Works (CH27	
SCR2780 Construction of D SCR2328 SCR2329 SCR2330 SCR2330 SCR2340 SCR2350 Section 4A of the M Bay 1 to Bay 3 SCR1978	CS Works at Zone 2 Additional DCS CH -6 to 0 CS Works at Zone 4 Zone 4 DCS Works (CH315 - CH336 & CYS Section) Zone 4 DCS Works (CH270 - CH315) Testing of DCS - pressure test Testing of DCS - chemical cleaning Submission of testing records, as-built drawings Works-Construction of Subway A (Subject to Excision)	29 6 7 15	08-Apr-19 A 10-May-19 A 26-Jul-19 05-Aug-19 13-Aug-19	06-Jul-19 08-Jun-19 03-Aug-19 12-Aug-19 30-Aug-19		Zone 4 I	DCS Works (CH27	Zor 0 - CH315)



Project ID :42 3MRP Jun - Aug 19 Layout : KL201403 3MRP Page 5 of 6

r Runway	CEDD	土木工程拓展 Civil Engineering an Development Depar 九龍拓展處 Kowloon Development Offic	
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		Laying of Sal	
		Cor	struction of S
		001	budenon or c
		<u></u>	<u></u>
			Road Base a
			Tempoi
			-
f mass concrete and other	remaining works		
Miscella	neous works - SUS	structure Defect	works and R
	Additional	DCS CH -6 to 0)
e 4 DCS Works (CH315	CH336 & CVS Se	ction)	
e + Des Works (eris is	- CH550 & C1550	cuony	
	Testing of I	DCS - pressure	test
	-	-	
		Testing of DCS	- chemical
		result of DCs	5 - enemicai (
			Sul
	Miscel	laneous works o	f Subway A (
I	O Manife D III - D		
	3 Months Rolling P		
Date	Revision	Checked	Approved
31-May-19	Jun 19 - Aug 19		
		.	
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	Hyder Meinhard		KL/2014/03 Kai Tak Dev	velopment - Stage 3	3 Infrastru	ucture Wo	orks for De	velop	men	its a	at the S	outhe	ern Pa	rt of th	e Fo	rmer
	Activity ID	Activity Name			Rem	Start	Finish	ay				Ju	ne			
					Dur			7				4	-8			
								1	9	26	02	09	16	23	30	07
	Sections Completio	on Date														
	K-PK-SCC-2000	Completion of Se	ection 1A-Construction of supporting underground s	tructure	0		21-Jul-19									
]																





3 MRP Jun 2019 - Aug 2019 Page 6 of 6

Project ID :42 3MRP Jun - Aug 19 Layout : KL201403 3MRP Page 6 of 6

July August ps 49 50 64 11 18 25 0 • Completion of Section 1A-Construction of supporting un • Completion of Section 1A-Construction of supporting un • Completion of Section 1A-Construction of supporting un • Completion of Section 1A-Construction of supporting un • Completion of Section 1A-Construction of supporting un	July August 50 ps 14 21 28 04 11 18 25 01 • Completion of Section 1A-Construction of supporting und	er Runway					CEDD				土: Civil Dev 九龍	土木工程拓展署 Civil Engineering and Development Department 九龍拓展處 Kowtoon Development Office				
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Completion of Section 1A-Construction of supporting un Solution Soluti	Completion of Section 1A-Construction of supporting unc Solution Solut			_								50				
3 Months Rolling Programme Date Revision Checked Approved	3 Months Rolling Programme Date Revision Checked Approved		14		21		28		04		11		18		25	01
Date Revision Checked Approved	Date Revision Checked Approved			•	Com	pleti	on o	f Se	ction	1A-0	Const	ructio	on of	supp	oorting	g und
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31-May-19 Jun 19 - Aug 10	31-May-19 Jun 19 - Aug 19							Re	evisio	on				A	pprove	ed
			31-N	lay	-19	-	Ju	in 19) - Aı	ıg 19		-				

Room 723 & 725, 7/F, Block B, Profit Industrial Building, 1-15 Kwai Fung Crescent, Kwai Fong, Hong Kong.
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 E-mail
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 Website
 : www.fugro.com



Appendix B

Project Organization Chart

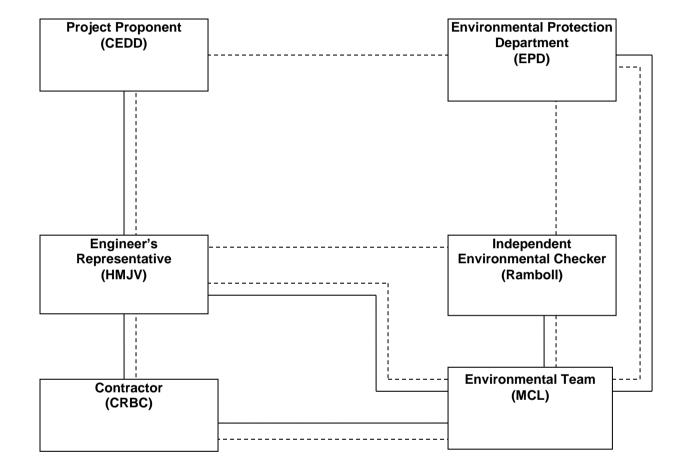
Room 723 & 725, 7/F, Block B, Profit Industrial Building, 1-15 Kwai Fung Crescent, Kwai Fong, Hong Kong.
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 Fax
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Legend	Legend:								
	Line of Reporting								
	Line of Communication								

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Appendix C

Action and Limit Levels for Air Quality and Noise

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Action and Limit Levels for 24-hr TSP and 1-hr TSP

Parameter	Monitoring Station	Action Level (µg/m³)	Limit Level (µg/ m³)	
	KTD1a	177		
24-hr TSP (µg/m ³)	KTD2b	157	260	
(µg/m²)	KER1b	172		
*1 br TSD	KTD1a	285		
*1-hr TSP (µg/m³)	KTD2b	279	500	
(µg/m°)	KER1b	295		

Note:

1-hr TSP monitoring should be required in case of complaints.

Action and Limit Levels for Construction Noise, Leq (30min), dB(A)

Time Period	Location	Action	Limit
0700-1900 hrs on normal weekdays	KTD1a KTD2b KER1b	When one documented complaint is received	75 dB(A)

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Appendix D

Calibration Certificates of Monitoring Equipment

Party of the Party		C r e n t	-	7			D	ALIBRATION UE DATE: ber 17, 2019
VII	61	2	cate g				ntion	
		and the second second	Calibration			lion		
Cal. Date:	October 1	7,2018	Rootsi	meter S/N:	438320	Ta:	294	°К
Operator:	Jim Tisch					Pa:	755.7	mm Hg
Calibration	Model #:	TE-5025A	Calib	prator S/N:	2154			
		1						
		Vol. Init	Vol. Final	ΔVol.	ΔTime	ΔΡ	ΔH	
	Run	(m3)	(m3)	(m3)	(min)	(mm Hg)	(in H2O)	
	1	1	2	1	1.4590	3.2	2.00	1
	2		4	1	1.0410	6.4	4.00	4
	3		6	1	0.9310	7.9	5.00	4
	5		8	1	0.8840	8.8	5.50	
		9	101	T	0.7520	12.7	8.00	1
		•	C	Data Tabula	tion			
	Vstd	Qstd	$\sqrt{\Delta H \left(\frac{Pa}{Pstd}\right)}$)(<u>Tstd</u>)		Qa	$\sqrt{\Delta H(Ta/Pa)}$	
	(m3)	(x-axis) (y-axi		is)	Va	(x-axis)	(y-axis)	
	1.0035	0.6878			0.9958		0.8821	
	0.9993	0.9599	2.007	78	0.9915	0.9525	1.2475	1
	0.9973	1.0712	2.244	18	0.9895	1.0629	1.3948	
	0.9961	1.1268	2.354		0.9884	1.1180	1.4628	
	0.9909	1.3536	2.839		0.9832	1.3432	1.7642	
	OCTD	m= b=	2.130		0.4	m=	1.33386	
	QSTD	D= r=	-0.041 0.999		QA	b= r=	-0.02601 0.99996	
		1-	0.999			1-	0.99990	1
		A1/ 1//=	10 . 11/	Calculation				
	the second se	and the second se	/Pstd)(Tstd/Ta)		ΔVol((Pa-Δ	P)/Pa)	
	Ustd=	Vstd/∆Time				Va/∆Time		
		11	For subsequ	ent flow rat	te calculation	1s:	\ \	
	Qstd=	1/m ((\\ \ \ \ \ \ H (-	Pa <u>(Tstd</u> Pstd Ta)))-b)	Qa=	1/m ((√∆⊦	l(Та/Ра))-b)	
		Conditions						
Tstd:	298.15			[RECA	IBRATION	
Pstd:	Statement of the second se	mm Hg			LIS EPA roco	mmendear	nual recalibratio	on per 1000
H. calibrato		(ey ter reading (in	H20)				legulations Part !	
		eter reading (ii					Reference Meth	
		perature (°K)					ended Particulat	
				1			re, 9.2.17, page 3	
Pa: actual ba	nometric p	essure (mm	18/	1	the	Atmochho	re 9/1/ nage	

sch Environmental, Inc.

45 South Miami Avenue

illage of Cleves, OH 45002

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

FUGRO TECHNICAL SERVICES LIMITED

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Project : Env	ironmantal M	lonitoring Wo	rks For Cor	ntract No. KL	N/2015/07		Date of	Calibration:	24-Mar-19
Location : K1	D1a						Next Calib	ration Date:	23-Jun-19
Brand:	1	Tisch						Technician:	Mike Kan
Model:	I	E-5170		S/N:	4037				
				00110	TIONS				
	C				ITIONS	manta d Desas		764	
	Se	a Level Press		1018.0	Co	rrected Press		764 291	
		remper	ature (°C):	17.5		Tem	perature (K):	291	
			1	CALIBRATI	ON ORIFIC	CE			
		Make:		Tisch		Qstd Slope	:	2.13015	
		Model:		TE-5025A		Qstd Intercept	:	-0.04186	
	Calibr	ation Date:		17-Oct-18		Expiry Date	:	17-Oct-19	
	5	S/N:		2154					
				CALIBR	ATIONS				
Plate No.	H2O (L)	H2O (R)	H2O	Qstd	1	IC		LINEAR	
Flate NO.	(in)	(in)	(in)	(m ³ /min)	(chart)	(corrected) F	REGRESSIC	N
18	6.80	-6.00	12.800	1.725	42.00	42.64	Slope =	30.2225	
13	4.20	-5.60	9.800	1.512	36.00	36.55	Intercept =	-9.7073	
10	3.60	-3.40	7.000	1.281	28.00	28.43	Corr. coeff.:	0.9954	
7	2.40	-2.20	4.600	1.042	20.00	20.30	0.2		
5	1.20	-1.60	2.800	0.817	16.00	16.24			
Calculations	s:					2			
		Pstd)(Tstd/Ta))-b]			FLO	OW RATE CH	ART	
IC = I[Sqrt(Pa		Ta)]			45.00				. 11
Qstd = stand					45.00			*	
IC = correcte		onse			40.00	0		1	-
I = actual cha					35.00	b		1	
m = calibrate					Q 30.00			/	
b = calibrato					Ise		/		
		luring calibrat			25.00	0	/		
Pa = actual p Tstd = 298 d		ng calibration	(mm Hg)	a 20.00	o –	-			
P std = 298 d	•				trat 15.00		1		
		tion of sampl	or flow		0 15.00		1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1		
1	298/Tav)(Pav		er now.	Actual Cha 10.00	0				
m = sample		100]]-0]			₹ 5.00	0			_
b = sampler					0.00				
l = chart res						0.000 0.50	0 1.000	1.500 2.	000
Tav = daily a		erature					dard Flow Rate (
	verage press					Clark			

WAN KA HO

Project Consultant

Report Date: 25 Mar 2019

Fugro Development Centre, 5 Lok Yi Street, Tai Lam, Tuen Mun, N.T., Hong Kong. Tel : +852 2450 8233 Fax : +852 2450 6138 E-mail : matlab@fugro.com Website : www.fugro.com



Project : Env	rironmantal M	Ionitoring Wor	ks For Con	tract No. KLN	/2015/07		Date of	Calibration: 24-Mar-1
Location : K	FD2b						Next Calib	ration Date: 23-Jun-19
Brand:		Tisch						Technician: Mike Kan
Model:		TE-5170		S/N:	3838			
				COND	TIONS			
	Se	a Level Press	sure (hPa):	1018.0	Corr	ected Pressu	re (mm Hg):	764
		Temper	ature (°C):	17.5		Tem	perature (K):	291
				CALIBRATI	ON ORIFICE			
		Make:		Tisch		Qstd Slope:		2.13015
		Model:	10	TE-5025A	Q	std Intercept:		-0.04186
		ation Date:		17-Oct-18		Expiry Date:		17-Oct-19
	5	5/N:		2154				
				CALIBR	ATIONS			
Plate No.	H2O (L)	H2O (R)	H2O	Qstd	1	IC		LINEAR
	(in)	(in)	(in)	(m ³ /min)	(chart)	(corrected)		REGRESSION
18	7.00	-6.40	13.400	1.764	54.00	54.82	Slope =	28.9732
13	5.20	-4.80	10.000	1.527	46.00	46.70	Intercept =	3.7516
10	3.80	-3.20	7.000	1.281	42.00	42.64	Corr. coeff.=	0.9935
7	2.60	-2.00	4.600	1.042	34.00	34.52		
5	1.40	-1.40	2.800	0.817	26.00	26.40		
Calculations		Detal/Tetal/Te		Ĩ				
	a/Pstd)(Tstd/	Pstd)(Tstd/Ta))-о]			FLO	W RATE CH	IART
	ard flow rate				60.00	1		
	d chart respo	nse						*
	art response	150			50.00	-		
	or Qstd slope				~			1
	r Qstd interce				€ 40.00			/
		uring calibrati	on (deg K)		(O) 40.00 30.00		1	
		g calibration			g 30.00	1	/	
rstd = 298 d	eg K				+		•	
Pstd = 760 mm Hg					eq 20.00	-		
For subsequent calculation of sampler flow:					00.02 Actual Char 00.01 1000			
1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)					10.00 Yt	1		
m = sampler slope								
b = sampler intercept					0.00	000 0.57	0 4 000	1 500 0.000
= chart res					0.	.000 0.50	1.000	1.500 2.000
	verage tempe					Stand	ard Flow Rate	(m ³ /min)
Pav = daily a	verage press	ure						Arrest Sectors 14

WAN KA HO

Project Consultant

Report Date: 25 Mar 2019

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Tuen Mun, N.T.,	
Hong Kong.	

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	ironmantal M	onitoring Wor	ks For Con	tract No. KLI	N/2015/07			Calibration: 24-Mar
	ocation : KER1b Brand Tisch							ration Date: 23-Jun Technician: Mike K
Brand:				0.01	0.400			rechnician. wike K
Model:		E-5170		S/N:	3482			
				COND	TIONS			
	Sea	a Level Press	ure (hPa):	1018.0	Corr	ected Pressu	re (mm Hg):	764
		Temper	ature (°C):	17.5		Temp	perature (K):	291
				CALIBRATI	ON ORIFIC	E		
		Make:		Tisch		Qstd Slope:		2.13015
		Model:		TE-5025A	G	std Intercept:		-0.04186
	Calibra	ation Date:		17-Oct-18		Expiry Date:		17-Oct-19
	S	5/N:		2154				
				43	755			
	H2O (L)	H2O (R)	H2O	Qstd	1	IC		LINEAR
Plate No.	(in)	(in)	(in)	(m ³ /min)	(chart)	(corrected)		REGRESSION
18	7.20	-6.20	13.400	1.764	44.00	44.67	Slope =	32.7929
13	5.40	-5.40	10.800	1.586	38.00	38.58	Intercept =	-13.5339
10	3.20	-3.60	6.800	1.262	26.00	26.40	Corr. coeff.:	0.9973
7	2.60	-2.20	4.800	1.064	22.00			
5	1.20	-1.80	3.000	0.845	14.00	14.21	-	
Calculations	s:							
	Sqrt(H2O(Pa/I		a))-b]			FLO	OW RATE C	HART
	a/Pstd)(Tstd/	Га)]			50.00			
Qstd = stand							1	
	ed chart respo	onse			45.00			/
I = actual cha					40.00			1
	or Qstd slope				<u></u> 35.00			/
	or Qstd interce emperature d		ion (dea K)		(IC) 35.00 30.00 25.00 25.00	C.+		/
	pressure durir		and the second second		g 25.00			<u>^</u>
Tstd = $298 d$		ig calibration	(1111119)		a 20.00	1	1	2
Pstd = 760 mm Hg					Her 15.00			
For subsequent calculation of sampler flow:					10.00 Actual C			
1/m((1)[Sqrt(298/Tav)(Pav/760)]-b)								
m = sampler slope								
b = sample	the second se				0.00			1 500 0 00
I = chart res						0.000 0.5	00 1.000	1.500 2.00
	verage temp	erature				Stan	dard Flow Rate	e (m ³ /min)
Pav = daily average pressure						S.un	and the state of the state	A COLORADO

WAN KA HO

Project Consultant

Report Date: 25 Mar 2019

Room 723 & 725, 7/F, Block B, Profit Industrial Building, 1-15 Kwai Fung Crescent, Kwai Fong, Hong Kong.

Tel :+852 2450 8238 Fax :+852 2450 8032 E-mail :mcl@fugro.com Website :www.fugro.com



Project : Env	vironmantal N	Ionitoring Wor				_	ION SPREAD		Calibration	· 22- lun-1
Location : K		formering the		indot NO. NE	14/201	0/01			ration Date	
Brand:		Tisch						NOAL OUND	Technician	
Model:		TE-5170		S/N:	4037				roomioidin	. I Turiolo /
1012		120100								
	- U		1.1.1.1	COND	ITION	S	100			
	Se	a Level Press	ure (hPa):	1004.7		Corre	ected Pressu	re (mm Hg):	754	
		Temper	ature (°C):	30.7			Temp	perature (K):	304	
				CALIBRATI	ON O	RIFICE				
		Make:		Tisch			Qstd Slope:		2.13015	
		Model:		TE-5025A		Qs	std Intercept:		-0.04186	
	Calibr	ation Date:		17-Oct-18			Expiry Date:		17-Oct-19	
	\$	S/N:		2154						
				43	755					
Plate No.	H2O (L)	H2O (R)	H2O	Qstd	1.00	1	IC		LINEAF	8
r lato rto.	(in)	(in)	(in)	(m ³ /min)	(cl	nart)	(corrected)		REGRESSI	ON
18	4.50	-3.00	7.500	1.288		50.00	49.32	Slope =	37.5204	1
13	4.00	-2.50	6.500	1.200		46.00	45.37	Intercept =	-0.0105	5
10	3.50	-2.00	5.500	1.106		40.00	39.46	Corr. coeff.:	0.9923	3
7	2.50	-1.00	3.500	0.886	1	34.00	33.54			
5	1.50	-0.50	2.000	0.675		26.00	25.65			
Calculations										
		Pstd)(Tstd/Ta))-b]				FLO	W RATE C	HART	
	a/Pstd)(Tstd/	[a)]				60.00				
	lard flow rate					00.00				
	ed chart respo	onse				50.00			-	
= actual cha						50100			1	
	or Qstd slope				(C)	40.00				
		epi luring calibrati	on (dea K)		Response (IC)				/	
	and the second sec	ng calibration (spor	30.00		1	-	
ra = actuar p rstd = 298 d		ig calibration	(initi rig)		Re			1		
					hart	20.00				
Pstd = 760 mm Hg For subsequent calculation of sampler flow:					C					
1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)					Actual Chart	10.00				
m = sampler slope					A	101 117				
= sample						0.00	1			
I = chart response							000 0	0.500	1.000	1.500
	verage tempe	erature								
	verage press						Stand	lard Flow Rate	(m³/min)	

Wan Ka Ho

Wan Ka Ho Project Consultant

Report Date: 23 Jun 204

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Project : Env	ironmantal M	Ionitoring Wo	rks For Cor	ntract No. Kl	_N/20	15/07		Date of	Calibration:	22-Jun-19
Location : KE	ER1b							Next Calib	oration Date:	21-Sep-19
Brand:	1	Fisch							Technician:	Francis Xi
Model:	Г	TE-5170		S/N:	348:	2				
				COND		NS				
	Se	a Level Press	ure (hPa):	1004.7			ected Pressu	re (mm Ha):	754	
			ature (°C):	30.7				perature (K):	304	
				CALIBRAT	ION	ORIFICE	1			
		Make:		Tisch			Qstd Slope:		2.13015	
		Model:		TE-5025A		Qs	std Intercept:		-0.04186	
	Calibr	ation Date:		17-Oct-18			Expiry Date:		17-Oct-19	
	5	5/N:		2154						_
					755	-				
Plate No.	H2O (L)	H2O (R)	H2O	Qstd		1	IC		LINEAR	
	(in)	(in)	(in)	(m ³ /min)	(chart)	(corrected)		REGRESSIC	N
18	6.00	-4.50	10.500	1.520		50.00	49.32	Slope =	32.8473	
13	4.50	-4.00	8.500	1.370		46.00	45.37	Intercept =	0.0200	
10	3.00	-2.00	5.000	1.055		37.00	36.50	Corr. coeff.:	0.9929	
7	2.50	-1.50	4.000	0.946	1	30.00	29.59	10.00		
5	1.50	-1.00	2.500	0.752	-	25.00	24.66			
Calculations		Pstd)(Tstd/Ta	1) 61		_					-
	a/Pstd)(Tstd/))-D]				FLO	OW RATE C	HART	
Qstd = stand		ia)]				60.00				
	d chart respo	nse					· · · · ·			
= actual cha	a de la serie de la serie de	100				50.00			-	
	or Qstd slope				-				1	
	r Qstd interce				onse (IC)	40.00	+		/	
		luring calibrat	ion (dea K)		use			- Y		
		ng calibration			odsa	30.00	-	-		_
Tstd = 298 d					tRe		1	4		
Pstd = 760 mm Hg					Char	20.00				
For subsequent calculation of sampler flow:					al C					_
1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)					Actual Chart Resp	10.00				
m = sampler slope										
b = sampler intercept						0.00	4	a line	1 100	
= chart res	ponse					0.	.000 0.50	1.000	1.500	2.000
Tav = daily average temperature							Stan	dard Flow Rate	(m ³ /min)	
Pav = daily average pressure							2.311		the second second	

Wan Ka Ho

Project Consultant

Report Date: 23 Jun 204

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Project : Env	ironmantal M	onitoring Wor	ks For Cor	ntract No. KL	N/201	5/07		Date of	Calibration: 22-Jun-19
Location : KT	Db							Next Calibr	ration Date: 21-Sep-1
Brand:	Brand: Tisch							Technician: Francis X	
Model:	Г	E-5170		S/N:	3838				
				COND	ITION	S			
	Se	a Level Press	ure (hPa):	1004.7			cted Pressu	re (mm Ha):	754
			ature (°C):	30.7				perature (K):	304
				CALIBRATI	ON O	RIFICE			
		Make:		Tisch			Qstd Slope:		2.13015
		Model:		TE-5025A		Qs	td Intercept:		-0.04186
	Calibr	ation Date:		17-Oct-18			Expiry Date:		17-Oct-19
_	5	5/N:		2154					
					755		-	-	
Plate No.	H2O (L)	H2O (R)	H2O	Qstd		1	IC	-	LINEAR
	(in)	(in)	(in)	(m ³ /min)		nart)	(corrected)		REGRESSION
18	5.00	-6.00	11.000	1.555		48.00	47.35	Slope =	27.4013
13	4.50	-4.50	9.000	1.409		44.00	43.40	Intercept =	4.9446
10	3.50	-3.20	6.700	1.218		40.00	39.46	Corr. coeff.:	0.9952
7	2.00	-2.00	4.000	0.946		30.00	29.59		
5	1.00	-1.40	2.400	0.737		26.00	25.65		
Calculations		Pstd)(Tstd/Ta	u))-b]					T. L. M.L.L.	1.1.1.
TO THE SHOP	a/Pstd)(Tstd/		())-0]				FLO	OW RATE CH	HART
	ard flow rate				1.1.3	50.00	T		
C = correcte	d chart respo	onse			1.1	45.00			
= actual cha	art response				5 . 3	40.00			
m = calibrate	or Qstd slope	0			O	35.00		/	
b = calibrato	r Qstd interce	ept			-	30.00		/	
Ta = actual to	emperature d	luring calibrat	ion (deg K)		onse			1	
Pa = actual p	pressure durin	ng calibration	(mm Hg)		esp	25.00		4	
Tstd = 298 d	eg K				L R	20.00			
Pstd = 760 mm Hg					Cha	15.00			
For subsequent calculation of sampler flow:					Actual Chart Resp	10.00	-		
1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)					Act	5.00			
m = sampler slope									
o = sample						0.00	000 0.50	00 1.000	1.500 2.000
= chart res						0.	0.00	1.000	1.000 2.000
Tav = daily average temperature							Stan	dard Flow Rate	(m³/min)
Pav = daily average pressure									

Report Date: 23 Jun 2019

Wan Ka Ho **Project Consultant**



Certificate of Conformity and Calibration

Instrument Model:- Serial Number Firmware revision	CEL-633 1488270 V006-03				
<u>Microphone Type:-</u> Serial Number	CEL-251 2772		nplifier Type:- Number	CEL-495 004014	
Instrument Class/Type:-	1				
Applicable standards:-					11 1
IEC 61672: 2002 / EN 606 IEC 60651 1979 (Sound L			ns For Sound Leve	el Meters)	
Note:- The test sequences p Standard - IEC61672. The co electro-acoustic performance Standards - IEC60651 and IE	mbination of tests perf to all applicable stand	ormed are considered to con	nfirm the products	level meter	
Test Conditions:-	30 °C 58 %RH 1003 mBar	Test Engineer:- Date of Issue:-	Chris Taylor September 7,	, 2018	

Declaration of conformity:-

This test certificate confirms that the instrument specified above has been successfully tested to comply with the manufacturer's published specifications. Tests are performed using equipment traceable to national standards in accordance with Casella's ISO 9001:2008 quality procedures. This product is certified as being compliant to the requirements of the CE Directive.

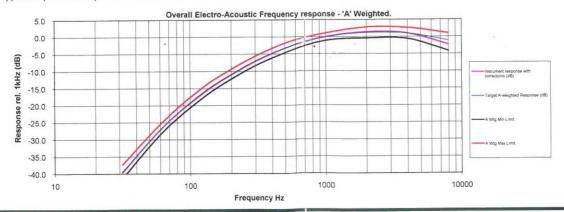
Test	Summary:

Self Generated Noise Test	All Tests Pass
Electrical Signal Test Of Frequency Weightings	All Tests Pass
Frequency & Time Weightings At 1 kHz	All Tests Pass
Level Linearity On The Reference Level Range	All Tests Pass
Toneburst Response Test	All Tests Pass
C-peak Sound Levels	All Tests Pass
Overload Indication	All Tests Pass
Acoustic Tests	All Tests Pass

Combined Electro-Acoustic Frequency Response - A Weighted

Combined Electro-Acoustic Frequency Response - A Weighted (IEC 61672-3:2006)

The following A-Weighted frequency response graph shows this instruments overall frequency response based upon the application of multi-frequency pressure field calibrations. The microphones Pressure to Free field correction coefficients are applied to pressure response. Reference level taken at 1kHz.



Ca	sel	la	UK

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Casella USA 415 Lawrence Bell Drive, Unit 4 Buffalo, NY 14221, USA

Toll Free (800) 366-2966 Tel: +1 (716) 276 3040 E-mail: info@casellausa.com

olutions.com

Casella India

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ldeal Industries China Room 305, Building 1, No.1279, Chuanqiao Rd, Pudong New District, Shanghai, China

Tel: +86-21-31263188 Fax: +86-21-61605906 Email: info@casellasolutions.cn

Casella Australia

Ideal Industries (Aust) PTY. LTD Unit 17, 35 Dunlop Rd, Mulgrave. Vic. 3170, Australia.

Email: australia@casellasolutions.com

Tested to CEL-63X test sheet TP444 revision 01-00



CEL-495 003917

Certificate of Conformity and Calibration

Preamplifier Type:-

Serial Number

Instrument Model:-	CEL-633A
Serial Number	1488289
Firmware revision	V006-03
Microphone Type:-	CEL-251
Serial Number	2706
Instrument Class/Type:-	1

Applicable standards:-

IEC 61672: 2002 / EN 60651 (Electroacoustics - Sound Level Meters) IEC 60651 1979 (Sound Level Meters), ANSI S1.4: 1983 (Specifications For Sound Level Meters)

Note:- The test sequences performed in this report are in accordance with the current Sound level meter Standard - IEC61672. The combination of tests performed are considered to confirm the products electro-acoustic performance to all applicable standards including superceeded Sound Level Meter Standards - IEC60651 and IEC60804.

Test Conditions:-	31 °C	Test Engineer:-	Chris Taylor
	51 %RH	Date of Issue:-	September 10, 2018
	1000 mBar		

Declaration of conformity:-

This test certificate confirms that the instrument specified above has been successfully tested to comply with the manufacturer's published specifications. Tests are performed using equipment traceable to national standards in accordance with Casella's ISO 9001:2008 quality procedures. This product is certified as being compliant to the requirements of the CE Directive.

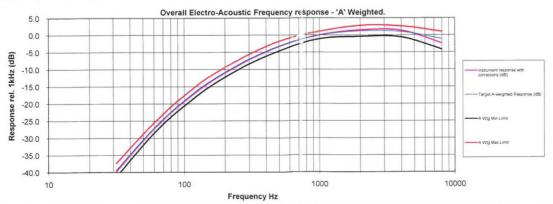
Ţ	est	Sum	mary:-	

Self Generated Noise Test	All Tests Pass
Electrical Signal Test Of Frequency Weightings	All Tests Pass
Frequency & Time Weightings At 1 kHz	All Tests Pass
Level Linearity On The Reference Level Range	All Tests Pass
Toneburst Response Test	All Tests Pass
C-peak Sound Levels	All Tests Pass
Overload Indication	All Tests Pass
Acoustic Tests	All Tests Pass

Combined Electro-Acoustic Frequency Response - A Weighted

Combined Electro-Acoustic Frequency Response - A Weighted (IEC 61672-3:2006)

The following A-Weighted frequency response graph shows this instruments overall frequency response based upon the application of multi-frequency pressure field calibrations. The microphones Pressure to Free field correction coefficients are applied to pressure response. Reference level taken at 1kHz.



Case	lla	U	K	

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Tel: +86-21-31263188 Fax: +86-21-61605906 Email: info@casellasolutions.cn Casella Australia

Ideal Industries (Aust) PTY. LTD Unit 17, 35 Dunlop Rd, Mulgrave. Vic. 3170, Australia.

Email: australia@casellasolutions.com

Tested to CEL-63X test sheet TP444 revision 01-00



Fugro Development Centre, 5 Lok Yi Street, Tai Lam, Tuen Mun, N.T., Hong Kong.

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Report no.: 183057CA195161(1)

Page 1 of 1

CALIBRATION CERTIFICATE OF SOUND CALIBRATOR

Client Supplied Information

Client : Fugro Technical Services Limited

Address : Room 723 & 725, 7/F., Block B Profit Industrial Building, 1-15 Kwai Fung Crescent, Kwai Chung, N.T.

Project : Calibration Services

Details of Unit Under Test, UUT

Description	÷	Sound Calibrator
Manufacturer		Casella (Model no. CEL-120/1)
Serial No.	:	3321858
Next Calibration Date	:	06-Mar-2020
Specification Limit	:	EN 60942: 2003 Type 1

Laboratory Information

Description	ţ,	Reference Sound level	meter			
Equipment ID.	÷	R-119-1				
Date of Calibra	tion	: 07-Mar-2019	Ambient Temperature :	22	°C	
Calibration Loc	atio	1: Calibration Laborato	ory of FTS			
Method Used	ţ	By direct comparison				

Calibration Results :

Parameters (Setting of UUT)	Mean Value (error of measurement)	Specification Limit(dB)
94dB	-0.3 dB	±0.4dB
114dB	-0.3 dB	10.405

Remarks :

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

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

3. The equipment does comply with the specification limit.

Checked by :	William	Date :	12-3-2019	Certified by : _	K J. Loung	Date	15-3-201	9
CA-R-297 (22/07/2009)			Leu	ing Kwok Tai (Assi	stant Man	ager)	

Leung Kwok Tai (Assistant Manager)

** End of Report **

Fugro Development Centre, 5 Lok Yi Street, Tai Lam, Tuen Mun, N.T., Hong Kong. Tel : +852 2450 8233 Fax : +852 2450 6138 E-mail : matlab@fugro.com Website : www.fugro.com



Report No. : 183057CA185180(1)

CALIBRATION CERTIFICATE OF ANEMOMETER

Client Supplied Information

Client : MateriaLab Consultants Ltd.

Project : Calibration Services

Details of Unit Under Test, UUT

Description	:	Anemometer
Manufacturer	:	Benetech
Model No.	:	GM816
Serial No.	:	13372555
Equipment ID.	:	N/A
Next Calibration Date	:	08-Jun-2019

Laboratory Information

Details of Reference Equipment -

Description :	Reference Anemometer				
Equipment ID.:	R-101-4				
Date of Calibration :	09-Jun-2018	Ambient Temperature	:	22 °C	
Calibration Location :	Calibration Laboratory of	FTS			
Method Used : By direct Comparison					

Calibration Results :

Reference Reading	UUT Reading	Error
(m/s)	(m/s)	(m/s)
1.96	2.2	0.2
4.04	4.1	0.1
6.05	6.2	0.2
8.02	7.9	-0.1
10.06	9.7	-0.4

Remark :

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

Checked by : / Milliam	Date :	12-6-2018	Certified by :	his	Date :	13.6.20/8-
CA-R-297 (22/07/2009)			Chan	Chun Wai (Mar	nager)	

** End of Report **

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Page 1 of 1

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Page 1 of 1

Report No. : 183057CA195782

CALIBRATION CERTIFICATE OF ANEMOMETER

Client Supplied Information

Client : Fugro Technical Services Ltd.

Project : Calibration Services

Details of Unit Under Test, UUT

Description : Anemometer

Manufacturer : Benetech

Model No. : GM816

Serial No. : N/A

Equipment ID.: WS-07

Next Calibration Date : 07-Jun-2020

Laboratory Information

Details of Reference Equipment -

Description :	Reference Anemometer				
Equipment ID.:	R-101-4				
Date of Calibration	08-Jun-2019	Ambient Temperature	1	22 °C	
Calibration Location :	Calibration Laboratory o	f FTS			
Method Used : R-C-279					

Calibration Results :

Reference Reading	UUT Reading	Error
(m/s)	(m/s)	(m/s)
2.06	1.9	-0.2
4.02	4.4	0.4
6.05	6.5	0.5
8.06	8.6	0.5
10.25	10.1	-0.2

Remark :

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

Checked by :	William	Date :	20-6-2019	Certified by :	Kit Loung	Date: 24-6-2019
CA-R-297 (22/07/200				Le	ung Kwok Tai Ass	istant Manager)

** End of Report **

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 Website
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Appendix E

Environmental Monitoring Schedule

Room 723 & 725, 7/F, Block B, Profit Industrial Building, 1-15 Kwai Fung Crescent, Kwai Fong, Hong Kong.

: +852 2450 8238 : +852 2450 8032 E-mail : mcl@fugro.com



KL/2014/03 - Kai Tak Development – Stage 3 Infrastructure Works for Developments at the **Project:** Southern Part of the Former Runway

Impact Monitoring Schedule (June 2019)

Tel

Fax

Sun	Mon	Tue	Wed	Thur	Fri	Sat
						1
2	3 TSP Monitoring Noise Monitoring	4	5	6	7	8 TSP Monitoring Noise Monitoring
9	10	11	12	13	14 TSP Monitoring Noise Monitoring	15
16	17	18	19	20 TSP Monitoring Noise Monitoring	21	22
23	24	25	26 TSP Monitoring Noise Monitoring	27	28	29
30						

Remarks

1. Monitoring Locations - KTD1a: Centre of Excellence in Paediatric (Children's Hospital), KTD2b: G/IC Zone next to Kwun Tong Bypass (Next to the site of the New Acute Hospital), KER1b: Site Boundary at Cheung Yip Street

2. TSP Monitoring: 24-hours TSP Monitoring per 6 days, and 3 x 1-hour TSP Monitoring per 6 days (as required in case of complaints)

3. Noise Monitoring: Leq (30 min) between 0700 and 1900 hours.

Room 723 & 725, 7/F, Block B, Profit Industrial Building, 1-15 Kwai Fung Crescent, Kwai Fong, Hong Kong.

: +852 2450 8238 : +852 2450 8032 E-mail : mcl@fugro.com



Project: KL/2014/03 - Kai Tak Development – Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway

Impact Monitoring Schedule (July 2019)

Tel

Fax

Sun	Mon	Tue	Wed	Thur	Fri	Sat
	1	2 TSP Monitoring Noise Monitoring	3	4	5	6
7	8 TSP Monitoring Noise Monitoring	9	10	11	12	13 TSP Monitoring Noise Monitoring
14	15	16	17	18	19 TSP Monitoring Noise Monitoring	20
21	22	23	24	25 TSP Monitoring Noise Monitoring	26	27
28	29	30	31 TSP Monitoring Noise Monitoring			

Remarks

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

2. Monitoring Locations - KTD1a: Centre of Excellence in Paediatric (Children's Hospital), KTD2b: G/IC Zone next to Kwun Tong Bypass (Next to the site of the New Acute Hospital), KER1b: Site Boundary at Cheung Yip Street

3. TSP Monitoring: 24-hours TSP Monitoring per 6 days, and 3 x 1-hour TSP Monitoring per 6 days (as required in case of complaints)

4. Noise Monitoring: Leq (30 min) between 0700 and 1900 hours.

Tel

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: +852 2450 8238 Fax : +852 2450 8032 E-mail : mcl@fugro.com



Project: KL/2014/03 - Kai Tak Development – Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway

Sun	Mon	Tue	Wed	Thur	Fri	Sat
				1	2	3
4	5	6 TSP Monitoring Noise Monitoring	7	8	9	10
11	12 TSP Monitoring Noise Monitoring	13	14	15	16	17 TSP Monitoring Noise Monitoring
18	19	20	21	22	23 TSP Monitoring Noise Monitoring	24
25	26	27	28	29 TSP Monitoring Noise Monitoring	30	31

Impact Monitoring Schedule (August 2019)

Remarks

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

2. Monitoring Locations - KTD1a: Centre of Excellence in Paediatric (Children's Hospital), KTD2b: G/IC Zone next to Kwun Tong Bypass (Next to the site of the New Acute Hospital), KER1b: Site Boundary at Cheung Yip Street

3. TSP Monitoring: 24-hours TSP Monitoring per 6 days, and 3 x 1-hour TSP Monitoring per 6 days (as required in case of complaints)

4. Noise Monitoring: Leq (30 min) between 0700 and 1900 hours.

Tel

Fax

Room 723 & 725, 7/F, Block B, Profit Industrial Building, 1-15 Kwai Fung Crescent, Kwai Fong, Hong Kong

: +852 2450 8238 : +852 2450 8032 E-mail : mcl@fugro.com



Project: KL/2014/03 - Kai Tak Development – Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway

Mon Wed Fri Sun Tue Thur Sat 2 3 5 6 7 1 4 **TSP** Monitoring Noise Monitoring 12 9 10 11 13 14 8 **TSP** Monitoring Noise Monitoring 17 18 15 16 19 20 21 **TSP** Monitoring **TSP** Monitoring Noise Monitoring Noise Monitoring 24 25 22 23 26 27 28 **TSP** Monitoring Noise Monitoring 29 30

Impact Monitoring Schedule (September 2019)

Remarks

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

2. Monitoring Locations - KTD1a: Centre of Excellence in Paediatric (Children's Hospital), KTD2b: G/IC Zone next to Kwun Tong Bypass (Next to the site of the New Acute Hospital), KER1b: Site Boundary at Cheung Yip Street

3. TSP Monitoring: 24-hours TSP Monitoring per 6 days, and 3 x 1-hour TSP Monitoring per 6 days (as required in case of complaints)

Noise Monitoring: Leg (30 min) between 0700 and 1900 hours. 4.

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Appendix F

Air Quality Monitoring Data

24-hour TSP Monitoring Result for Kai Tak Development - Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway

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Start Date	Weather Condition	Air Temperature (K)	Atmospheric Pressure, Pa	Filter W	eight (g)	Particulate weight (g)	Sampling Time(hrs)	Flow (m ³ /ı	Rate min.)	Average flow (m ³ /min.)	Total volume (m ³⁾	Conc. (ug/m ³)	Action Level	Limit Level
	Condition	(13)	(mmHg)	Initial	Final	weight (g)	11116(1113)	Initial	Final	(11 /1111.)	(m ·	(ug/m)	(ug/m^3)	(ug/m ³)
3-Jun-19	Cloudy	300.5	755.5	2.6925	2.7536	0.0611	24	1.62	1.64	1.63	2346.0	26		
8-Jun-19	Fine	303.1	756.4	2.7200	2.8408	0.1208	24	1.42	1.44	1.43	2063.9	59		
14-Jun-19	Fine	301.4	751.9	2.6876	2.7942	0.1066	24	1.49	1.51	1.50	2156.1	49	177	260
20-Jun-19	Fine	303.1	755.2	2.6924	2.7996	0.1072	24	1.42	1.44	1.43	2063.0	52		
26-Jun-19	Cloudy	301.6	753.1	2.6917	2.8680	0.1763	24	1.49	1.51	1.50	2156.6	82		
											Min	26		
											Max	82		
											Average	54		

KTD1a - Centre of Excellence in Paediatrics (Children's Hospital)

KTD 2b: G/IC Zone next to Kwun Tong Bypass (Next to the site of the New Acute Hospital)

Start Date	Weather Condition	Air Temperature (K)	Atmospheric Pressure, Pa	Filter W	eight (g)	Particulate weight (g)	Sampling Time(hrs)	Flow (m ³ /ı	Rate min.)	Average flow (m ³ /min.)	Total volume (m ³⁾	Conc. (ug/m ³)	Action Level	Limit Level
	Contaition	(13)	(mmHg)	Initial	Final	weight (g)	11116(1113)	Initial	Final	(111 /11111.)	(m)	(ug/m)	(ug/m^3)	(ug/m ³)
3-Jun-19	Cloudy	300.5	755.5	2.6717	2.7856	0.1139	24	1.63	1.64	1.63	2354.1	48		
8-Jun-19	Fine	303.1	756.4	2.7042	2.8357	0.1315	24	1.55	1.64	1.59	2296.7	57		
14-Jun-19	Fine	301.4	751.9	2.6644	2.8227	0.1583	24	1.55	1.57	1.56	2243.6	71	157	260
20-Jun-19	Fine	303.1	755.2	2.6883	2.8497	0.1614	24	1.62	1.64	1.63	2347.9	69		
26-Jun-19	Cloudy	301.6	753.1	2.6800	2.8317	0.1517	24	1.48	1.49	1.49	2139.0	71		
											Min	48		

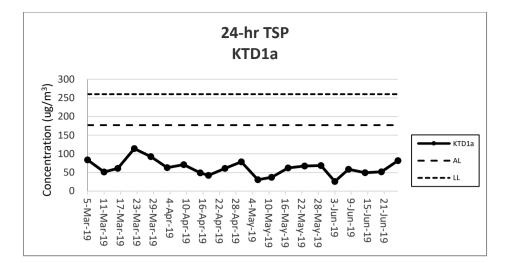
Max 71 Average 63

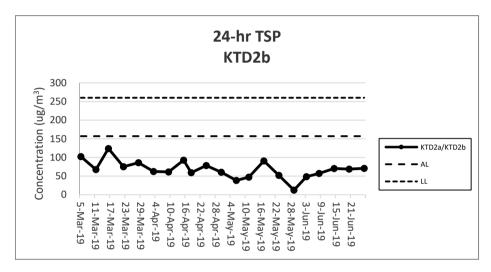
KER1b - Site Boundary at Cheung Yip Street

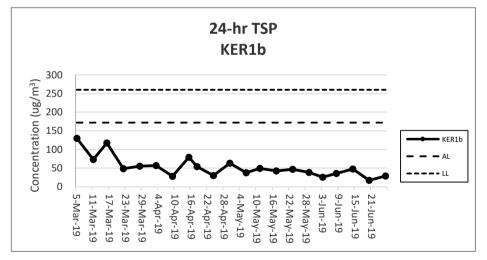
Start Date	Weather Condition	Air Temperature (K)	Atmospheric Pressure, Pa	Filter W	eight (g)	Particulate weight (g)	Sampling Time(hrs)	Flow (m ³ /i	Rate min.)	Average flow (m ³ /min.)	Total volume (m ³⁾	Conc. (ug/m ³)	Action Level	Limit Level
	Contaition	(13)	(mmHg)	Initial	Final	weight (g)	11110(1113)	Initial	Final	(m/mn.)	(m)	(ug/m)	(ug/m^3)	(ug/m ³)
3-Jun-19	Cloudy	300.5	755.5	2.6929	2.7431	0.0502	24	1.34	1.35	1.34	1934.4	26		
8-Jun-19	Fine	303.1	756.4	2.7143	2.7802	0.0659	24	1.27	1.29	1.28	1841.7	36		
14-Jun-19	Fine	301.4	751.9	2.6724	2.7561	0.0837	24	1.21	1.23	1.22	1752.9	48	172	260
20-Jun-19	Fine	303.1	755.2	2.6955	2.7259	0.0304	24	1.21	1.23	1.22	1752.3	17		
26-Jun-19	Cloudy	301.6	753.1	2.7066	2.7599	0.0533	24	1.27	1.29	1.28	1841.9	29		
											Min	17		
											Max	48		
											Average	31		

Note:

<u>Underline</u>: Exceedance of Action Level <u>Underline and Bold</u>: Exceedance of Limit Level







Note:

- 1) The major activities being carried out on site during the reporting period can be referred to Section 1.3.2.
- 2) The weather conditions during the reporting period can be referred to Appendix K.
- 3) Any other factors which might affect the monitoing results can be referred to Section 2.6.4.
- 4) QA/QC results, calibration results and detection limits can be referred to Appendix D.

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Appendix G

Noise Monitoring Data

Noise Impact Monitoring Result for

Kai Tak Development - Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway

Date	Start Time	Leq 30min dB(A)	L10 dB(A)	L90 dB(A)	Wind Speed (m/s)	Weather
03-Jun-19	9:57	70	73	66	0.3	Cloudy
08-Jun-19	9:02	68	73	66	0.6	Fine
14-Jun-19	10:00	69	72	69	0.1	Fine
20-Jun-19	9:17	67	69	66	0.0	Fine
26-Jun-19	10:42	69	70	66	0.5	Cloudy
	Max	70				
	Min	67				
	Limit Level	75				

KTD 1a: Centre of Excellence in Paediatrics (Children's Hospital)

KTD 2b: G/IC Zone next to Kwun Tong Bypass (Next to the site of the New Acute Hospital)

Date	Start Time	Leq 30min dB(A)	L10 dB(A)	L90 dB(A)	Wind Speed (m/s)	Weather
03-Jun-19	10:44	75	78	68	0.4	Cloudy
08-Jun-19	9:47	75	77	69	0.8	Fine
14-Jun-19	10:40	69	70	67	0.3	Fine
20-Jun-19	10:15	74	76	73	0.0	Fine
26-Jun-19	10:09	71	73	69	0.8	Cloudy
	Max	75				
	Min	69				
	Limit Level	75				

KER 1b: Site Boundary at Cheung Yip Street

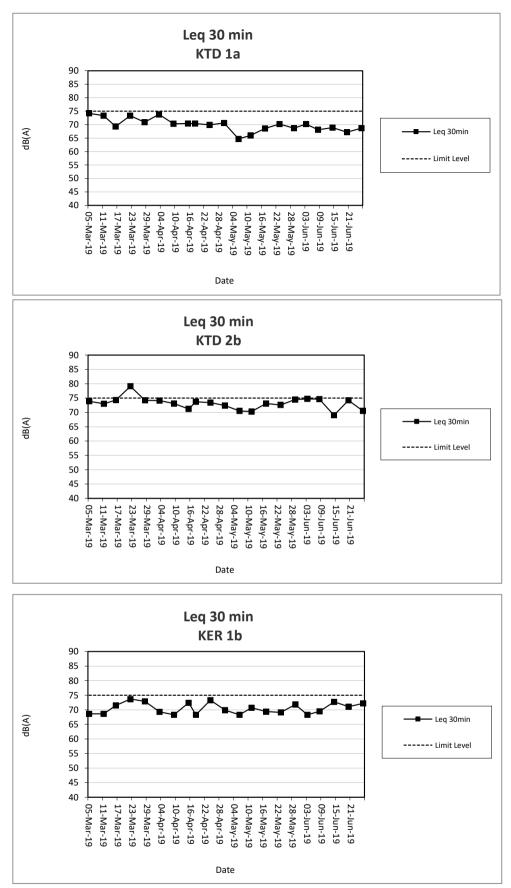
Date	Start Time	Leq 30min dB(A)	L10 dB(A)	L90 dB(A)	Wind Speed (m/s)	Weather
03-Jun-19	9:04	68	71	65	0.4	Cloudy
					-	,
08-Jun-19	10:39	70	72	67	0.5	Fine
14-Jun-19	11:10	73	74	69	0.1	Fine
20-Jun-19	8:30	71	73	70	0.0	Fine
26-Jun-19	9:30	72	74	68	0.5	Cloudy
	Max	73				
	Min	68				
	Limit Level	75				

Note:

KTD1a: Façade Measurement

KTD2b & KER1b: Free-field measurement (+3dB(A) correction has been applied)

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



Note:

1) The major activities being carried out on site during the reporting period can be referred to Section 1.3.2.

2) The weather conditions during the reporting period can be referred to Appendix K.

3) Any other factors which might affect the monitoing results can be referred to Section 3.7.2.

4) QA/QC results, calibration results and detection limits can be referred to Appendix D.

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Appendix H

Events and Action Plan

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Event and Action Plan for Construction Dust Monitoring

EVENT		ACT		-
	ET	IEC	ER	Contractor
Action Level	1 Identify acurace	1 Chook monitoring	1 Notify the Contractor	1 Postify on:
Exceedance for one sample.	 Identify sources, investigate the causes of complaint and propose remedial measures. Inform IEC and ER. Repeat measurement to confirm finding;. Increase monitoring frequency 	 Check monitoring data submitted by the ET. Check the Contractor's working methods. 	1. Notify the Contractor.	 Rectify any unacceptable practices. Amend working methods agreed with the ER as appropriate.
Exceedance for two or more consecutive samples.	 Identify sources. Inform the IEC and ER. Advise the ER on the effectiveness of the proposed remedial measures; Repeat measurements to confirm findings. Increase monitoring frequency to daily. Discuss with the IEC, ER and Contractor on remedial action required. If exceedance continues, arrange meeting with the IEC, Contractor and ER. If exceedance stops, cease additional monitoring. 	 Check monitoring data submitted by the ET. Check the Contractor's working methods. Discuss with the ET, ER and Contractor on possible remedial measures if required. Advise the ER on the effectiveness of proposed remedial measures if required. 	 Notify the Contractor. Ensure remedial measures properly implemented. 	 Submit proposals for remedial action to the ER within 3 working days of notification. Implement the agreed proposals. Amend proposal as appropriate
Limit Level		1		
Exceedance for one sample.	 Identify sources, investigate causes of exceedance and proposed remedial measures. Inform the IEC, ER, and Contractor. Repeat measurement to confirm finding. Increase monitoring frequency to daily. Assess effectiveness of the Contractor's remedial action and keep the IEC and ER informed of the results 	 Check monitoring data submitted by the ET. Check the Contractor's working methods. Discuss with the ET, ER and Contractor on possible remedial measures. Advise the ER and ET on the effectiveness of the proposed remedial measures. Supervise the implementation of remedial measures. 	 Confirm receipt of the notification of exceedance in writing. Notify the Contractor. Ensure remedial measures are properly implemented. 	 Take immediate action to avoid further exceedance. Submit proposals for remedial action to the ER and copy to the ET and IEC within 3 working days of notification. Implement the agreed proposals. Amend proposal as appropriate.
Exceedance for two or more consecutive samples	 Notify the IEC, ER and Contractor. Identify sources. Repeat measurements to confirm findings. Increase monitoring frequency to daily. Carry out analysis of the Contractor's working procedures with the ER to determine the possible mitigation to be implemented. Arrange meeting with the IEC and ER to discuss the remedial 	 Discuss amongst the ER, ET and Contractor on the potential remedial action. Review the Contractor's remedial action whenever necessary to assure their effectiveness and advise the ER and ET accordingly. Supervise the implementation of remedial measures. 	 Confirm receipt of the notification of exceedance in writing. Notify the Contractor. In consultation with the IEC and ET, agree with the Contractor on the remedial measures to be implemented. Ensure remedial measures are properly implemented. If exceedance continues, consider 	 Take immediate action to avoid further exceedance. Submit proposals for remedial action to the ER and copy to the IEC and ET within 3 working days of notification. Implement the agreed proposals. Resubmit proposals if problems still not under control. Stop the relevant portion of works as determined by the ER

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EVENT		ACT	ION	
EVENI	ET	IEC	ER	Contractor
	action to be taken. 7. Assess the effectiveness of the Contractor's remedial action and keep the IEC, EPD and ER informed of the results. 8. If exceedance stops, cease additional monitoring		what portion of works is responsible and instruct the Contractor to stop that portion of works until the exceedance is abated.	until the exceedance is abated.

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Event and Action Plan for Noise Impact

EVENT		ACT	ΓΙΟΝ	
EVENT	ET	IEC	ER	Contractor
Action Level	 Notify the IEC, ER and Contractor. Carry out investigation. Report the results of investigation to the IEC and Contractor. Discuss jointly with the ER and Contractor and formulate remedial measures. Increase the monitoring frequency to check the mitigation effectiveness 	 Review the monitoring data submitted by the ET. Review the construction methods and proposed redial measures by the Contractor, and advise the ET and ER if the proposed remedial measures would be sufficient 	 Notify the Contractor. Require the Contractor to propose remedial measures for implementation if required. 	 Submit noise mitigation proposals to the ER and copy to the IEC and ET. Implement noise mitigation proposals.
Limit Level	 Notify the IEC, ER and Contractor. Identify sources. Repeat measurements to confirm findings. Carry out analysis of the Contractor's working procedures with the ER and Contractor to determine possible mitigations to be implemented. Record the causes and action taken for the exceedances. Increase the monitoring frequency. Assess the effectiveness of the Contractor's remedial action with the ER and keep the IEC informed of the results. If exceedance stops, cease additional monitoring 	 Discuss amongst the ER, ET and Contractor on the potential remedial action. Review the Contractor's remedial action whenever necessary to assure their effectiveness and advise the ER accordingly. Supervise the implementation of remedial measures. 	 Confirm receipt of notification of exceedance in writing. Notify the Contractor. Require the Contractor to propose remedial measures for the analysed noise problems. Ensure remedial measures are properly implemented. If exceedance continues, consider what portion of work is responsible and instruct the Contractor to stop that portion of works until the exceedance is abated. 	 Take immediate action to avoid further exceedance. Submit proposals for remedial action to the ER and copy to the ET and IEC within 3 working days of notification. Implement the agreed proposals. Resubmit proposals if problems still not under control. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

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Event and Action Plan for Landscape and Visual Impact

EVENT		ACT	ION	
EVENT	ET	IEC	ER	Contractor
Non-conformity on one occasion	 Identify Source Inform the IEC and the ER Discuss remedial actions with the IEC, the ER and the Contractor Monitor remedial actions until rectification has been completed 	 Check report Check the Contractor's working method Discuss with the ET and the Contractor on possible remedial measures Advise the ER on effectiveness of proposed remedial measures. Check implementation of remedial measures. 	 Notify Contractor Ensure remedial measures are properly implemented 	 Amend working methods Rectify damage and undertake any necessary replacement
Repeated Non- conformity	 Identify Source Inform the IEC and the ER Increase monitoring frequency Discuss remedial actions with the IEC, the ER and the Contractor Monitor remedial actions until rectification has been completed If exceedance stops, cease additional monitoring 	 Check monitoring report Check the Contractor's working method Discuss with the ET and the Contractor on possible remedial measures Advise the ER on effectiveness of proposed remedial measures Supervise implementation of remedial measures. 	 Notify the Contractor Ensure remedial measures are properly implemented 	 Amend working methods Rectify damage and undertake any necessary replacement

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Appendix I

Waste Flow Table

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		Actual Quant	ities of Inert C&I	D Materials Gene	erated Monthly		Actual Quantities of Non-inert C&D Wastes Generated Monthly				
Monthly Ending	Total Quantity Generated (Inert C&D)	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 2)	Chemical Waste	Others, e.g. general refuse
	(in '000m ³)	(in '000m ³)	(in '000m³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)
2016 Jan	0.159	0.101	0.058	Nil	Nil	Nil	Nil	0.023	0.00002	0.0158	0.0335
2016 Feb	0.291	0.050	0.241	Nil	Nil	Nil	1.34	0.023	0.00002	0.0158	0.0335
2016 Mar	2.7389	0.0407	0.0662	Nil	2.632	Nil	5.92	0.023	0.00002	0.0158	0.0571
2016 Apr	4.1718	0.0578	0.462	Nil	3.652	Nil	12.5	0.023	0.00002	0.0158	0.0426
2016 May	3.592	Nil	0.299	Nil	3.293	Nil	5.23	0.023	0.00002	0.0158	0.0621
2016 June	4.6035	Nil	0.8555	Nil	3.748	Nil	Nil	0.023	0.00002	0.0158	0.0619
2016 July	6.155	0.153	0.015	Nil	5.987	Nil	7.84	0.023	0.00002	0.0158	0.0433
2016 Aug	5.1155	Nil	Nil	Nil	5.1155	Nil	19.93	0.023	Nil	Nil	0.0147
2016 Sept	7.2267	Nil	Nil	Nil	7.2267	Nil	33.65	0.023	Nil	Nil	0.0103
2016 Oct	4.6448	Nil	Nil	Nil	4.6448	Nil	13.30	0.023	Nil	Nil	0.0385
2016 Nov	6.1626	Nil	Nil	Nil	6.1626	Nil	27.06	0.023	Nil	Nil	0.0192
2016 Dec	6.3522	Nil	Nil	Nil	6.3522	Nil	13.30	0.023	Nil	Nil	0.0121
Total	51.213	0.4025	1.9967	Nil	48.8138	Nil	140.07	0.276	0.00014	0.1106	0.4288

Note:

1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.

2) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging materials.

3) Total Quantity Generated (Inert) = Hard Rock and Large Broken Concrete + Reused in the Contract + Disposed as Public Fill - Imported Fill

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		Actual Quant	ities of Inert C&I	D Materials Gene	erated Monthly		Actual Quantities of Non-inert C&D Wastes Generated Monthly				
Monthly Ending	Total Quantity Generated (Inert C&D)	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 2)	Chemical Waste	Others, e.g. general refuse
	(in '000m ³)	(in '000m ³)	(in '000m³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)
2017 Jan	4.2300	Nil	Nil	Nil	4.2300	Nil	0.015	0.023	Nil	Nil	0.0109
2017 Feb	3.2128	Nil	Nil	Nil	3.2128	Nil	0.015	0.023	Nil	Nil	0.0096
2017 Mar	9.4759	Nil	Nil	Nil	9.4759	Nil	0.034	0.023	Nil	Nil	0.0162
2017 Apr	4.8827	Nil	Nil	Nil	4.8827	Nil	0.016	0.023	Nil	Nil	0.0062
2017 May	3.0366	Nil	Nil	Nil	3.0366	Nil	0.022	0.023	Nil	Nil	0.0282
2017 Jun	2.5656	Nil	Nil	Nil	2.5656	Nil	41.25	Nil	Nil	Nil	0.0357
2017 Jul	5.5267	Nil	0.7851	Nil	4.7416	Nil	4.01	0.4515	Nil	0.25	0.0364
2017 Aug	11.4734	Nil	0.0276	Nil	11.4458	Nil	7.4	Nil	Nil	Nil	0.0196
2017 Sep	23.9373	Nil	2.6167	Nil	21.3206	Nil	3.52	Nil	Nil	Nil	0.0333
2017 Oct	17.8261	Nil	0.4069	Nil	17.4192	Nil	Nil	Nil	Nil	Nil	0.0156
2017 Nov	5.8834	Nil	0.6664	Nil	5.217	Nil	Nil	Nil	Nil	Nil	0.023
2017 Dec	21.3554	Nil	0.4763	Nil	20.8791	Nil	29.13	Nil	Nil	Nil	0.022
Total	113.4059	Nil	4.9790	Nil	108.4269	Nil	85.412	0.5665	Nil	0.25	0.2567

Note:

1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.

2) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging materials.

3) Total Quantity Generated (Inert) = Hard Rock and Large Broken Concrete + Reused in the Contract + Disposed as Public Fill – Imported Fill

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Waste Flow	Table for Ye	ar 2018									
		Actual Quant	tities of Inert C&I	D Materials Gene	erated Monthly		Actual Quantities of Non-inert C&D Wastes Generated Monthly				
Monthly Ending	Total Quantity Generated (Inert C&D)	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 2)	Chemical Waste	Others, e.g. general refuse
	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)
2018 Jan	10.2340	Nil	Nil	Nil	10.2340	Nil	32.39	Nil	Nil	Nil	0.0161
2018 Feb	6.5256	Nil	Nil	Nil	6.5256	Nil	Nil	Nil	Nil	Nil	0.0235
2018 Mar	28.1995	Nil	Nil	Nil	28.1995	Nil	54.54	Nil	Nil	Nil	0.0190
2018 Apr	11.2165	Nil	Nil	Nil	11.2165	Nil	Nil	Nil	Nil	Nil	0.0270
2018 May	5.6011	Nil	Nil	Nil	5.6011	Nil	Nil	Nil	Nil	Nil	0.0140
2018 Jun	5.8072	Nil	Nil	Nil	5.8072	Nil	93.3	Nil	Nil	Nil	0.0235
2018 Jul	7.4206	Nil	Nil	Nil	7.4206	Nil	Nil	Nil	Nil	Nil	0.0383
2018 Aug	2.0815	Nil	Nil	Nil	2.0815	Nil	Nil	Nil	Nil	Nil	0.0665
2018 Sep	0.3710	Nil	Nil	Nil	0.3710	Nil	Nil	Nil	Nil	Nil	0.0436
2018 Oct	0.9087	Nil	Nil	Nil	0.9620	0.0533	Nil	Nil	Nil	Nil	0.0444
2018 Nov	0.7291	Nil	Nil	Nil	0.7733	0.0589	Nil	Nil	Nil	Nil	0.0225
2018 Dec	-0.0931	Nil	Nil	Nil	0.3860	0.4791	Nil	Nil	Nil	Nil	0.0228
Total	79.0017	Nil	Nil	Nil	79.5783	0.5913	180.23	Nil	Nil	Nil	0.3614

Note:

1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.

2) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging materials.

3) Total Quantity Generated (Inert) = Hard Rock and Large Broken Concrete + Reused in the Contract + Disposed as Public Fill – Imported Fill

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Wasteriow	/ Table for Ye		tities of Inert C&I	D Materials Gene	rated Monthly		Actual	Quantities of Non-i	nert C&D Wast	es Generated N	Ionthly
Monthly Ending	Total Quantity Generated (Inert C&D)	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging		Chemical Waste	Others, e.g. general refus
	(in '000m ³)	(in '000m ³)	(in '000m³)	(in '000m ³)	(in '000m³)	(in '000m ³)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)
2019 Jan	0.2485	Nil	Nil	Nil	0.7063	0.45774	Nil	Nil	Nil	Nil	0.0100
2019 Feb	0.2790	Nil	Nil	Nil	0.2790	Nil	Nil	Nil	Nil	Nil	0.0076
2019 Mar	0.7376	Nil	Nil	Nil	0.7376	Nil	Nil	Nil	Nil	Nil	0.0929
2019 Apr	0.3694	Nil	Nil	Nil	0.3694	Nil	Nil	Nil	Nil	Nil	0.0365
2019 May	0.4683	Nil	Nil	Nil	0.4683	Nil	Nil	Nil	Nil	Nil	0.0383
2019 Jun	0.8571	Nil	Nil	Nil	0.8571	Nil	Nil	Nil	Nil	Nil	0.0160
2019 Jul											
2019 Aug											
2019 Sep											
2019 Oct											
2019 Nov											
2019 Dec											
Total	2.9599	0	0	0	3.4177	0.4577	0	0	0	0	0.2013

Note:

1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.

2) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging materials.

3) Total Quantity Generated (Inert) = Hard Rock and Large Broken Concrete + Reused in the Contract + Disposed as Public Fill – Imported Fill

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Appendix J

Environmental Mitigation Implementation Schedule (EMIS)

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EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
Air Quality Measur	res				
New Distributor Ro	oads Serving the Pla	anned KTD			
AEIAR-130/2009 S3.2	AEIAR 130/2009 EM&A Manual S2.2	A Manual S2.2		All relevant worksites	Implemented
Decommissioning	of the Radar Statior	n of the former Kai Tak Airport			
AEIAR-130/2009 S5.2.19	AEIAR 130/2009 EM&A Manual S4.2.4	The excavation area should be limited to as small in size as possible and backfilled with clean and/or treated soil shortly after excavation work. The exposed excavated area should be covered by the tarpaulin during night time. The top layer soils should be sprayed with fine misting of water immediately before the excavation.	Contractor	All relevant worksites	Not Applicable
Trunk Road T2	I				I
AEIAR-174/2013 S4.9.2.1	AEIAR-174/2013 EM&A Manual S2.3.1.1	Watering of the construction areas 12 times per day to reduce dust emissions by 91.7%, with reference to the "Control of Open Fugitive Dust Sources" (USEPA AP-42). The amount of water to be applied would be 0.91L/m2 for the respective watering frequency.	Contractor	All relevant worksites	Implemented
		Dust enclosures with watering would be provided along the loading ramps and conveyor belts for unloading the C&D materials to the barge for dust suppression.	Contractor	All relevant worksites	Not Applicable
		8 km per hour is the recommended limit of the speed for vehicles on unpaved site roads.	Contractor	All relevant worksites	Implemented
		Good Site Practices			
AEIAR-130/2009	AEIAR 130/2009	Stockpiling site(s) should be lined with impermeable sheeting and bunded. Stockpiles should	Contractor	All relevant	Implemented

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EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status																				
S3.2, S5.2.19, AEIAR-174/2013	EM&A Manual S2.2, S4.2, AEIAR·	be fully covered by impermeable sheeting to reduce dust emission.		worksites																					
S4.9.2.2	174/2013 EM&A Manual S2.3.1.2	Use of regular watering to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather. Use of frequent watering for particularly dusty construction areas and areas close to ASRs.	Contractor	All relevant worksites	Implemented																				
		Misting for the dusty material should be carried out before being loaded into the vehicle. Any vehicle with an open load carrying area should have properly fitted side and tail boards.	Contractor	All relevant worksites	Implemented																				
							Material having the potential to create dust should not be loaded from a level higher than the side and tail boards and should be dampened and covered by a clean tarpaulin.	Contractor	All relevant worksites	Implemented															
					Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations; The tarpaulin should be properly secured and should extent at least 300 mm over the edges of the sides and tailboards. The material should also be dampened if necessary before transportation.	Contractor	All relevant worksites	Implemented																	
		The vehicles should be restricted to maximum speed of 10 km per hour. Confined haulage and delivery vehicle to designated roadways insider the site. Onsite unpaved roads should be compacted and kept free of lose materials.	Contractor	All relevant worksites	Implemented																				
																						Vehicle washing facilities should be provided at every vehicle exit point. Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.	Contractor	All relevant worksites	Implemented
					The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.																				
		Every main haul road should be scaled with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet.	Contractor	All relevant worksites	Implemented																				
		Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides.	Contractor	All relevant worksites	Implemented																				

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EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
		Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed.	Contractor	All relevant worksites	Implemented
		Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system.	Contractor	All relevant worksites	Implemented
		Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines.	Contractor	All relevant worksites	Implemented
		Open stockpiles shall be avoided or covered. Prevent placing dusty material storage piles near ASRs.	Contractor	All relevant worksites	Implemented
		Routing of vehicles and position of construction plant should be at the maximum possible distance from ASRs.	Contractor	All relevant worksites	Implemented
		Dark smoke			
		Dark smoke emission shall be control in accordance with the Air Pollution Control (Smoke) Regulation and ETWB TCW 19/2005.	Contractor	All relevant worksites	Implemented
		Plant and equipment should be well maintained to prevent dark smoke emission.	Contractor	All relevant worksites	Implemented
Noise Measures		·			
Trunk Road T2					
AEIAR-174/2013 S5.9.2.1	AEIAR-174/2013 EM&A Manual S3.4.1.1	The use of quieter plant, including Quality Powered Mechanical Equipment (QPME) is specified for the list of equipment: • Concrete lorry mixer • Dump Truck, 5.5 tonne < gross vehicle weight <= 38 tonne • Generator, Super Silenced, 70 dB(A) at 7m	Contractor	All relevant worksites	Implemented

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EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
		 Poker, vibratory, Hand-held (electric) Water Pump, Submersible (Electric) Mobile Crane - KOBELCO CKS900 Excavator, wheeled/tracked - HYUNDAI R80CR-9 			
		Use of temporary or fixed noise barriers with a surface density of at least 10kg/m ² to screen noise from movable and stationary plant.	Contractor	All relevant worksites	Implemented
		Use of enclosures with covers at top and three sides and a surface density of at least 10kg/m ² to screen noise from generally static noisy plant such as air compressors.	Contractor	All relevant worksites	Implemented
		Use of acoustic fabric for the silent piling system, drill rigs, rock drills etc.	Contractor	All relevant worksites	Implemented
		Good Site Practices			
AEIAR-130/2009 S3.3, S5.3.10, AEIAR-174/2013	AEIAR 130/2009 EM&A Manual	Only well-maintained plant should be operated on-site and plant shall be serviced regularly during the construction/ decommissioning program.	Contractor	All relevant worksites	Implemented
S5.9.2.1	S2.3, S4.3.2, AEIAR-174/2013 EM&A Manual S3.4.1.1	Silencers or mufflers on construction equipment should be utilized and shall be properly maintained during the construction/ decommissioning program.	Contractor	All relevant worksites	Implemented
	55.4.1.1	Mobile plant, if any, should be sited as far away from NSRs as possible.	Contractor	All relevant worksites	Implemented
		Machines and plant (such as trucks) that may be in intermittent use shall be shut down between works periods or should be throttled down to a minimum.	Contractor	All relevant worksites	Implemented
		Plant known to emit noise strongly in one direction shall, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.	Contractor	All relevant worksites	Implemented
		Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction/ decommissioning activities.	Contractor	All relevant worksites	Implemented

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EIA Ref EM&A Ref		Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
		Use of site hoarding as a noise barrier to screen noise at low level NSRs.	Contractor	All relevant worksites	Implemented
		For the use of hand held percussive breakers (with mass of above 10kg) and portable air compressors (supply air at 500 kPa or above), the noise level of such PME shall comply with a stringent noise emission standard and a noise emission label shall be obtained from the DEP before use at any time in construction site.	Contractor	All relevant worksites	Implemented
		Quiet powered mechanical equipment (PME) shall be used for the construction of the Project.	Contractor	All relevant worksites	Implemented
		Full enclosures shall be used to screen noise from relatively static PMEs (including air compressor, bar bender, concrete pump, generator and water pump) from sensitive receiver(s).	Contractor	All relevant worksites	Implemented
		Movable cantilevered noise barriers shall be used to screen noise from mobile PMEs (including asphalt paver, breaker, excavator and hand-held breaker) from sensitive receiver(s). These movable cantilevered noise barriers shall be located close to the mobile PMEs and shall be moved/adjusted iteratively in step with each movement of the corresponding mobile PMEs in order to maximize their noise reduction effects.	Contractor	All relevant worksites	Implemented
		Only approved or exempted Non-road Mobile Machineries (NRMMs) including regulated machines and non-road vechicles with proper labels are allowed to be used in specified activities on-site.	Contractor	All relevant worksites	Implemented
Water Quality Mea	asures				
Trunk Road T2					
		Accidental Spillage			
AEIAR-174/2013 S6.4.8.5	AEIAR-174/2013 EM&A Manual S4.2.1.1	All bentonite slurry should be stored in a container that resistant to corrosion, maintained in good conditions and securely closed; The container should be labelled in English and Chinese and note that the container is for storage of bentonite slurry only.	Contractor	All relevant worksites	Implemented

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EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
		The storage container should be placed on an area of impermeable flooring and bunded with capacity to accommodate 110% of the volume of the container size or 20% by volume stored in the area and enclosed with at least 3 sides.	Contractor	All relevant worksites	Implemented
		The storage container should be sufficiently covered to prevent rainfall entering the container or bunded area (water collected within the bund must be tested and disposed of as chemical waste, if necessary). An emergency clean up kit shall be readily available where bentonite fluid will be stored or used.	Contractor	All relevant worksites	Implemented
		The handling and disposal of bentonite slurries should be undertaken in accordance within ProPECC PN 1/94. Surplus bentonite slurries used in construction works shall be reconditioned and reused wherever practicable. Residual bentonite slurry shall be disposed of from the site as soon as possible as stipulated in Clause 8.56 of the General Specification for Civil Engineering Works. The Contractor should explore alternative disposal outlets for the residual bentonite slurry to be disposed to a public filling area and liquid bentonite slurry, if mixed with inert fill material, to be disposed to a public filling area) and disposal at landfill should be the last resort.	Contractor	All relevant worksites	Implemented
AEIAR-174/2013 S6.4.8.8	AEIAR-174/2013 EM&A Manual S4.2.1.1	In order to protect against impacts to the surrounding marine waters of the KTTS and Victoria Harbour in the event of an accidental spillage of fuel or oil, the Contractor will be required to prepare a spill response plan to the satisfaction of AFCD, EPD, FSD, Police, TD and WSD to define procedures for the control, containment and clean-up of any spillage that could occur on the construction site.	Contractor	All relevant worksites	Implemented
		Dredging, Reclamation and Filling			
		No dredging, reclamation or filling in the marine environment shall be carried out.	Contractor	All relevant worksites	Implemented
Decommissioning	of the Radar Statior	n of the former Kai Tak Airport			
		Building Demolition			

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EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
AEIAR-130/2009 \$5.4	AEIAR 130/2009 EM&A Manual S4.4	The site practices outlined in ProPECC PN 1/94 "Construction Site Drainage" should be followed as far as practicable in order to minimise surface runoff and the chance of erosion.	Contractor	All relevant worksites	Not Applicable
	54.4	There is a need to apply to EPD for a discharge licence under the WPCO for discharging effluent from the construction site. The discharge quality is required to meet the requirements specified in the discharge licence. All the runoff, wastewater or extracted groundwater generated from the works areas should be treated so that it satisfies all the standards listed in the TM-DSS. It is anticipated that the wastewater generated from the works areas would be of small quantity. Monitoring of the treated effluent quality from the works areas should be carried out in accordance with the WPCO license which is under the ambit of regional office (RO) of EPD.	Contractor	All relevant worksites	Not Applicable
		General Construction Works			
		Construction Runoff			
AEIAR- 130/2009 S3.4, S5.4/ AEIAR- 174/2013 S6.4.8.1	AEIAR 130/2009 EM&A Manual S2.4, S4.4/ AEIAR 174/2013 EM&A Manual S4.2.1.1		Contractor	All relevant worksites	Implemented
		Construction site should be provided with adequately designed perimeter channel and pre- treatment facilities and proper maintenance. The boundaries of critical areas of earthworks should be marked and surrounded by dykes or embankments for flood protection. Temporary ditches should be provided to facilitate runoff discharge into the appropriate watercourses, via a silt retention pond. Permanent drainage channels should incorporate sediment basins or traps and baffles to enhance deposition rates. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94.	Contractor	All relevant worksites	Implemented
		Ideally, construction works should be programmed to minimise surface excavation works during the rainy season (April to September). All exposed earth areas should be completed as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. If excavation of soil cannot be avoided during the	Contractor	All relevant worksites	Implemented

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EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
		rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means.			
		Sediment tanks of sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m3 capacity, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity is flexible and able to handle multiple inputs from a variety of sources and particularly suited to applications where the influent is pumped.	Contractor	All relevant worksites	Implemented
		Open stockpiles of construction materials (for examples, aggregates, sand and fill material) of more than 50 m ³ should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.	Contractor	All relevant worksites	Implemented
		Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers.	Contractor	All relevant worksites	Implemented
		Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events.	Contractor	All relevant worksites	Implemented
		Oil interceptors should be provided in the drainage system and regularly cleaned to prevent the release of oils and grease into the storm water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain.	Contractor	All relevant worksites	Implemented
		An adequately designed and located wheel washing bay should be provided at every site exit, and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains.	Contractor	All relevant worksites	Implemented

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EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
		Drainage			
		It is recommended that on-site drainage system should be installed prior to the commencement of other construction activities. Sediment traps should be installed in order to minimise the sediment loading of the effluent prior to discharge into foul sewers. There should be no direct discharge of effluent from the site into the sea.	Contractor	All relevant worksites	Implemented
		All temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge should be adequately designed for the controlled release of storm flows. All sediment control measures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rain storms. The temporarily diverted drainage should be reinstated to its original condition when the construction work has finished or the temporary diversion is no longer required.	Contractor	All relevant worksites	Implemented
		Stormwater Discharges			
		Minimum distances of 100 m should be maintained between the existing or planned stormwater discharges and the existing or planned seawater intakes.	Contractor	All relevant worksites	Implemented
		Sewage Effluent			
		Construction work force sewage discharges on site are expected to be connected to the existing trunk sewer or sewage treatment facilities. The construction sewage may need to be handled by portable chemical toilets prior to the commission of the on-site sewer system. Appropriate numbers of portable toilets should be provided by a licensed contractor to serve the large number of construction workers over the construction site. The Contractor should also be responsible for waste disposal and maintenance practices.	Contractor	All relevant worksites	Implemented
		Debris and Litter			
		In order to maintain water quality in acceptable conditions with regard to aesthetic quality, contractors should be required, under conditions of contract, to ensure that site management is optimised and that disposal of any solid materials, litter or wastes to marine waters does not occur. Debris and refuse generated on-site should be collected, handled and disposed of	Contractor	All relevant worksites	Implemented

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EIA Ref EM&A Ref		EM&A Ref Environmental Protection Measures / Mitigation Measures		Location / Timing	Construction Phase Implementation Status
		properly to avoid entering into the adjacent harbour waters. Stockpiles of cement and other construction materials should be kept covered when not being used.			
		Accidental Spillage			
		Oils and fuels should only be used and stored in designated areas which have pollution prevention facilities. To prevent spillage of fuels and solvents to the nearby harbour waters, all fuel tanks and storage areas should be provided with locks and be sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour WCZ. The bund should be drained of rainwater after a rain event.	Contractor	All relevant worksites	Implemented
		Waste Management Measures			
		Waste Management Plan			
AEIAR-174/2013 S11.4.8.1	AEIAR-174/2013 EM&A Manual S9.2.1.2	Contractor should be requested to submit an outline Waste Management Plan (WMP) prior to the commencement of construction work, in accordance with the ETWB TC(W) No.19/2005 so as to provide an overall framework of waste management and reduction.	Contractor	All relevant worksites	Implemented
		Good Site Practices			
AEIAR-130/2009 S3.5, S5.5	AEIAR 130/2009 EM&A Manual S2.5, S4.5	Nomination of an approved person, such as a 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.	Contractor	All relevant worksites	Implemented
		Training of site personnel in proper waste management and chemical waste handling procedures.	Contractor	All relevant worksites	Implemented
		Provision of sufficient waste disposal points and regular collection for disposal.	Contractor	All relevant worksites	Implemented
		Appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers.	Contractor	All relevant worksites	Implemented

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EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
		A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites).	Contractor	All relevant worksites	Implemented
		Waste Reduction Measures			
		Sort C&D waste from demolition of the remaining structures to recover recyclable portions such as metals.	Contractor	All relevant worksites	Implemented
		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.	Contractor	All relevant worksites	Implemented
		Encourage collection of aluminum cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force.	Contractor	All relevant worksites	Implemented
		Any unused chemicals or those with remaining functional capacity should be recycled.	Contractor	All relevant worksites	Implemented
		Proper storage and site practices to minimize the potential for damage or contamination of construction materials.	Contractor	All relevant worksites	Implemented
		Construction and Demolition Materials			
		Where it is unavoidable to have transient stockpiles of C&D material within the work site pending collection for disposal, the transient stockpiles shall be located away from waterfront or storm drains as far as possible.	Contractor	All relevant worksites	Implemented
		Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric.	Contractor	All relevant worksites	Implemented
		Skip hoist for material transport should be totally enclosed by impervious sheeting.	Contractor	All relevant worksites	Implemented

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		Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving a construction site.	Contractor	All relevant worksites	Implemented
		The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.	Contractor	All relevant worksites	Implemented
		The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure dust materials do not leak from the vehicle.	Contractor	All relevant worksites	Implemented
		All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet.	Contractor	All relevant worksites	Implemented
		The height from which excavated materials are dropped should be controlled to a minimum practical height to limit fugitive dust generation from unloading.	Contractor	All relevant worksites	Implemented
		When delivering inert C&D material to public fill reception facilities, the material should consist entirely of inert construction waste and of size less than 250mm or other sizes as agreed with the Secretary of the Public Fill Committee. In order to monitor the disposal of the surplus C&D material at the designed public fill reception facility and to control fly tipping, a trip-ticket system as stipulated in the ETWB TCW No. 31/2004 "Trip Ticket System for Disposal of Construction and Demolition Materials" should be included as one of the contractual requirements and implemented by an Environmental Team undertaking the Environmental Monitoring and Audit work. An Independent Environmental Checker should be responsible for auditing the results of the system.	Contractor	All relevant worksites	Implemented
		Chemical Waste			
		After use, chemical wastes (for example, 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 collected by a licensed collector for disposal at the CWTF or other licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	Contractor	All relevant worksites	Implemented

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EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
		General Refuse			
		General refuse should be stored in enclosed bins or compaction units separate from C&D material. A licensed waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material. Effective collection and storage methods (including enclosed and covered area) of site wastes would be required to prevent waste materials from being blown around by wind, wastewater discharge by flushing or leaching into the marine environment, or creating odour nuisance or pest and vermin problem.	Contractor	All relevant worksites	Implemented
Land Contamination	on Measures				
		For any excavation works conducted at Radar Station			
		As the risk due to dermal contact with groundwater by site workers is uncertain, it is recommended that personnel protective equipment (PPE) be used by site workers as a mitigation measure.	Contractor	All relevant worksites	Not Applicable
Landscape and Vis	sual Impact				
		New Distributor Roads Serving the Planned KTD			
		Construction Phase			
		All existing trees should be carefully protected during construction.	Contractor	All relevant worksites	Not Applicable
		Trees unavoidably affected by the works should be transplanted where practical. Detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBC 2/2004 and 3/2006. Final locations of transplanted trees should be agreed prior to commencement of the work.	Contractor	All relevant worksites	Not Applicable
		Control of night-time lighting.	Contractor	All relevant worksites	Not Applicable

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EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures		Location / Timing	Construction Phase Implementation Status
		Erection of decorative screen hoarding.	Contractor	All relevant worksites	Implemented
		Trunk Road T2			
		Construction Phase			
AEIAR-174/2013 S9.9.1.1	AEIAR-174/2013 EM&A Manual S7.2.1.2	All works shall be carefully designed to minimize impacts on existing landscape resources and visually sensitive receivers. Existing trees within works area shall be retained and protected.	Contractor	All relevant worksites	Not Applicable
	<i>31.2.1.2</i>	Existing trees of good quality and condition that are unavoidably affected by the works should be transplanted.	Contractor	All relevant worksites	Not Applicable
		Large temporary stockpiles of excavated material shall be covered with unobtrusive sheeting to prevent dust and dirt spreading to adjacent landscape areas and vegetation, and to create a neat and tidy visual appearance.	Contractor	All relevant worksites	Implemented
		Construction plant and building material shall be orderly and carefully stored in order to create a neat and tidy visual appearance.	Contractor	All relevant worksites	Implemented
		Erection of decorative screen hoarding should be designed to be compatible with the existing urban context.	Contractor	All relevant worksites	Implemented
		All lighting in construction site shall be carefully controlled to minimize light pollution and night- time glare to nearby residences and GIC user. The contractor shall consider other security measures, which shall minimize the visual impacts.	Contractor	All relevant worksites	Not Applicable
General Condition		·			
		The Permit Holder shall display conspicuously a copy of this Permit on the Project site(s) at all vehicular site entrances/exits or at a convenient location for public's information at all times. The Permit Holder shall ensure that the most updated information about the Permit, including any amended Permit, is displayed at such locations. If the Permit Holder surrenders a part or the whole of the Permit, the notice he sends to the Director shall also be displayed at the same	Contractor	All relevant worksites	Implemented

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EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
		locations as the original Permit. The suspended, varied or cancelled Permit shall be removed from display at the Project site(s).			

Implementation status: Implemented / Partially Implemented / Not Implemented / Not Applicable

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Appendix K

Weather and Meteorological Conditions during Reporting Month

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	Mean		Air Temperature	9	Mean Relative	Total
Date	Pressure (hPa)	Maximum (deg. C)	Mean (deg. C)	Minimum (deg. C)	Humidity (%)	Rainfall (mm)
	-	-	June 2019	-	-	
1	1007.5	30.6	27.2	24.9	85	32.6
2	1007.2	31.2	27.2	25.4	81	3
3	1007.3	30.2	27.5	25.3	83	34.1
4	1008.6	31.1	28.0	25.9	84	38.1
5	1009.5	32.6	29.4	27.4	78	0
6	1010.4	33.0	30.2	28.5	76	Trace
7	1010.4	33.2	30.1	28.6	72	0
8	1008.5	32.4	30.1	28.2	76	1.1
9	1005.4	32.3	30.1	28.4	82	4.1
10	1003.5	31.7	29.5	25.8	86	3.3
11	1004.4	29.4	27.5	24.6	90	111.6
12	1005.3	29.6	27.5	26.5	89	1.5
13	1003.0	30.7	27.7	25.5	90	55.8
14	1002.4	31.6	28.4	25.4	58	16.5
15	1005.3	31.4	28.6	26.4	42	Trace
16	1006.5	30.1	27.9	26.8	77	0
17	1007.3	28.7	27.6	26.8	87	4.7
18	1008.1	30.0	28.6	27.5	82	11.1
19	1007.8	31.7	28.9	26.5	84	14
20	1006.9	32.5	30.1	28.2	66	0.5
21	1005.9	32.8	30.8	29.5	79	0.7
22	1004.7	33.0	30.7	28.7	81	0.7
23	1004.8	32.2	30.3	29.1	84	3.2
24	1006.2	30.6	29.1	24.7	88	16.8
25	1006.7	29.7	27.2	24.8	88	35.4
26	1004.0	31.4	28.6	26.1	78	0.9
27	1001.7	32.5	30.2	28.3	78	3.5
28	1001.7	32.7	30.5	29.3	77	2.2
29	1001.6	33.3	31.0	29.5	72	0.6
30	1001.6	33.0	29.5	26.9	74	33.1

Source: Hong Kong Observatory

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Appendix L

Cumulative statistics on Environmental Complaints, Notifications of Summons and Successful Prosecution

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Profit Industrial Building, 1-15 Kwai Fung Crescent, Kwai Fong, Hong Kong.

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Environmental Complaints Log

Reference No.	Date of Complaint Received	Received From	Received By	Nature of Complaint	Date of Investigation	Outcome	Date of Reply
20161207_complaint_c	7 Dec 2016	EPD	Andy Choy (CRBC)	Air	13 Feb 2017	Project- related	13 Feb 2017
20170209_complaint_c	9 Feb 2017	EPD	Andy Choy (CRBC)	Air	22 Feb2017	Not Project- related	7 Mar 2017
20170502_complaint_c	2 May 2017	CEDD	Andy Choy (CRBC)	Noise	4 May 2017	Not Valid	22 May 2017
20170716_complaint_a	16 July 2017	CEDD	HMJV	Water Quality	4 Aug 2017	Not Project- related	4 Aug 2017
20180530_complaint	30 May 2018	EPD	CRBC	Air	9 June 2018	Not Valid	20 June 2018

Cumulative Statistics on Complaints

Environmental Parameters	Cumulative No. Brought Forward	No. of Complaints This Month	Cumulative Project- to-Date
Air	3	0	3
Noise	1	0	1
Water	1	0	1
Waste	0	0	0
Total	0	0	0

Cumulative Statistics on Notification of Summons and Successful Prosecutions

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

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Appendix M

Summary of Site Audit in the Reporting Month

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Summary of Site Audit in the Reporting Month

Parameters	Date	Observations and Recommendations	Follow-up			
Air Quality	NA					
Noise		NA				
Water Quality		NA				
Chemical and Waste Management	26 June 2019	All waste generated at the site should be cleared regularly. (Zone 2)	NA			
Land Contamination		NA				
Landscape and Visual Impact	NA					
General Condition		NA				

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Appendix N

Outstanding Issues and Deficiencies



Summary of Outstanding Issues and Deficiencies in the Reporting Month

Parameters	Outstanding Issues	Deficiencies
Air Quality	NA	
Noise	NA	
Water Quality	NA	
Chemical and Waste Management	NA	Any items of deficiencies can be referred to Appendix M .
Land Contamination	NA	
Landscape and Visual Impact	NA	
General Condition	NA	
Others	NA	

FUGRO TECHNICAL SERVICES LIMITED

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Appendix D

Monthly EM&A Report For Contract No. KL/2015/02 Kai Tak Development - Stage 5A Infrastructure at Former North Apron Area

Civil Engineering and Development Department

EP-337/2009 – New Distributor Roads Serving the Planned KTD

Contract No. KLN/2016/04 Environmental Monitoring Works for Contract No. KL/2015/02 Kai Tak Development – Stage 5A Infrastructure at Former North Apron Area

Monthly EM&A Report

June 2019

(version 1.1)

Approved By	
	(Environmental Team Leader)

REMARKS:

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

CINOTECH accepts no responsibility for changes made to this report by third parties

CINOTECH CONSULTANTS LTD

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 Date
 11 July 2019

 Our Ref.
 MCL/ED/0332/2019/C

Cinotech Consultants Limited Rm 1710, Technology Park, 18 On Lai Street, Shatin, New Territories, Hong Kong

BY EMAIL

Attn.: Mr. K.S Lee

Dear Sir,

Contract No. KL/2015/02 Kai Tak Development –Stage 5A Infrastructure at Former North Apron Verification of Monthly EM&A Report for June 2019

We refer to your emails dated 8 and 10 July 2019 regarding the Monthly EM&A Report for June 2019 for the captioned project prepared by the ET.

We have no further comment and hereby verify the Report in accordance with Clause 3.3 of Environmental Permit no. EP-337/2009.

Should you require further information, please do not hesitate to contact Mr. Wingo So at 3565 4374 or the undersigned on 3565 4114.

Assuring you of our best attention at all times.

Yours faithfully, For and on behalf of FUGRO TECHNICAL SERVICES LIMITED

Colin K. L. Yung Independent Environmental Checker

CY/ws

c.c. CEDD -

AECOM –

Attn.: Mr. Ricky Chan Attn.: Mr. Jeremy Yuen Attn.: Mr. Vincent Lee Attn.: Mr. Teddy Shih



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EXECUTIVE SUMMARY

Introduction

- 1. This is the 30th Monthly Environmental Monitoring and Audit Report prepared by Cinotech Consultants Ltd. for "Contract No. KL/2015/02 Kai Tak Development Stage 5A Infrastructure at Former North Apron Area" (Hereafter referred to as "the Project"). This contract comprises one Schedule 2 designated project (DP), namely the new distributor road D1 serving the planned KTD. The DP is part of the designated project under Environmental Permit (EP) No.: EP-337/2009 ("New distributor roads serving the planned Kai Tak Development") respectively. This report documents the findings of EM&A Works conducted during June 2019.
- 2. With reference to the same principle of EIA report of the Project, air quality monitoring stations within 500m and noise monitoring stations within 300m from the boundary of this Project are considered as relevant monitoring locations. In such regard, the relevant air quality and noise monitoring locations are tabulated in **Table I** (see **Figure 2 and 3** for their locations).

Locations	Monitoring Stations In accordance with EM&A Manual	Alternative Monitoring Stations	
Air Quality Monitoring Stations			
	Yes (1-hour TSP)	N/A	
AM2 - Lee Kau Yan Memorial School	No (24-hour TSP)	AM2(A) – Ng Wah Catholic Secondary School	
Noise Monitoring Stations			
M3 - Cognitio College	Yes	N/A	
M4 - Lee Kau Yan Memorial School	Yes	N/A	
M5 – Nam Yuen	No	M5(C) – Mercy Grace's Home	

Table I – Air Quality and Noise Monitoring Stations for this Project

- 3. The major site activities undertaken in the reporting month included:
- Road reinstatement works at PERE W/B and implement stage 2 TTA at PERE E/B;
- Excavation works with ELS installation and footing works for traffic deck (stage 4-1) at SKLR playground;
- Structural works for subway construction (Bay 6);
- Structural works for cantilever beam of Pier S15C4;
- Drainage works at Retaining Wall S15;
- Preparation works for demolition of bridge K72;
- Construction of chain-link fence for land sale sites;

- DCS & Watermains works in Portion 1 Road D1;
- Watermains works in Portion 6; and
- Drainage and sewerage works in Road L7.

Environmental Monitoring Works

- 4. Environmental monitoring for the Project was performed in accordance with the EM&A Manual and the monitoring results were checked and reviewed. Site Inspections/Audits were conducted once per week. The implementation of the environmental mitigation measures, Event Action Plans and environmental complaint handling procedures were also checked.
- 5. Summary of the non-compliance in the reporting month for the Project is tabulated in **Table II**.

	No. of Project-rel	ated Exceedance	
Parameter	Action Level	Limit Level	Action Taken
1-hr TSP	0	0	N/A
24-hr TSP	0	0	N/A
Noise	0	0	N/A

 Table II
 Non-compliance Recorded for the Project in the Reporting Month

1-hour & 24-hour TSP Monitoring

- 6. All 1-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.
- 7. All 24-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

Construction Noise Monitoring

8. All construction noise monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

Environmental Licenses and Permits

- 9. Licenses/Permits granted to the Project include the Environmental Permit (EP) for the Project, EP-337/2009 issued on 23 April 2009. All valid Licenses/Permits for this Project are shown in **Table 6.1**.
- Billing Account for Construction Waste Disposal (A/C# 7026164).
- Effluent Discharge License (WT00027495-2017).
- Registration of Chemical Waste Producer (WPN5213-286-P3271-01).

Key Information in the Reporting Month

10. Summary of key information in the reporting month is tabulated in **Table III**.

Table III Summary Table for Key Information in the Reporting Month
--

Event	Event	Details	Action Taken	Status N/A N/A N/A	Remark
Event	Number	Nature	Action Taken		
Complaint received			N/A	N/A	
Reporting Changes			N/A	N/A	
Notifications of any summons & prosecutions received			N/A	N/A	

Future Key Issues

- 11. The future key environmental issues in the coming month include:
- Dust generation from stockpiles of dusty materials, exposed site area, excavation works and rock breaking activities;
- Water spraying for dust generating activity and on haul road;
- Proper storage of construction materials on site;
- Storage of chemicals/fuel and chemical waste/waste oil on site;
- Accumulation of general and construction waste on site;
- Noise from operation of the equipment, especially for rock-breaking activities, piling works and machinery on-site;
- Wastewater and runoff discharge from site;
- Regular removal of silt, mud and sand along u-channels and sedimentation tanks; and
- Review and implementation of temporary drainage system for the surface runoff.

1 INTRODUCTION

Background

- 1.1. The Kai Tak Development (KTD) is located in the south-eastern part of Kowloon Peninsula, comprising the apron and runway areas of the former Kai Tak Airport and existing waterfront areas at To Kwa Wan, Ma Tau Kok, Kowloon Bay, Kwun Tong and Cha Kwo Ling. It covers a land area of about 328 hectares. Stage 5A Infrastructure at Former North Apron Area is one of the construction stages of KTD. It contains one Schedule 2 DP including new distributor roads serving the planned KTD. The general layout of the Project is shown in **Figure 1**.
- 1.2. An Environmental Permit (EP) No. EP-337/2009 was issued on 23 April 2009 for new distributor roads serving the planned KTD to Civil Engineering and Development Department as the Permit Holder.
- 1.3. A study of environmental impact assessment (EIA) was undertaken to consider the key issues of air quality, noise, water quality, waste, land contamination, cultural heritage and landscape and visual impact, and identify possible mitigation measures associated with the works. An EIA Report (Register No. AEIAR-130/2009) was approved by the Environmental Protection Department (EPD) on 4 April 2009.
- 1.4. Cinotech Consultants Limited (Cinotech) was commissioned by Civil Engineering and Development Department (CEDD) to undertake the role of the Environmental Team (ET) for the Contract No. KL/2015/02 – Stage 5A Infrastructure at Former North Apron Area. The construction work under KL/2015/02 comprises the construction of part of the Road D1 under the EP (EP-337/2009).
- 1.5. Cinotech Consultants Limited was commissioned by Civil Engineering and Development Department (CEDD) to undertake the Environmental Monitoring and Audit (EM&A) works for the Project. The commencement date of construction of Road D1 (part) under this Contract was on 16 January 2017.

Project Organizations

- 1.6. Different parties with different levels of involvement in the project organization include:
 - Project Proponent Civil Engineering and Development Department (CEDD).
 - The Engineer and the Engineer's Representative (ER) AECOM Asia Co. Ltd (AECOM).
 - Environmental Team (ET) Cinotech Consultants Limited (Cinotech).
 - Independent Environmental Checker (IEC) Fugro Technical Services Limited (FTS).
 - Contractor Peako Wo Hing Joint Venture (PWHJV).

1.7. The key contacts of the Project are shown in **Table 1.1**.

able 1.1 Key Project Contacts					
Party Role		Contact Person	Position	Phone No.	Fax No.
CEDD	Project Proponent	Mr. CHAN Wai Kit, Ricky	Senior Engineer	2116 3753	2116 0714
AECOM	Engineer's Representative	Mr. Vincent Lee	SRE	2798 0771	2210 6110
Cinotech	Environmental	Mr. K.S Lee Environmental Team Leader	Environmental Team Leader	2151 2091	3107 1388
emoteen	Team	Ms. Betty Choy	Audit Team Leader	2151 2072	5107 1500
FTS	Independent Environmental Checker	Mr. Colin Yung	Independent Environmental Checker	3565 4114	2450 8032
PWHJV	Contractor	Mr. W.M. Wong	Site Agent	6386 3535	2398 8301

Table 1.1Key Project Contacts

Construction Activities undertaken during the Reporting Month

- 1.8. The site activities undertaken in the reporting month included:
 - Road reinstatement works at PERE W/B and implement stage 2 TTA at PERE E/B;
 - Excavation works with ELS installation and footing works for traffic deck (stage 4-1) at SKLR playground;
 - Structural works for subway construction (Bay 6);
 - Structural works for cantilever beam of Pier S15C4;
 - Drainage works at Retaining Wall S15;
 - Preparation works for demolition of bridge K72;
 - Construction of chain-link fence for land sale sites;
 - DCS & Watermains works in Portion 1 Road D1;
 - Watermains works in Portion 6; and
 - Drainage and sewerage works in Road L7.
- 1.9. The construction programme for the Project is shown in **Appendix N**.
- 1.10. The construction programme showing the inter-relationship with environmental protection/mitigation measures are presented in **Table 1.2**.

Table 1.2Construction Programme Showing the Inter-Relationship with
Environmental Protection/Mitigation Measures

Construction Works	Major Environmental Impact	Control Measures
Refer to Section 1.8	Noise, dust impact, water quality and waste generation	 Sufficient watering of the works site with active dust emitting activities; Properly cover the stockpiles; On-site waste sorting and implementation of trip ticket system Appropriate desilting/sedimentation devices provided on site for treatment before discharge; Use of quiet plant and well-maintained construction plant; Provide movable noise barrier; Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall; Provide sufficient mitigation measures as recommended in Approved EIA Report/Lease requirement.

Summary of EM&A Requirements

- 1.11. The EM&A programme requires construction noise monitoring, air quality monitoring, landscape and visual monitoring and environmental site audit. The EM&A requirements for each parameter are described in the following sections, including:
 - All monitoring parameters;
 - Action and Limit levels for all environmental parameters;
 - Event Action Plans;
 - Environmental requirements and mitigation measures, as recommended in the EM&A Manual under the EP.
- 1.12. The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in Section 6 of this report.
- 1.13. This report presents the monitoring results, observations, locations, equipment, period, methodology and QA/QC procedures of the required monitoring parameters, namely air quality and noise levels and audit works for the Project during June 2019.

2 AIR QUALITY

Monitoring Requirements

2.1. According to EM&A Manual under the EP, 1-hour and 24-hour TSP monitoring were conducted to monitor the air quality for this Project. For regular impact monitoring, a sampling frequency of at least once in every six days at all of the monitoring stations for 24-hour TSP monitoring. For 1-hour TSP monitoring, the sampling frequency of at least three times in every six days shall be undertaken when the highest dust impact occurs. Appendix A shows the established Action/Limit Levels for the environmental monitoring works.

Monitoring Locations

- 2.2. 1-hour TSP impact dust monitoring was conducted at the air quality monitoring station, AM2 - Lee Kau Yan Memorial School and 24-hour TSP impact dust monitoring were conducted at the air quality monitoring station, AM2(A) - Ng Wah Catholic Secondary School in the reporting month.
- 2.3. **Table 2.1** describes the air quality monitoring locations, which are also depicted in **Figure 2**.

Locations for An Quanty Monitoring			
Monitoring Stations	Locations	Location of Measurement	
AM2 (1-hour TSP)	Lee Kau Yan Memorial School	Rooftop (about 8/F) Area	
AM2(A)			

Ng Wah Catholic Secondary School

Table 2.1Locations for Air Quality Monitoring

Monitoring Equipment

(24-hour TSP)

2.4. **Table 2.2** summarizes the equipment used in the impact air monitoring programme. Copies of calibration certificates are attached in **Appendix B**.

Table 2.2 All Quality Monitoring Equipment			
Equipment	Model and Make	Quantity	
Calibrator	• TISCH TE-5025A	1	
1-hour TSP Dust Meter	 Hal Technology Hal-HPC300 / 301 Sibata Scientific Technology LD-3B / LD-5R 	4	
HVS Sampler	• TE-5170 c/w of TSP sampling inlet	1	
Wind Anemometer	• Davis Instruments 6152	1	

 Table 2.2
 Air Quality Monitoring Equipment

 $MA16043 \ Monthly \ Mrpt1906 v.1.1 190709. docx$

Rooftop (about 8/F) Area

Monitoring Parameters, Frequency and Duration

2.5. **Table 2.3** summarizes the monitoring parameters and frequencies of impact dust monitoring for the whole construction period. The air quality monitoring schedule for the reporting month is shown in **Appendix D**.

Table 2.3 Impact Dust Monitoring Parameters, Frequency and Duration

Parameters	Frequency	
1-hr TSP	Three times / 6 days	
24-hr TSP	Once / 6 days	

Monitoring Methodology and QA/QC Procedure

1-hour TSP Monitoring

Measuring Procedures

2.6. The measuring procedures of the 1-hour dust meters were in accordance with the Manufacturer's Instruction Manual as follows:

(Equipment: Hal Technology; Model no. Hal-HPC300, Hal-HPC301)

- The 1-hour dust meter is placed at least 1.3 meters above ground.
- Set POWER to "ON" and make sure that the battery level was not flash or in low level.
- Allow the instrument to stand for about 3 minutes and then the cap of the air sampling inlet has been released.
- Push the knob at MEASURE position.
- Set time/mode setting to [BG] by pushing the time setting switch. Then, start the background measurement by pushing the start/stop switch once. It will take 6 sec. to complete the background measurement.
- Push the time setting switch to change the time setting display to [MANUAL] at the bottom left of the liquid crystal display.
- Finally, push the start/stop switch to stop the measuring after 1 hour sampling.
- Information such as sampling date, time, count value and site condition were recorded during the monitoring period.

(Equipment: Sibata Scientific Technology; Model no. LD-3B, LD-5R)

- The 1-hour dust meter is placed at least 1.3 meters above ground.
- Set POWER to "ON" and make sure that the battery level was not flash or in low level.
- Allow the instrument to stand for about 3 minutes and then the cap of the air sampling inlet has been released.
- Push the knob at MEASURE position.
- Set time/mode setting to [BG] by pushing the time setting switch. Then, start the background measurement by pushing the start/stop switch once. It will take 6 sec. to complete the background measurement.
- Push the time setting switch to change the time setting display to [MANUAL] at the bottom left of the liquid crystal display.

- Finally, push the start/stop switch to stop the measuring after 1 hour sampling.
- Information such as sampling date, time, count value and site condition were recorded during the monitoring period.

Maintenance/Calibration

2.7. The following maintenance/calibration was required for the direct dust meters:

Check the meter at a 3-month interval and calibrate the meter at a 1-year interval throughout all stages of the air quality monitoring.

24-hour TSP Monitoring

Instrumentation

2.8. High volume (HVS) samplers (Model TE-5170), completed with appropriate sampling inlets, were employed for 24-hour TSP monitoring. The sampler was composed of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complied with that required by USEPA Standard Title 40, Code of Federation Regulations Chapter 1 (Part 50). Moreover, the HVS also met all the requirements in section 2.5 of the updated EM&A Manual.

Operating/Analytical Procedures

- 2.9. Operating/analytical procedures for the operation of HVS were as follows:
 - A horizontal platform was provided with appropriate support to secure the samplers against gusty wind.
 - No two samplers were placed less than 2 meters apart.
 - The distance between the sampler and an obstacle, such as buildings, was at least twice the height that the obstacle protrudes above the sampler.
 - A minimum of 2 meters of separation from walls, parapets and penthouses was required for rooftop samples.
 - A minimum of 2 meters separation from any supporting structure, measured horizontally was required.
 - No furnaces or incineration flues were nearby.
 - Airflow around the sampler was unrestricted.
 - The sampler was more than 20 meters from the drip line.
 - Any wire fence and gate, to protect the sampler, should not cause any obstruction during monitoring.
- 2.10. Prior to the commencement of the dust sampling, the flow rate of the high volume sampler was properly set (between 1.1 m3/min. and 1.4 m3/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50.
- 2.11. For TSP sampling, fiberglass filters have a collection efficiency of > 99% for particles of 0.3µm diameter were used.

- 2.12. The power supply was checked to ensure the sampler worked properly. On sampling, the sampler was operated for 5 minutes to establish thermal equilibrium before placing any filter media at the designated air monitoring station.
- 2.13. The filter holding frame was then removed by loosening the four nuts and a weighted and conditioned filter was carefully centered with the stamped number upwards, on a supporting screen.
- 2.14. The filter was aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter. Then the filter holding frame was tightened to the filter holder with swing bolts. The applied pressure should be sufficient to avoid air leakage at the edges.
- 2.15. The shelter lid was closed and secured with the aluminium strip.
- 2.16. The timer was then programmed. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number).
- 2.17. After sampling, the filter was removed and sent to the HOKLAS laboratory (Wellab Ltd.) for weighing. The elapsed time was also recorded.
- 2.18. Before weighing, all filters were equilibrated in a conditioning environment for 24 hours. The conditioning environment temperature should be between 25°C and 30°C and not vary by more than \pm 3°C; the relative humidity (RH) should be < 50% and not vary by more than \pm 5%. A convenient working RH is 40%.

Maintenance/Calibration

- 2.19. The following maintenance/calibration was required for the HVS:
 - The high volume motors and their accessories were properly maintained. Appropriate maintenance such as routine motor brushes replacement and electrical wiring checking were made to ensure that the equipment and necessary power supply are in good working condition.
 - High volume samplers were calibrated at bi-monthly intervals using TE-5025A Calibration Kit through/hout all stages of the air quality monitoring.

Results and Observations

- 2.20. All 1-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.
- 2.21. All 24-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.
- 2.22. The weather information for the reporting month is summarized in Appendix C.
- 2.23. The monitoring data and graphical presentations of 1-hour and 24-hour TSP monitoring results are shown in **Appendices E and F** respectively.

- 2.24. The summary of exceedance record in reporting month is shown in **Appendix H**. No exceedance was recorded for the air quality monitoring.
- 2.25. According to our field observations during the monitoring, the major dust source identified at the two designated air quality monitoring stations are road traffic dust, exposed site area and open stockpiles, excavation works and site vehicle movements.
- 2.26. The summary of 1-hour and 24-hour TSP air quality monitoring results during the reporting month are shown in **Appendix E** and **Appendix F** respectively.

3 NOISE

Monitoring Requirements

3.1. According to EM&A Manuals under the EP, construction noise monitoring was conducted to monitor the construction noise arising from the construction activities within KTD. The regular monitoring frequency for each monitoring station shall be on a weekly basis and conduct one set of measurements between 0700 and 1900 hours on normal weekdays. **Appendix A** shows the established Action and Limit Levels for the environmental monitoring works.

Monitoring Locations

3.2. Three designated monitoring stations were selected for noise monitoring programme. Noise monitoring was conducted at three designated monitoring stations (M3, M4, and M5(C)). **Figure 3** shows the locations of these stations.

Monitoring Stations	Locations	Location of Measurement
M3	Cognitio College	Rooftop (about 6/F) Area
M4	Lee Kau Yan Memorial School	Rooftop (about 7/F) Area
M5(C)	Mercy Grace's Home	Rooftop (about 5/F) Area

Table 3.1Noise Monitoring Stations

Monitoring Equipment

3.3. **Table 3.2** summarizes the noise monitoring equipment. Copies of calibration certificates are provided in **Appendix B**.

Table 3.2Noise Monitoring Equipment

Equipment	Model and Make	Qty.
Integrating Sound Level Meter	• SVANTEK SVAN 957 / 959 / 979	4
Calibrator	SVANTEK SV30ABrüel & Kjær 4231	2

Monitoring Parameters, Frequency and Duration

3.4. **Table 3.3** summarizes the monitoring parameters, frequency and total duration of monitoring. The noise monitoring schedule is shown in **Appendix D**.

Monitoring Stations	Parameter	Period	Frequency	Measurement
M3 M4 M5(C)	L ₁₀ (30 min.) dB(A) L ₉₀ (30 min.) dB(A) L _{eq} (30 min.) dB(A)	0700-1900 hrs on normal weekdays	Once per week	Façade

Monitoring Methodology and QA/QC Procedures

- The Sound Level Meter was set on a tripod at a height of 1.2 m above the ground.
- The battery condition was checked to ensure the correct functioning of the meter.
- Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
 - frequency weighting : A
 - time weighting : Fast
 - _ time measurement : 30 minutes
- Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after measurement was more than 1.0 dB, the measurement would be considered invalid and repeat of noise measurement would be required after re-calibration or repair of the equipment.
- The wind speed was frequently checked with the portable wind meter.
- At the end of the monitoring period, the L_{eq} , L_{90} and L_{10} were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.
- Noise measurement was paused temporarily during periods of high intrusive noise if possible and observation was recorded when intrusive noise was not avoided.
- Noise monitoring was cancelled in the presence of fog, rain, and wind with a steady speed exceeding 5 m/s, or wind with gusts exceeding 10 m/s.

Maintenance and Calibration

- 3.5. The microphone head of the sound level meter and calibrator were cleaned with a soft cloth at quarterly intervals.
- 3.6. The sound level meter and calibrator were checked and calibrated at yearly intervals.
- 3.7. Immediately prior to and following each noise measurement the accuracy of the sound level meter shall be checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements may be accepted as valid only if the calibration levels from before and after the noise measurement agree to within 1.0 dB.

Results and Observations

- 3.8. All construction noise monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded. The summary of exceedance record in reporting month is shown in Appendix H.
- 3.9. The baseline noise level and the Noise Limit Level at each designated noise monitoring station are presented in **Table 3.5**.
- 3.10. Noise monitoring results and graphical presentations are shown in Appendix G.
- 3.11. The major noise source identified at the designated noise monitoring stations are shown in **Table 3.4**.

Table 3.4	Major Noise Source identified at the Designated Noise Monitoring Stations	
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Monitoring Stations	Locations	Major Noise Source
M3	Cognitio College	Traffic Noise Daily school activities
M4	Lee Kau Yan Memorial School	Traffic Noise Site vehicle movement Excavation works Piling works Daily school activities
M5(C) Mercy Grace's Home		Traffic Noise Site vehicle movement

Table 3.5 Baseline Noise Level and Noise Limit Level for Monitoring Station

Station	Baseline Noise Level, dB (A)	Noise Limit Level, dB (A)
M3	N/A ⁽¹⁾ (at 0700 – 1900 hrs on normal weekdays)	70* (at 0700 – 1900 hrs on
M4	76.7 (at 0700 – 1900 hrs on normal weekdays)	normal weekdays)
M5(C)	$\frac{N/A^{(1)}}{(at\ 0700 - 1900\ hrs\ on\ normal weekdays)}$	75 (at 0700 – 1900 hrs on normal weekdays)

(*) Noise Limit Level is 65 dB(A) during school examination periods.

Note (1): The background Noise Level was recorded during the Lunch Hour of Construction Site

(i.e. 12:00-13:00) and to be used as the referencing value for compliance checking for Noise Action and Limit Level. Note (2): The noise level due to the construction work (CNL) was calculated by the following formula: $CNL = 10 \log (10^{MNL/10} - 10^{BNL/10})$

Remarks: MNL = Measured Noise Level, BNL = Baseline Noise Level

4 COMPARISON OF EM&A RESULTS WITH EIA PREDICTIONS

4.1. The EM&A data was compared with the EIA predictions as summarized in Tables 4.1 to 4.3.

	Predicted 1-l	nr TSP conc.	Measured 1-hr TSP conc.	
Station	Scenario1 (Mid 2009 to Mid-	Scenario2 (Mid 2013 to Late	Reporting Month (June 2019), μg/m ³	
	2013), μg/m ³	2016), μg/m ³	Average	Range
AM2 – Lee Kau Yan Memorial School	290	312	92	72 – 116

Table 4.1 Comparison of 1-hr TSP data with EIA predictions

Table 4.2	Comparison	of 24-hr TSP	data with EIA	predictions
I ant T .2	Comparison		uata with Lin	predictions

	Predicted 24-h	TSP conc.	Measured 24-hr TSP conc.	
Station	2009 to Mid-2013) (Mid 2013 to (June 20		ng Month 19), μg/m ³	
	μg/m ³	Late 2016), µg/m ³	Average	Range
AM2(A) – Ng Wah Catholic Secondary School	145	169	33	25 – 44

Table 4.3 Comparison of Noise Monitoring Data with EIA predictions

Stations	Predicted Mitigated Construction Noise Levels during Normal Working Hour (Leq (30min) dB(A))	Reporting Month (June 2019), L _{eq (30min)} dB(A)
M3 – Cognitio Colle	ege 47 – 75	$60 - 74^{(1)}$
M4 – Lee Kau Ya Memorial School	- 47 74	$71 - 76^{(1)}$
M5(C) – Mercy Grac Home	Not predicted in EIA Report	61 - 67

Remarks:

(1) Since the background noise level was higher than those recorded during the construction period, the recorded noise levels were considered non-valid exceedance of Noise Limit Level.

- 4.2. The average 1-hour TSP concentrations at AM2 in the reporting month were below the prediction in the approved Environmental Impact Assessment (EIA) Report.
- 4.3. The average 24-hour TSP concentrations at AM2(A) in the reporting month were below the prediction in the approved EIA Report.
- 4.4. The noise monitoring results in the reporting month from M3 was within the ranges of the predicted mitigated constriction noise levels in the EIA Report. The noise monitoring results in the reporting month from M4 was outside the ranges of the predicted mitigated constriction noise levels in the EIA Report.

4.5. Construction noise levels at M5(C) were not predicted in EIA Report.

5 LANDSCAPE AND VISUAL

Monitoring Requirements

5.1. According to EM&A Manual of the Kai Tak Development EIA Study, ET shall monitor and audit the contractor's operation during the construction period on a weekly basis, and to report on the contractor's compliance.

Results and Observations

- 5.2. Site audits were conducted on a weekly basis to monitor the timely implementation of landscape and visual mitigation measures within the site boundaries of this Project. The summaries of site audits are attached in **Appendix I**.
- 5.3. No non-compliance of the landscape and visual impact was recorded in the reporting month.
- 5.4. Should non-compliance of the landscape and visual impact occur, action in accordance with the action plan presented in **Appendix J** shall be performed.

6 ENVIRONMENTAL AUDIT

Site Audits

- 6.1. Site audits were carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site. The summaries of site audits are attached in **Appendix I**.
- 6.2. Site audits were conducted on 3, 12, 17 and 24 June 2019 in the reporting month. A joint site audit with the representative of IEC, ER, the Contractor and the ET was conducted on 12 June 2019. The details of the observations during site audit are summarized in **Table 6.2**.

Review of Environmental Monitoring Procedures

6.3. The monitoring works conducted by the monitoring team were inspected regularly. The following observations have been recorded for the monitoring works:

Air Quality Monitoring

- The monitoring team recorded all observations around the monitoring stations within and outside the construction site.
- The monitoring team recorded the temperature and weather conditions on the monitoring days.

Noise Monitoring

- The monitoring team recorded all observations around the monitoring stations, which might affect the monitoring result.
- Major noise sources were identified and recorded. Other intrusive noise attributing to the result was trimmed off by pausing the monitoring temporarily.

Status of Environmental Licensing and Permitting

6.4. All permits/licenses obtained for the Project are summarized in **Table 6.1**.

	Valid Period		<u><u> </u></u>			
Permit No.	From	То	Status			
Environmental Permit (EP)						
EP-337/2009	23/04/09	N/A	Valid			
Effluent Discharge License						
WT00027495-2017	28/03/17	31/03/22	Valid			
Billing Account for Construction Waste Disposal						

D	Valid P	<u></u>			
Permit No.	From	То	Status		
A/C# 7026164	20/10/16	N/A	Valid		
Registration of Chemical Waste Producer					
WPN5213-229-P3271-01	14/08/17	N/A	Valid		
Construction Noise Permit (CNP)					
-	-	-	-		

Status of Waste Management

6.5. The amount of wastes generated by the major site activities of this Project during the reporting month is shown in **Appendix M**.

Implementation Status of Environmental Mitigation Measures

6.6. During site inspections in the reporting month, no non-conformance was identified. ET weekly site inspections were carried out during the reporting month and the observations and recommendations are summarized in **Table 6.2**.

Parameters	Ref No.	Date	Observations and Recommendations	Follow-up/Rectification
Water Quality	190603/- R2	3 rd Jun 2019	- Contactor should cover the construction materials to avoid water accumulation in portion 6.	<u>12th Jun 2019</u> : The construction materials were covered in portion 6.
	190624/- R4	24 th Jun 2019	- Water pond formed in Portion 6.	
Air Quality	190527- R1	27 th May 2019	- Contractor should show the NRRM label on the excavator in Road D1.	3rd Jun 2019:The concerned excavator islocated in pedestrianprohibit area, therefore theNRRM issue will befollow-up in the next siteinspection.12 th Jun 2019:The NRMM label wasshown on the concernedexcavator in Road D1.
	190527/- R2	27 th May 2019	 Contractor should cover the dusty materials in portion L7. 	<u>3rd Jun 2019</u> : The dusty materials were covered with impervious dust screen in Portion L7.

Table 6.2 Observations and Recommendations of Site Inspections

Parameters	Ref No.	Date	Observations and Recommendations	Follow-up/Rectification
	190624/- R1	24 th Jun 2019	 Contractor should shows the NRMM label on the excavator in Load D1 and the mobile crane in Portion 1. 	
	190624/- R3	24 th Jun 2019	 Contractor should cover the dusty materials in Portion 6. 	
Noise	N/A	N/A		
Waste/ Chemical Management	190603/- R1	3 rd Jun 2019	 Contractor should clean up the liquid in the drip tray under the generator in S- Future. Contractor should cover the chemical containers and also clean up the liquid in the drip tray under the chemical containers in portion 1. 	12th Jun 2019:The liquid in drip trayunder the generator wascleaned up in S-Future.The liquid in drip trayunder the generator wascleaned up in S-Future.17th Jun 2019:The chemical containerswith the drip tray wasremoved from the portion1.
	190624/- R2	24 th Jun 2019	 Contractor should clean up the general wastes or food wastes in Load D1. 	
Landscape and Visual	N/A	N/A		
Permits/ Licenses	N/A	N/A		

Summary of Mitigation Measures Implemented

6.7. An updated summary of the EMIS is provided in **Appendix K**.

Implementation Status of Event Action Plans

6.8. The Event Action Plans for air quality, noise and landscape and visual are presented in **Appendix J**.

<u>1-hr TSP Monitoring</u>

6.9. No Action/Limit Level exceedance was recorded in the reporting month.

24-hr TSP Monitoring

6.1 No Action/Limit Level exceedance was recorded in the reporting month.

Construction Noise

6.10. No Action/Limit Level exceedance was recorded in the reporting month.

Landscape and visual

6.11. No non-compliance was recorded in the reporting month.

Summary of Complaint, Warning, Notification of any Summons and Successful Prosecution

6.12. The summaries of environmental complaint, warning, summon and notification of successful prosecution for the Project is presented in **Appendix L**.

7 FUTURE KEY ISSUES

- 7.1. Major site activities undertaken for the coming two months include:
 - Jacking up the existing bridge K72 and demolish the exiting wall;
 - Excavation works with ELS installation and construction of traffic deck (stage 4-1) at SKLR playground;
 - Structural works for subway construction (Bay 6);
 - Trail pit excavation and sheet piling works for subway construction at PERE (Stage 2);
 - Drainage works and construction of parapet at Retaining Wall S15;
 - Demolition of existing structure of bridge K72;
 - Drainage works at Road D1;
 - DCS & Watermains works in Portion 1 Road D1;
 - Watermains works in Portion 6; and
 - Watermains works in Road L7.

7.2. Key environmental issues in the coming month include:

- Wastewater and runoff discharge from site;
- Regular removal of silt, mud and sand along u-channels and sedimentation tanks;
- Review and implementation of temporary drainage system for the surface runoff;
- Noise from operation of the equipment, especially for rock-breaking activities, piling works and machinery on-site;
- Dust generation from stockpiles of dusty materials, exposed site area, excavation works and rock breaking activities;
- Water spraying for dust generating activity and on haul road;
- Proper storage of construction materials on site;
- Storage of chemicals/fuel and chemical waste/waste oil on site; and
- Accumulation of general and construction waste on site.
- 7.3. The tentative major site activities is mentioned in Section 7.1 of this report. The impact prediction and control measures for the coming two months are summarized as follows:
 - Air quality impact (dust)
 - Frequent watering of haul road and unpaved/exposed areas;
 - Frequent watering or covering stockpiles with tarpaulin or similar means; and
 - Watering of any earth moving activities.

Water quality impact (surface run-off)

• Diversion of the collected effluent to de-silting facilities for treatment prior to discharge to public storm water drains;

- Provision of adequate de-silting facilities for treating surface run-off and other collected effluents prior to discharge;
- Provision of perimeter protection such as sealing of hoarding footings to avoid run-off from entering the existing storm water drainage system via public road; and
- Provision of measures to prevent discharge into the stream.

Noise Impact

- Scheduling of noisy construction activities if necessary to avoid persistent noisy operation;
- Controlling the number of plants use on site;
- Regular maintenance of machines; and
- Use of acoustic barriers if necessary.

Monitoring Schedule for Next Month

7.4. The tentative environmental monitoring schedules for next month are shown in **Appendix D**.

8 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

8.1. Environmental monitoring works were performed in the reporting month and all monitoring results were checked and reviewed.

1-hr TSP Monitoring

8.2. All 1-hr TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

24-hr TSP Monitoring

8.3. All 24-hr TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

Construction Noise Monitoring

8.4. All construction noise monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

Landscape and visual

8.1 No non-compliance was recorded in the reporting month.

Complaint and Prosecution

8.2 No environmental complaint and environmental prosecution was received in the reporting month.

Recommendations

8.3 According to the environmental audit performed in the reporting month, the following recommendations were made:

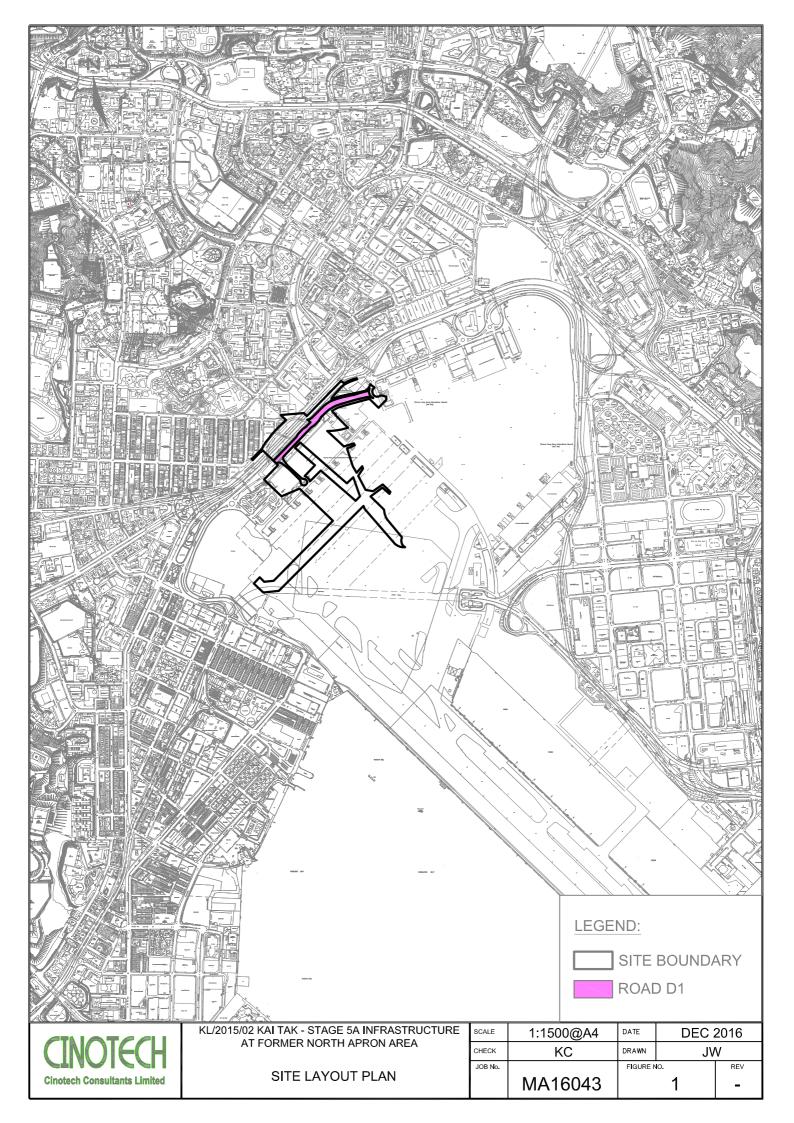
Waste / Chemical Management

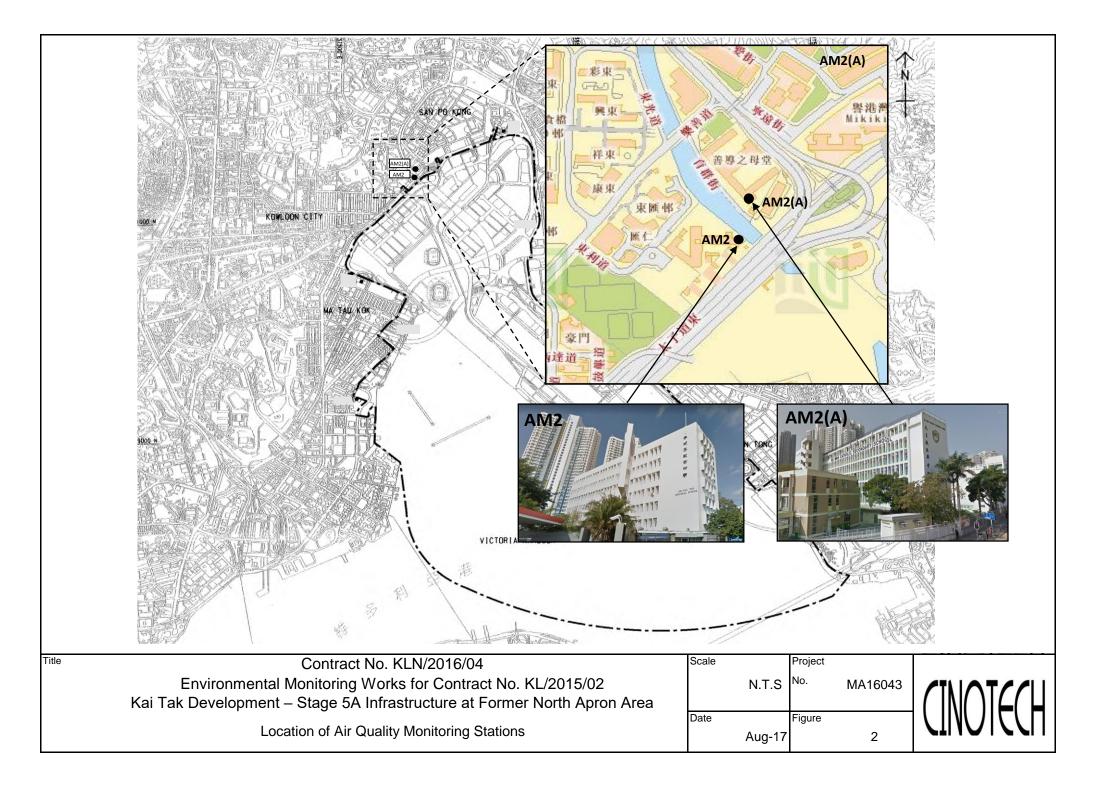
• The Contractor is suggested to review the liquid status of drip tray and cleaned up frequently.

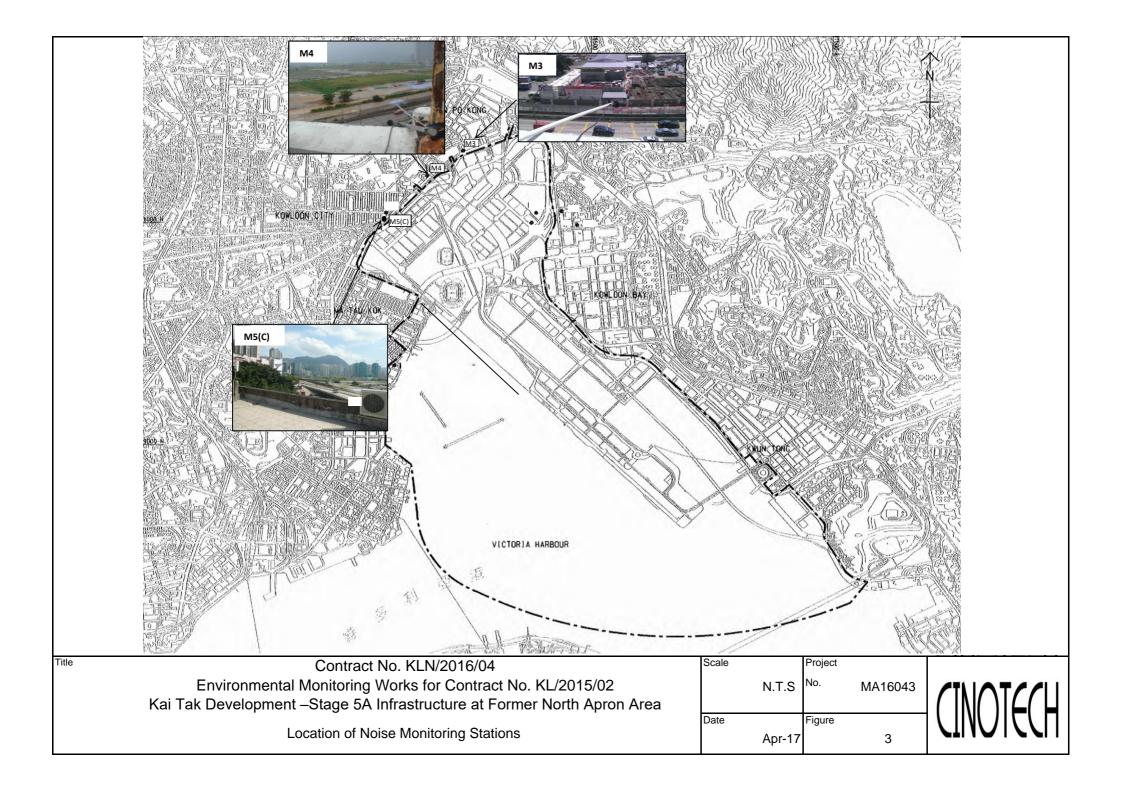
Air Quality

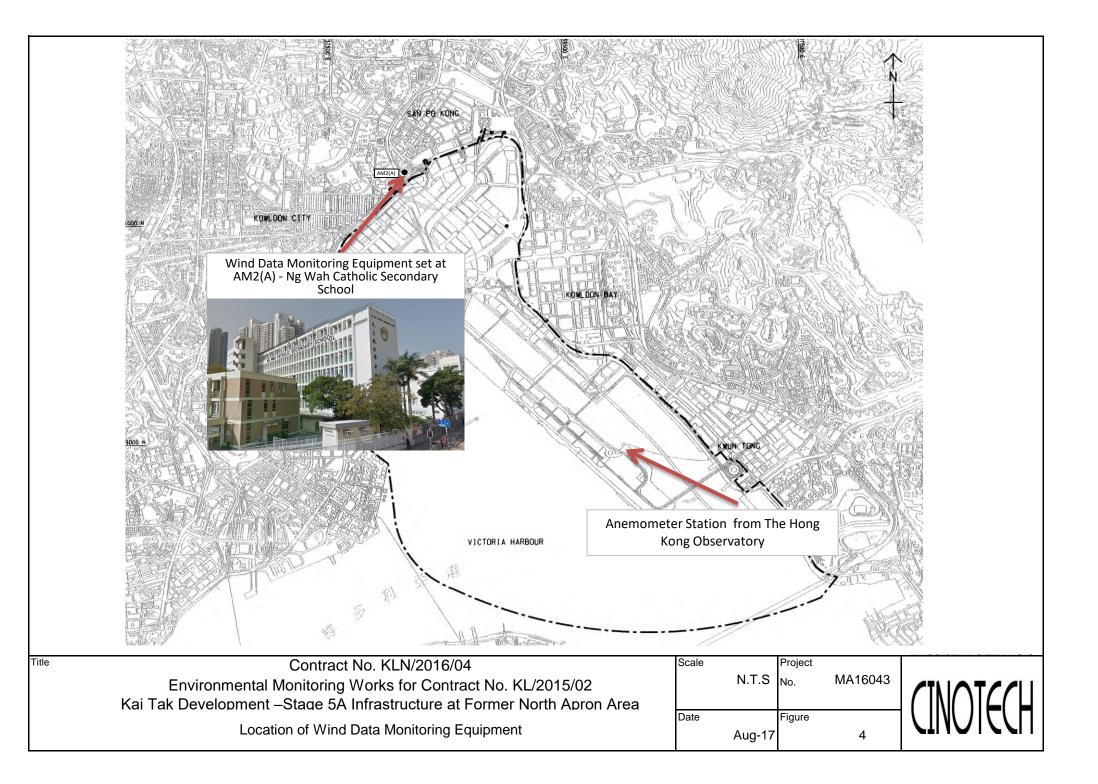
- The Contractor is suggested to review the status of dusty materials and reminded to cover it if no excavation works.
- The Contractor is suggested to fulfill the display requirement of NRMM on the PMEs.

FIGURES









APPENDIX A ACTION AND LIMIT LEVELS FOR AIR QUALITY AND NOISE

Appendix A - Action and Limit Levels

Location	Action Level, μg/m ³	Limit Level, μg/m ³
AM2	346	500

Table A-1Action and Limit Levels for 1-Hour TSP

Table A-2Action and Limit Levels for 24-Hour TSP

Location	Action Level, µg/m ³	Limit Level, µg/m ³
AM2(A)	157	260

Table A-3 Action and Limit Levels for Construction Noise

Time Period	Action Level	Limit Level
0700-1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A) 70dB(A)/65dB(A)*

Remarks: If works are to be carried out during restricted hours, the conditions stipulated in the Construction Noise Permit (CNP) issued by the Noise Control Authority have to be followed. *70dB(A) and 65dB(A) for schools during normal teaching periods and school examination periods, respectively.

APPENDIX B-1 COPIES OF CALIBRATION CERTIFCATES (AIR)

Cerificate of Calibration

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler

Description:	Laser Dust Mo	nitor			Date of	of Calibration	25-Apr-19
Manufacturer:	Sibata Scientif	ĩc Technology L	JTD.		Validity of Calibra	ation Record	24-Jun-19
Model No.:	LD-3B	-					
Serial No.:	2Y6194						
Equipment No.:	SA-01-02	-		Sensitivity	0.001 mg/m3		
High Volume Sa	ampler No.:	A-01-03		Before Sensi	tivity Adjustment	578	
Tisch Calibratio	n Orifice No.:	3607		After Sensiti	vity Adjustment	578	
			Calibrati	ion of 1 hr T	SP		
Calibration		Laser Dust	Monitor			HVS	
Point	Total Count	С	Count / Minute X-axis		Mass	s concentration (µ Y-axis	ıg/m ³)
1	3189.0		53.2			58.7	
2	3510.1		58.5			80.9	
3	3660.5		61.0			89.8	
Aver	rage		57.55			76.47	
By Linear Regr Slope , mw =	ression of Y on 3.98			Inter	rcept, bw =	-153.031	5
Correl	ation coefficien	ıt* =	0.9994	4			
Set Correlation l SCF = [K=Hig		pler / Dust Mete	er, (μg/m3)]		1.3		

In-house method in according to the instruction manual:

The Dust Monitor was compared with a calibrated High Volume Sampler and The result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Those filter papers are weighted by HOKLAS laboratory (Wellab Litimed)

Calibrated by: ________ Wong Shing Kwai

Approved by: Henry Leung

<u>Cerificate of Calibration</u>

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler

Description:	Digital Dust Indicator		Date	of Calibration	10-Jun-19
Manufacturer:	Sibata Scientific Technology LTD.	_	Validity of Calib	ration Record	9-Aug-19
Model No.:	LD-5R				
Serial No.:	<u>8Y2374</u>				
Equipment No.:	SA-01-04	Sensitivity	0.001 mg/m3	_	
High Volume Sa	mpler No.: <u>A-01-03</u>	Before Sensiti	vity Adjustment	652	
Tisch Calibratio	n Orifice No.: <u>3607</u>	After Sensitivi	ty Adjustment	652	
	Ca	libration of 1 h	r TSP		
Calibration	Laser Dust Monitor	ſ		HVS	
Point	Mass Concentration (mg/ X-axis	/m3)	Mas	ss concentration (m	ng/m ³)
1				Y-axis	
2	91.2			127.1 121.8	
3					
Average	80.5 86.3			115.0 121.3	
Average	00.5			121.3	
By Linear Regr	ession of Y on X				
•	1.1214	Intero	cept, bw =	24.5645	
Correlation co	oefficient* = 0.9980		-		
	Se	t Correlation F	actor		
Particaulate Con	centration by High Volume Sampler ((mg/m^3)		121.3	
Particaulate Con	centration by Dust Meter (mg/m ³)			86.3	
Measureing time	e, (min)			60.0	
Set Correlation I	Factor, SCF				
SCF = [K=Hig	h Volume Sampler / Dust Meter, (µ	g/m3)]	1.4		

In-house method in according to the instruction manual:

The Dust Monitor was compared with a calibrated High Volume Sampler and The result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Those filter papers are weighted by HOKLAS laboratory (Wellab Litimed)

Approved by: Henry Leung

<u>Cerificate of Calibration</u>

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler

Description:	Handheld Particle Counter	Date of Calibration	10-Jun-19
Manufacturer:	Hal Technology	Validity of Calibration Record	9-Aug-19
Model No.:	Hal -HPC301		
Serial No.:	3011701018		
Equipment No.:	<u>A-27-05</u>		
High Volume Sa	mpler No.: <u>A-01-03</u>		
Tisch Calibratio	n Orifice No.: <u>3607</u>		

		Calibration of 1 hr TSP	
Calibration	Laser Dust Mor	nitor	HVS
Point	Mass Concentration X-axis	(µg/m3)	Mass concentration (µg/m ³) Y-axis
1	97.6		127.1
2	92.6		121.8
3	83.2		115.0
Average	91.1		121.3
By Linear Regre Slope , mw =		Intercept, bw =	46.0962
	0.8252	Intercept, bw =	46.0962
Slope , mw = Correlation co	0.8252 0.9	9947 Set Correlation Factor	
Slope , mw = Correlation coo Particaulate Conc	0.8252	Set Correlation Factor bler (µg/m ³)	<u>46.0962</u> <u>121.3</u> 91.1
Slope , mw = Correlation coo Particaulate Conc	0.8252 efficient* = 0.9 centration by High Volume Samp centration by Dust Meter (µg/m ³)	Set Correlation Factor bler (µg/m ³)	121.3
Slope , mw = Correlation coo Particaulate Conc Particaulate Conc	0.8252 efficient* = 0.9 centration by High Volume Samp centration by Dust Meter (µg/m ³) (min)	Set Correlation Factor bler (µg/m ³)	121.3 91.1

In-house method in according to the instruction manual:

The Dust Monitor was compared with a calibrated High Volume Sampler and The result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Those filter papers are weighted by HOKLAS laboratory (Wellab Litimed)

Calibrated by: Kwai

Approved by: Henry Leung

<u>Cerificate of Calibration</u>

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler

Description:	Handheld Particle Counter	Date of Calibration	10-Jun-19
Manufacturer:	Hal Technology	Validity of Calibration Record	9-Aug-19
Model No.:	Hal -HPC301		
Serial No.:	3011701012		
Equipment No.:	A-27-07		
High Volume Sa	ampler No.: <u>A-01-03</u>		
Tisch Calibratio	on Orifice No.: <u>3607</u>		

	Calibration of	f 1 hr TSP
Calibration	Laser Dust Monitor	HVS
Point	Mass Concentration (µg/m3)	Mass concentration ($\mu g/m^3$)
Tohit	X-axis	Y-axis
1	120.5	127.1
2	114.0	121.8
3	108.0	115.0
Average	114.2	121.3
By Linear Regree Slope , mw =	0.9659	Intercept, bw = <u>11.0281</u>
•	<u>0.9659</u> fficient* = <u>0.9955</u>	
Slope , mw = Correlation coe	0.9659 fficient* =	
Slope , mw = Correlation coe	<u>0.9659</u> fficient* = <u>0.9955</u>	on Factor
Slope , mw = Correlation coe	$\frac{0.9659}{\text{fficient}^* = 0.9955}$ $\frac{\text{Set Correlati}}{\text{entration by High Volume Sampler (}\mu\text{g/m}^3\text{)}}$ $\frac{1}{(\mu\text{g/m}^3)}$	on Factor 121.3
Slope , mw = Correlation coe Particaulate Conco		on Factor 121.3 114.2

In-house method in according to the instruction manual:

The Dust Monitor was compared with a calibrated High Volume Sampler and The result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Those filter papers are weighted by HOKLAS laboratory (Wellab Litimed)

Calibrated by: <u>Kal</u> Wong Shing Kwai

Approved by: <u>Henry Leung</u>

High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET

Temperature, Ta (K)

294.8



756.8

File No. MA16043/13/0011

Project No.	AM2(A) - Ng Wah Catholic					
Date:	6-May-19	Next Due Date:	5-Jul-19	Operator:	SK	
Equipment No.:	A-01-13	Model No.:	TE-5170	Serial No.	1352	
		Ambient Condit	ion			

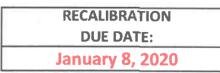
Orifice Transfer Standard Information							
Serial No.	Serial No. 3607 Slope, mc 0.0588 Intercept, bc -0.02422						
Last Calibration Date:	Last Calibration Date: 8-Jan-19 $\operatorname{mc} x \operatorname{Qstd} + \operatorname{bc} = [\Delta H x (\operatorname{Pa}/760) x (298/\operatorname{Ta})]^{1/2}$						
Next Calibration Date:8-Jan-20Qstd = $\{[\Delta H x (Pa/760) x (298/Ta)]^{1/2} - bc\} / mc$							

Pressure, Pa (mmHg)

		Calibration of	TSP Sampler			
Calibration		Orfice			HVS	
Point	ΔH (orifice), in. of water	$[\Delta H \ x \ (Pa/760) \ x \ (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of water	$[\Delta W \ x \ (Pa/760) \ x \ (298/Ta)]^{1/2}$ Y-axis	
1	11.2	3.36	57.52	7.4	2.73	
2	8.5	2.93	50.16	5.9	2.44	
3	7.1	2.67	45.88	4.6	2.15	
4	4.7	2.18	37.40	2.7	1.65	
5	3.1	1.77	30.45	1.8	1.35	
	coefficient* = Coefficient < 0.990	0.9969), check and recalibrate.	-		6	
		0.9969), check and recalibrate.	-			
*If Correlation	Coefficient < 0.990	0.9969), check and recalibrate. Set Point C	alculation			
*If Correlation From the TSP F	Coefficient < 0.990	0.9969), check and recalibrate.	alculation			
If Correlation	Coefficient < 0.990	0.9969), check and recalibrate. Set Point C urve, take Qstd = 43 CFM		98/Ta)] ^{1/2}		

	<i>au</i> 111		tal		
Conducted by:	SK Wong	Signature:		Date:	6 May 2019
Checked by:	Henry Leung	Signature:	- Home short	Date:	6 May 2019





Certificate of Calibration

Calibration Certification Information Cal. Date: °К January 8, 2019 Rootsmeter S/N: 438320 Ta: 294 **Operator:** Jim Tisch Pa: 748.0 mm Hg Calibrator S/N: 3607 Calibration Model #: TE-5025A Vol. Init Vol. Final ΔVol. ΔTime ΔΡ ΔH Run (m3) (m3)(m3) (min) (mm Hg) (in H2O) 1 1 2 1 1.4340 2.00 3.2 2 3 4 1 1.0190 6.3 4.00 3 5 6 1 0.9110 7.8 5.00 4 7 8 1 0.8650 8.7 5.50 5 9 10 0.7150 1 12.6 8.00 **Data Tabulation** Ра Tstd ∫ΔH(Ta/Pa) Δŀ Pstd 八 Vstd Ostd Ta Qa (m3) (x-axis) (y-axis) (x-axis) Va (y-axis) 0.9934 0.6927 1.4125 0.9957 0.6944 0.8866 0.9892 0.9708 1.9976 0.9916 0.9731 1.2538 0.9872 1.0837 2.2334 0.9896 1.0862 1.4018 0.9860 1.1399 2.3424 0.9884 1.1426 1.4703 0.9808 1.3718 0.9832 2.8251 1.3750 1.7732 2.07879 m= m= 1.30170 b= -0.02422 QSTD QA -0.01520 b= 0.99997 0.99997 r= r= Calculations Vstd= $\Delta Vol((Pa-\Delta P)/Pstd)(Tstd/Ta)$ Va= $\Delta Vol((Pa-\Delta P)/Pa)$ Qstd= Vstd/ Δ Time Qa= Va/ATime For subsequent flow rate calculations: Tstd Pa Qstd= 1/m ∆H(Ta/Pa Qa= 1/m ΔH Pstd Ta **Standard Conditions** 298.15 °K Tstd: RECALIBRATION Pstd: 760 mm Hg US EPA recommends annual recalibration per 1998 Key 40 Code of Federal Regulations Part 50 to 51, ΔH: calibrator manometer reading (in H2O) ΔP: rootsmeter manometer reading (mm Hg) Appendix B to Part 50, Reference Method for the Ta: actual absolute temperature (°K) Determination of Suspended Particulate Matter in Pa: actual barometric pressure (mm Hg) the Atmosphere, 9.2.17, page 30 b: intercept m: slope

sch Environmental, Inc. 15 South Miami Avenue

llage of Cleves, OH 45002

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Cerificate of Calibration - Wind Monitoring Station

Description:	Ng Wah Catholic Seconday School - Weather Stations
Manufacturer:	Davis Instruments
Model No.:	Davis 6152, Vantage Pro2
Serial No.:	<u>BC180522050</u>
Equipment No.:	<u>SA-03-03</u>
Date of Calibration	<u>13-Apr-19</u>
Next Due Date	<u>12-Oct-19</u>

1. Performance check of Wind Speed

Wind Sp	beed, m/s	Difference D (m/s)
Wind Speed Reading (V1)	Anemometer Value (V1)	D = V1 - V2
0.5	0.5	0.0
1.5	1.5	0.0
1.8	1.7	1.0
2.3	2.2	1.0

2. Performance check of Wind Direction

Wind Direction (°)		Difference D (°)
Wind Direction Reading (V1)	Marine Compass Value (V1)	$\mathbf{D} = \mathbf{W1} - \mathbf{W2}$
0	0	0.0
90.2	90	0.2
180	180	0.0
270.3	270	0.3

Test Specification:

- 1. Performance Wind Speed Test The wind meter was on-site calibrated against the anemometer
- 2. Performance Wind Direction Test The wind meter was on-site calibrated against the marine compass at four direction

Calibrated by: ______ Approved by: _______ Henry Leung /

APPENDIX B-2 COPIES OF CALIBRATION CERTIFCATES (NOISE)



1 of 1

TEST REPORT

APPLICANT:	Cinotech Consultants Limited	Test Report No.:	29501
	Room 1710, Technology Park,	Date of Issue:	2018-08-27
	18 On Lai Street,	Date Received:	2018-08-24
	Shatin, NT, Hong Kong	Date Tested:	2018-08-24
		Date Completed:	2018-08-27
		Next Due Date:	2019-08-26

ATTN:

Mr. W.K. Tang

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 21455
Microphone No.	: 43730
Equipment No.	: N-08-07
	· .

Page:

Test conditions:

Room Temperatre Relative Humidity : 17-22 degree Celsius : 40-70%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY: For and On Behalf of WELLAB Ltd.

PATRICK TSE Laboratory Manager



1 of 1

TEST REPORT

APPLICANT: Cinotech Consultants Limited Test Report No.: 30293 Date of Issue: Room 1710, Technology Park, 2018-11-24 Date Received: 2018-11-23 18 On Lai Street, Shatin, NT, Hong Kong Date Tested: 2018-11-23 2018-11-24 Date Completed: Next Due Date: 2019-11-23

ATTN: Mr. W.K. Tang

Certificate of Calibration

Item for calibration:

Description Manufacturer Model No. Serial No. Microphone No. Equipment No.

Test conditions:

Room Temperatre Relative Humidity : 'SVANTEK' Integrating Sound Level Meter : SVANTEK : SVAN 957 : 23852 : 43690 : N-08-11

: 17-22 degree Celsius : 40-70%

Page:

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY: For and On Behalf of **WELLAB Ltd.**

abul

PATRICK TSE Laboratory Manager



TEST REPORT

APPLICANT: Cinotech Consultants Limited Room 1710, Technology Park, 18 On Lai Street, Shatin, NT, Hong Kong

Test Report No .:	30294
Date of Issue:	2018-11-24
Date Received:	2018-11-23
Date Tested:	2018-11-23
Date Completed:	2018-11-24
Next Due Date:	2019-11-23
Page:	1 of 1

ATTN:

Mr. W.K. Tang

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 23851
Equipment No.	: N-08-12
s:	

Test conditions:

Room Temperatre	: 17-22 degree Celsius
Relative Humidity	: 40-70%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY: For and On Behalf of WELLAB Ltd.

PATRICK TSE Laboratory Manager



TEST REPORT

APPLICANT: Cinotech Consultants Limited Room 1710, Technology Park, 18 On Lai Street, Shatin, NT, Hong Kong

Test Report No.:	C/N/181213/1
Date of Issue:	2018-12-13
Date Received:	2018-12-12
Date Tested:	2018-12-12
Date Completed:	2018-12-13
Next Due Date:	2019-12-12
Page:	1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 979
Serial No.	: 27189
Microphone No.	: 165399
Equipment No.	: SN-01-01
Test conditions:	
Room Temperatre	: 22 degree Celsius
Relative Humidity	: 58 %

Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1KHz)	Measured SPL	Tolerance
At 94.0 SPL	94.0	94.0 ± 0.1dB
At 114.0 SPL	114.0	114.0± 0.1dB

PREPARED AND CHECKED BY: For and On Behalf of **WELLAB Ltd.**

PATRICK TSE Laboratory Manager

This report may not be reproduced except with prior written approval from WELLAB LIMITED and the results relate only to the items calibrated or tested.



TEST REPORT APPLICANT: Cinotech Consultants Limited Test Report No.: 30289 Date of Issue: Room 1710, Technology Park, 2018-11-04 Date Received: 2018-11-03 18 On Lai Street, Shatin, NT, Hong Kong Date Tested: 2018-11-03 Date Completed: 2018-11-04 Next Due Date: 2019-11-03 ATTN: Page: Mr. W.K. Tang 1 of 1 Item for calibration: Description : Acoustical Calibrator Manufacturer : Brüel & Kjær Model No. : 4231 Serial No. : 2326353 Equipment No. : N-02-01 **Test conditions:** Room Temperatre : 17-22 degree Celsius Relative Humidity : 40-70 %

Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	$94.0 \pm 0.1 \text{ dB}$
At 114 dB SPL	114.0	$114.0 \pm 0.1 \text{ dB}$

PREPARED AND CHECKED BY: For and On Behalf of **WELLAB Ltd.**

PATRICK TSE Laboratory Manager



TEST REPORT APPLICANT: Cinotech Consultants Limited Test Report No.: 29817A Date of Issue: Room 1710, Technology Park, 2018-09-29 Date Received: 18 On Lai Street, 2018-09-28 Shatin, NT, Hong Kong Date Tested: 2018-09-28 Date Completed: 2018-09-29 Next Due Date: 2019-09-28 ATTN: Page: Mr. W.K. Tang 1 of 1 Item for calibration: Description : Acoustical Calibrator Manufacturer : SVANTEK Model No. : SV30A Serial No. : 10965 Equipment No. : N-09-02 **Test conditions:** Room Temperatre : 17-22 degree Celsius Relative Humidity : 40-70%

Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	$94.0 \pm 0.1 \text{ dB}$
At 114 dB SPL	114.0	$114.0 \pm 0.1 \text{ dB}$

PREPARED AND CHECKED BY: For and On Behalf of **WELLAB Ltd.**

PATRICK TSE Laboratory Manager

APPENDIX C WEATHER INFORMATION

APPENDIX C – WEATHER CONDITIONS DURING THE MONITORING PERIOD

- **Mean Air Temperature Mean Relative** Date **Precipitation(mm)** (°C) Humidity (%) 1-Jun-19 27.2 87 32.6 3 27.2 86 2-Jun-19 3-Jun-19 27.5 85 34.1 4-Jun-19 28 89 38.1 82 5-Jun-19 29.4 0 6-Jun-19 30.2 78 Trace 7-Jun-19 77 30.1 0 8-Jun-19 30.1 76 1.1 79 9-Jun-19 30.1 4.1 10-Jun-19 29.5 81 3.3 11-Jun-19 27.5 91 111.6 12-Jun-19 27.5 91 1.5 13-Jun-19 27.7 88 55.8 14-Jun-19 28.4 76 16.5 15-Jun-19 28.6 74 Trace 80 0 16-Jun-19 27.9 4.7 17-Jun-19 88 27.6 18-Jun-19 28.6 88 11.1 87 14 19-Jun-19 28.9 20-Jun-19 80 0.5 30.1 21-Jun-19 77 0.7 30.8 30.7 78 0.7 22-Jun-19 23-Jun-19 80 3.2 30.3 24-Jun-19 29.1 85 16.8 89 25-Jun-19 27.2 35.4 26-Jun-19 28.6 86 0.9 27-Jun-19 30.2 83 3.5 28-Jun-19 30.5 82 2.2 29-Jun-19 31 79 0.6 29.5 85 33.1 30-Jun-19
- I. General

* The above information was extracted from the daily weather summary by Hong Kong Observatory.

** Trace = rainfall less than 0.05 mm.

*** The level of precipitation indicate the total amount of rainfall for each date (24 hours)

Date	Time	Wind speed(m/s)	Wind Direction
1-Jun-19	0:00	0.3	NE
1-Jun-19	1:00	0.4	NE
1-Jun-19	2:00	0.9	ENE
1-Jun-19	3:00	0	SSE
1-Jun-19	4:00	0	ENE
1-Jun-19	5:00	0	ENE
1-Jun-19	6:00	0.4	SW
1-Jun-19	7:00	0	
1-Jun-19	8:00	0	
1-Jun-19	9:00	0	Е
1-Jun-19	10:00	1.8	ENE
1-Jun-19	11:00	1.3	ENE
1-Jun-19	12:00	0.9	SSE
1-Jun-19	13:00	0.9	SW
1-Jun-19	14:00	1.3	ENE
1-Jun-19	15:00	2.2	SW
1-Jun-19	16:00	2.2	SW
1-Jun-19	17:00	0.9	SSW
1-Jun-19	18:00	0.9	SW
1-Jun-19	19:00	0.4	ENE
1-Jun-19	20:00	0.4	SW
1-Jun-19	21:00	0.4	SW
1-Jun-19	22:00	1.3	ENE
1-Jun-19	23:00	0.9	SW
2-Jun-19	0:00	0.9	SW
2-Jun-19	1:00	0	SSW
2-Jun-19	2:00	0	SW
2-Jun-19	3:00	0.4	SW
2-Jun-19	4:00	0.4	WSW
2-Jun-19	5:00	0.4	SW
2-Jun-19	6:00	0.9	SW
2-Jun-19	7:00	0.4	SW
2-Jun-19	8:00	0.9	SW
2-Jun-19	9:00	1.3	SW
2-Jun-19	10:00	0.9	SW

2-Jun-19 11:00 1.8 2-Jun-19 12:00 1.8	ENE
2-Jun-19 12:00 1.8	
	ENE
2-Jun-19 13:00 1.3	SW
2-Jun-19 14:00 1.3	ESE
2-Jun-19 15:00 1.3	SW
2-Jun-19 16:00 0.9	SE
2-Jun-19 17:00 2.2	SW
2-Jun-19 18:00 1.3	SW
2-Jun-19 19:00 1.3	SW
2-Jun-19 20:00 1.3	SW
2-Jun-19 21:00 0.4	SW
2-Jun-19 22:00 0	N
2-Jun-19 23:00 0	
3-Jun-19 0:00 0.4	NNE
3-Jun-19 1:00 0.4	WSW
3-Jun-19 2:00 1.3	SW
3-Jun-19 3:00 0.4	SW
3-Jun-19 4:00 0.4	SW
3-Jun-19 5:00 0.4	N
3-Jun-19 6:00 0.4	WSW
3-Jun-19 7:00 0.4	SW
3-Jun-19 8:00 0.4	ENE
3-Jun-19 9:00 0.4	SE
3-Jun-19 10:00 0.9	SW
3-Jun-19 11:00 1.8	SW
3-Jun-19 12:00 0.4	SW
3-Jun-19 13:00 1.3	ENE
3-Jun-19 14:00 1.3	ENE
3-Jun-19 15:00 0.9	ESE
3-Jun-19 16:00 1.3	SW
3-Jun-19 17:00 0.9	SW
3-Jun-19 18:00 1.8	SW
3-Jun-19 19:00 1.8	SW
3-Jun-19 20:00 0.9	SW
3-Jun-19 21:00 0.9	SW
3-Jun-19 22:00 0.4	SW
3-Jun-19 23:00 0.9	SW
4-Jun-19 0:00 0	SW

	1:00	0	SW
4-Jun-19 4-Jun-19	2:00	0.4	SW
4-Jun-19	3:00	0.4	SW
4-Jun-19	4:00	0.4	WSW
4-Jun-19	5:00	0.4	ESE
4-Jun-19	6:00	0	NE
4-Jun-19	7:00	0.4	SW
4-Jun-19	8:00	0.4	SW
4-Jun-19	9:00	0.4	SW
4-Jun-19	10:00	0.8	SW
4-Jun-19	11:00	0.8	ENE
4-Jun-19	12:00	1.2	ENE
4-Jun-19	13:00	1.8	ENE
4-Jun-19	14:00	2.7	ENE
4-Jun-19	15:00	1.8	ENE
4-Jun-19	16:00	1.3	SW
4-Jun-19	17:00	1.3	SW
4-Jun-19	18:00	1.3	SW
4-Jun-19	19:00	0.9	SSW
4-Jun-19	20:00	0.4	Е
4-Jun-19	21:00	0.9	ENE
4-Jun-19	22:00	0.9	ENE
4-Jun-19	23:00	0.9	NE
5-Jun-19	0:00	0.9	ENE
5-Jun-19	1:00	0	ESE
5-Jun-19	2:00	0	ESE
5-Jun-19	3:00	0.4	NE
5-Jun-19	4:00	0	NNE
5-Jun-19	5:00	0.4	NE
5-Jun-19	6:00	0.4	NE
5-Jun-19	7:00	0.4	NNE
5-Jun-19	8:00	1.3	ENE
5-Jun-19	9:00	1.8	ENE
5-Jun-19	10:00	2.2	ENE
5-Jun-19	11:00	2.2	ENE
5-Jun-19	12:00	2.7	ENE
5-Jun-19	13:00	3.6	ENE
5-Jun-19	14:00	3.6	ENE

5-Jun-19	15:00	4	ENE
5-Jun-19	16:00	3.1	ENE
5-Jun-19	17:00	2.2	ENE
5-Jun-19	18:00	2.2	ENE
5-Jun-19	19:00	1.3	ENE
5-Jun-19	20:00	1.3	ENE
5-Jun-19	21:00	1.3	ENE
5-Jun-19	22:00	2.2	ENE
5-Jun-19	23:00	1.3	ENE
6-Jun-19	0:00	1.3	ENE
6-Jun-19	1:00	1.3	ENE
6-Jun-19	2:00	0.9	NNE
6-Jun-19	3:00	0.9	NNE
6-Jun-19	4:00	0.9	NNE
6-Jun-19	5:00	0.9	NNE
6-Jun-19	6:00	1.3	ENE
6-Jun-19	7:00	0.9	NE
6-Jun-19	8:00	0.9	NNE
6-Jun-19	9:00	2.2	ENE
6-Jun-19	10:00	2.7	ENE
6-Jun-19	11:00	2.7	ENE
6-Jun-19	12:00	4	ENE
6-Jun-19	13:00	3.1	ENE
6-Jun-19	14:00	1.8	ENE
6-Jun-19	15:00	1.8	ENE
6-Jun-19	16:00	3.1	ENE
6-Jun-19	17:00	3.1	ENE
6-Jun-19	18:00	2.7	ENE
6-Jun-19	19:00	2.7	ENE
6-Jun-19	20:00	1.3	ENE
6-Jun-19	21:00	2.2	ENE
6-Jun-19	22:00	2.2	ENE
6-Jun-19	23:00	2.2	ENE
7-Jun-19	0:00	1.8	ENE
7-Jun-19	1:00	1.8	ENE
7-Jun-19	2:00	1.3	ENE
7-Jun-19	3:00	0.9	NE
7-Jun-19	4:00	1.3	ENE

7-Jun-19	5:00	0.9	NNE
7-Jun-19	6:00	0.4	ENE
7-Jun-19	7:00	1.3	ENE
7-Jun-19	8:00	0.9	SW
7-Jun-19	9:00	0.9	SW
7-Jun-19	10:00	1.3	ENE
7-Jun-19	11:00	1.3	ESE
7-Jun-19	12:00	1.3	ESE
7-Jun-19	13:00	1.8	Е
7-Jun-19	14:00	1.8	ESE
7-Jun-19	15:00	1.8	SW
7-Jun-19	16:00	1.8	Е
7-Jun-19	17:00	1.3	Е
7-Jun-19	18:00	1.3	ESE
7-Jun-19	19:00	2.2	ENE
7-Jun-19	20:00	0.9	SW
7-Jun-19	21:00	2.2	ENE
7-Jun-19	22:00	1.5	ENE
7-Jun-19	23:00	1.6	ENE
8-Jun-19	0:00	1.3	SE
8-Jun-19	1:00	1.3	SE
8-Jun-19	2:00	1.3	ENE
8-Jun-19	3:00	1.8	ENE
8-Jun-19	4:00	1.3	ESE
8-Jun-19	5:00	0.9	ENE
8-Jun-19	6:00	0.9	ENE
8-Jun-19	7:00	1.3	ENE
8-Jun-19	8:00	1.3	ENE
8-Jun-19	9:00	1.3	ENE
8-Jun-19	10:00	1.3	ENE
8-Jun-19	11:00	1.3	Е
8-Jun-19	12:00	0.9	SW
8-Jun-19	13:00	1.8	SW
8-Jun-19	14:00	2.2	ENE
8-Jun-19	15:00	1.3	Е
8-Jun-19	16:00	1.8	ENE
8-Jun-19	17:00	1.8	Е
8-Jun-19	18:00	1.3	ESE

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8-Jun-19	19:00	1.3	ESE
8-Jun-19	20:00	0.9	ESE
8-Jun-19	21:00	1.3	Е
8-Jun-19	22:00	1.3	ENE
8-Jun-19	23:00	2.7	ENE
9-Jun-19	0:00	2.2	ENE
9-Jun-19	1:00	2.2	ENE
9-Jun-19	2:00	2.2	ENE
9-Jun-19	3:00	2.2	ENE
9-Jun-19	4:00	1.8	ENE
9-Jun-19	5:00	1.8	ENE
9-Jun-19	6:00	1.3	ENE
9-Jun-19	7:00	1.3	ENE
9-Jun-19	8:00	1.3	ESE
9-Jun-19	9:00	1.8	ENE
9-Jun-19	10:00	1.8	ENE
9-Jun-19	11:00	1.3	Е
9-Jun-19	12:00	1.8	ENE
9-Jun-19	13:00	1.8	Е
9-Jun-19	14:00	2.2	ESE
9-Jun-19	15:00	1.3	ESE
9-Jun-19	16:00	1.3	ENE
9-Jun-19	17:00	1.3	SE
9-Jun-19	18:00	2.7	SW
9-Jun-19	19:00	1.8	SW
9-Jun-19	20:00	0.4	SW
9-Jun-19	21:00	0.4	NNE
9-Jun-19	22:00	0.4	ENE
9-Jun-19	23:00	0.4	ENE
10-Jun-19	0:00	0.4	ENE
10-Jun-19	1:00	0.4	NE
10-Jun-19	2:00	0.4	ENE
10-Jun-19	3:00	0.4	SW
10-Jun-19	4:00	1.8	ENE
10-Jun-19	5:00	0.4	SW
10-Jun-19	6:00	0.9	SW
10-Jun-19	7:00	0.4	SW
10-Jun-19	8:00	0.4	ENE

10-Jun-19 9:00 0.4 SE 10-Jun-19 10:00 0.9 SW 10-Jun-19 11:00 1.3 SW 10-Jun-19 12:00 0.9 SW 10-Jun-19 13:00 1.3 ENE 10-Jun-19 14:00 1.8 ENE 10-Jun-19 15:00 3.1 ENE 10-Jun-19 16:00 2.2 ENE 10-Jun-19 18:00 1.8 ENE 10-Jun-19 18:00 0.4 NNE 10-Jun-19 19:00 0.4 NE 10-Jun-19 20:00 0.4 NE 10-Jun-19 20:00 0.4 NE 10-Jun-19 20:00 0.4 NE 10-Jun-19 20:00 0.4 ENE 11-Jun-19 0:00 0.4 ENE 11-Jun-19 3:00 0 SE 11-Jun-19 6:00 0.4 ENE 11-Jun-19 6:00		·		
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10-Jun-1921:000NE10-Jun-1922:000.4NE10-Jun-1923:000NE11-Jun-190:000.4ENE11-Jun-191:000.9ENE11-Jun-192:000.4NE11-Jun-193:000SE11-Jun-193:000.4ENE11-Jun-195:000.4ENE11-Jun-195:000.4ENE11-Jun-195:000.4ENE11-Jun-195:000.4ENE11-Jun-197:000.4ENE11-Jun-197:000.4ENE11-Jun-197:001.3ENE11-Jun-199:001.3ENE11-Jun-1910:001.3ENE11-Jun-1911:001.3ENE11-Jun-1913:001.8ENE11-Jun-1915:001.3NE11-Jun-1916:001.8ENE11-Jun-1917:001.8ENE11-Jun-1917:001.8ENE11-Jun-1917:001.8ENE11-Jun-1917:001.8ENE11-Jun-1912:001.3ENE11-Jun-1912:001.3ENE11-Jun-1912:001.3ENE11-Jun-1912:001.3ENE11-Jun-1912:001.3ENE11-Jun-1912:000.9NNE11-Jun-1912:000.9	10-Jun-19	19:00	0.4	NNE
10-Jun-1922:000.4NE10-Jun-1923:000NE11-Jun-190:000.4ENE11-Jun-191:000.9ENE11-Jun-192:000.4NE11-Jun-193:000SE11-Jun-193:000.4NE11-Jun-195:000.4ENE11-Jun-195:000.4ENE11-Jun-196:000.4ENE11-Jun-197:000.4ENE11-Jun-197:000.4ENE11-Jun-197:001.3ENE11-Jun-199:001.3ENE11-Jun-1911:001.3ENE11-Jun-1911:001.3ENE11-Jun-1912:001.8ENE11-Jun-1915:001.3NE11-Jun-1916:001.8ENE11-Jun-1919:001.3ENE11-Jun-1912:001.8ENE11-Jun-1912:001.8ENE11-Jun-1912:001.8ENE11-Jun-1912:001.8ENE11-Jun-1912:001.8ENE11-Jun-1912:001.8ENE11-Jun-1912:001.8ENE11-Jun-1912:001.8ENE11-Jun-1912:001.3ENE11-Jun-1912:001.3ENE11-Jun-1912:000.9NNE11-Jun-1920:001.3 </td <td>10-Jun-19</td> <td>20:00</td> <td>0.4</td> <td>NE</td>	10-Jun-19	20:00	0.4	NE
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11-Jun-198:001.3ENE11-Jun-199:001.8ENE11-Jun-1910:001.3ENE11-Jun-1911:001.3ENE11-Jun-1912:001.8ENE11-Jun-1913:001.8ENE11-Jun-1914:000.9NNE11-Jun-1915:001.3NE11-Jun-1916:001.8ENE11-Jun-1917:001.8ENE11-Jun-1917:001.8ENE11-Jun-1913:001.8ENE11-Jun-1912:001.3ENE11-Jun-1912:001.3ENE11-Jun-1919:001.3ENE11-Jun-1920:001.3ENE11-Jun-1921:000.9NNE	11-Jun-19	6:00	0.4	ENE
11-Jun-199:001.8ENE11-Jun-1910:001.3ENE11-Jun-1911:001.3ENE11-Jun-1912:001.8ENE11-Jun-1913:001.8ENE11-Jun-1914:000.9NNE11-Jun-1915:001.3NE11-Jun-1916:001.8ENE11-Jun-1917:001.8ENE11-Jun-1917:001.8ENE11-Jun-1918:001.3ENE11-Jun-1919:001.3ENE11-Jun-1920:001.3ENE11-Jun-1921:000.9NNE	11-Jun-19	7:00	0.4	ENE
11-Jun-1910:001.3ENE11-Jun-1911:001.3ENE11-Jun-1912:001.8ENE11-Jun-1913:001.8ENE11-Jun-1914:000.9NNE11-Jun-1915:001.3NE11-Jun-1916:001.8ENE11-Jun-1917:001.8ENE11-Jun-1917:001.8ENE11-Jun-1912:001.3ENE11-Jun-1912:001.3ENE11-Jun-1919:001.3ENE11-Jun-1919:001.3ENE11-Jun-1920:001.3ENE11-Jun-1921:000.9NNE	11-Jun-19	8:00	1.3	ENE
11-Jun-1911:001.3ENE11-Jun-1912:001.8ENE11-Jun-1913:001.8ENE11-Jun-1914:000.9NNE11-Jun-1915:001.3NE11-Jun-1916:001.8ENE11-Jun-1917:001.8ENE11-Jun-1919:001.3ENE11-Jun-1919:001.3ENE11-Jun-1919:000.9NNE	11-Jun-19	9:00	1.8	ENE
11-Jun-1912:001.8ENE11-Jun-1913:001.8ENE11-Jun-1914:000.9NNE11-Jun-1915:001.3NE11-Jun-1916:001.8ENE11-Jun-1917:001.8ENE11-Jun-1918:001.8ENE11-Jun-1920:001.3ENE11-Jun-1920:000.9NNE	11-Jun-19	10:00	1.3	ENE
11-Jun-1913:001.8ENE11-Jun-1914:000.9NNE11-Jun-1915:001.3NE11-Jun-1916:001.8ENE11-Jun-1917:001.8ENE11-Jun-1918:001.8ENE11-Jun-1919:001.3ENE11-Jun-1920:001.3ENE11-Jun-1920:000.9NNE	11-Jun-19	11:00	1.3	ENE
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11-Jun-1916:001.8ENE11-Jun-1917:001.8ENE11-Jun-1918:001.8ENE11-Jun-1919:001.3ENE11-Jun-1920:001.3ENE11-Jun-1921:000.9NNE	11-Jun-19	14:00	0.9	NNE
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11-Jun-1918:001.8ENE11-Jun-1919:001.3ENE11-Jun-1920:001.3ENE11-Jun-1921:000.9NNE	11-Jun-19	16:00	1.8	ENE
11-Jun-1919:001.3ENE11-Jun-1920:001.3ENE11-Jun-1921:000.9NNE	11-Jun-19	17:00	1.8	ENE
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14-Jun-1919:001.3NNE14-Jun-1920:001.3NNE14-Jun-1921:001.3ENE14-Jun-1922:001.3NE14-Jun-1923:000.9ENE15-Jun-190:001.3ENE15-Jun-191:000.9NNE	14-Jun-19	17:00	1.8	ENE
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14-Jun-1921:001.3ENE14-Jun-1922:001.3NE14-Jun-1923:000.9ENE15-Jun-190:001.3ENE15-Jun-191:000.9NNE	14-Jun-19	19:00	1.3	NNE
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15-Jun-190:001.3ENE15-Jun-191:000.9NNE	14-Jun-19	22:00	1.3	NE
15-Jun-19 1:00 0.9 NNE	14-Jun-19	23:00	0.9	ENE
	15-Jun-19	0:00	1.3	ENE
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15-Jun-1911:001.3NNE15-Jun-1912:001.3NNE15-Jun-1913:002.2ENE15-Jun-1914:002.2ENE15-Jun-1915:001.8ENE15-Jun-1915:001.8NNE15-Jun-1916:001.8NNE15-Jun-1917:001.8NNE15-Jun-1919:001.3NNE15-Jun-1919:001.3NNE15-Jun-1920:000.9NNE15-Jun-1921:001.3ENE15-Jun-1922:001.3ENE15-Jun-1923:001.3NNE16-Jun-190:001.3NNE16-Jun-193:001.3NNE16-Jun-193:001.3NNE16-Jun-195:000.9NNE16-Jun-195:000.9NNE16-Jun-197:000.9NNE16-Jun-197:001.3NNE16-Jun-1910:001.3NNE16-Jun-1910:001.3NNE16-Jun-1910:001.3NNE16-Jun-1910:001.3NNE16-Jun-1910:001.3NNE16-Jun-1910:001.3NNE16-Jun-1910:001.3NNE16-Jun-1911:001.8NNE16-Jun-1911:001.8NNE16-Jun-1911:001.8NNE16-Jun-1911:0	15-Jun-19	9:00	1.3	NNE
15-Jun-1912:001.3NNE15-Jun-1913:002.2ENE15-Jun-1914:002.2ENE15-Jun-1915:001.8ENE15-Jun-1916:001.8NNE15-Jun-1916:001.8NNE15-Jun-1917:001.8NNE15-Jun-1917:001.3NNE15-Jun-1919:001.3NNE15-Jun-1920:000.9NNE15-Jun-1921:001.3ENE15-Jun-1922:001.3ENE15-Jun-1923:001.3NNE16-Jun-190:001.3NNE16-Jun-191:001.3NNE16-Jun-193:001.3NNE16-Jun-195:000.9NNE16-Jun-195:000.9NNE16-Jun-197:000.9NNE16-Jun-197:001.3NNE16-Jun-1910:001.3NNE16-Jun-1910:001.3NNE16-Jun-1910:001.3NNE16-Jun-1910:001.3NNE16-Jun-1910:001.3NNE16-Jun-1911:001.8NNE16-Jun-1911:001.8NNE16-Jun-1911:001.8NNE16-Jun-1911:001.8NNE16-Jun-1911:001.8NNE16-Jun-1911:001.8NNE16-Jun-1911:0	15-Jun-19	10:00	1.3	NNE
15-Jun-1913:002.2ENE15-Jun-1914:002.2ENE15-Jun-1915:001.8ENE15-Jun-1916:001.8NNE15-Jun-1917:001.8NNE15-Jun-1917:001.3NNE15-Jun-1919:001.3NNE15-Jun-1919:001.3NNE15-Jun-1920:000.9NNE15-Jun-1921:001.3ENE15-Jun-1922:001.3ENE15-Jun-1923:001.3NNE16-Jun-190:001.3NNE16-Jun-191:001.3NNE16-Jun-191:001.3NNE16-Jun-193:001.3NNE16-Jun-195:000.9NNE16-Jun-195:000.9NNE16-Jun-197:000.9NNE16-Jun-197:001.3NNE16-Jun-1910:001.3NNE16-Jun-1910:001.3NNE16-Jun-1910:001.3NNE16-Jun-1910:001.3NNE16-Jun-1911:001.8NNE16-Jun-1911:001.8NNE16-Jun-1911:001.8NNE16-Jun-1911:001.8NNE16-Jun-1913:001.8NNE16-Jun-1913:001.8NNE16-Jun-1913:001.8NNE16-Jun-1913:00	15-Jun-19	11:00	1.3	NNE
15-Jun-1914:002.2ENE15-Jun-1915:001.8ENE15-Jun-1916:001.8NNE15-Jun-1917:001.8NNE15-Jun-1918:001.3NNE15-Jun-1919:001.3NNE15-Jun-1920:000.9NNE15-Jun-1921:001.3ENE15-Jun-1922:001.3ENE15-Jun-1923:001.3NNE16-Jun-190:001.3NNE16-Jun-191:001.3NNE16-Jun-191:001.3NNE16-Jun-191:001.3NNE16-Jun-191:001.3NNE16-Jun-193:000.9NNE16-Jun-195:000.9NNE16-Jun-195:000.9NNE16-Jun-197:000.9NNE16-Jun-191:001.3NNE16-Jun-191:001.3NNE16-Jun-191:001.3NNE16-Jun-191:001.3NNE16-Jun-191:001.3NE16-Jun-191:001.3NE16-Jun-1911:001.8NNE16-Jun-1911:001.8NNE16-Jun-1911:001.8NNE16-Jun-1911:001.8NNE16-Jun-1911:001.8NNE16-Jun-1911:001.8NNE16-Jun-1911:00	15-Jun-19	12:00	1.3	NNE
15-Jun-1915:001.8ENE15-Jun-1916:001.8NNE15-Jun-1917:001.8NNE15-Jun-1918:001.3NNE15-Jun-1919:001.3NNE15-Jun-1920:000.9NNE15-Jun-1921:001.3ENE15-Jun-1922:001.3ENE15-Jun-1923:001.3NNE16-Jun-190:001.3NNE16-Jun-190:001.3NNE16-Jun-191:001.3NNE16-Jun-191:001.3NNE16-Jun-191:001.3NNE16-Jun-195:000.9NNE16-Jun-195:000.9NNE16-Jun-195:000.9NNE16-Jun-197:000.9NNE16-Jun-1910:001.3NNE16-Jun-1910:001.3NNE16-Jun-1910:001.3NNE16-Jun-1910:001.3NNE16-Jun-1910:001.3NE16-Jun-1911:001.8NNE16-Jun-1911:001.8NNE16-Jun-1913:001.8NNE16-Jun-1913:001.8NNE16-Jun-1913:001.8NNE16-Jun-1913:001.8NNE16-Jun-1913:001.8NNE16-Jun-1913:001.8NNE16-Jun-1913:00 </td <td>15-Jun-19</td> <td>13:00</td> <td>2.2</td> <td>ENE</td>	15-Jun-19	13:00	2.2	ENE
15-Jun-1916:001.8NNE15-Jun-1917:001.8NNE15-Jun-1918:001.3NNE15-Jun-1919:001.3NNE15-Jun-1920:000.9NNE15-Jun-1921:001.3ENE15-Jun-1922:001.3ENE15-Jun-1923:001.3NNE16-Jun-190:001.3NNE16-Jun-191:001.3NNE16-Jun-191:001.3NNE16-Jun-191:001.3NNE16-Jun-193:001.3NNE16-Jun-193:000.9NNE16-Jun-195:000.9NNE16-Jun-195:000.9NNE16-Jun-197:000.9NNE16-Jun-1910:001.3NNE16-Jun-1910:001.3NNE16-Jun-1910:001.3NNE16-Jun-1910:001.3NNE16-Jun-1910:001.3NNE16-Jun-1910:001.3NNE16-Jun-1911:001.8NNE16-Jun-1911:001.8NNE16-Jun-1913:001.8NNE16-Jun-1913:001.8NNE16-Jun-1913:001.8NNE16-Jun-1915:001.8NNE	15-Jun-19	14:00	2.2	ENE
15-Jun-1917:001.8NNE15-Jun-1918:001.3NNE15-Jun-1919:001.3NNE15-Jun-1920:000.9NNE15-Jun-1921:001.3ENE15-Jun-1922:001.3ENE15-Jun-1923:001.3NNE16-Jun-190:001.3NNE16-Jun-191:001.3NNE16-Jun-191:001.3NNE16-Jun-191:001.3NNE16-Jun-195:000.9NNE16-Jun-195:000.9NNE16-Jun-195:000.9NNE16-Jun-195:000.9NNE16-Jun-195:000.9NNE16-Jun-191:001.3NNE16-Jun-191:001.3NNE16-Jun-191:001.3NNE16-Jun-191:001.3NNE16-Jun-191:001.3NNE16-Jun-191:001.3NNE16-Jun-191:001.3NNE16-Jun-191:001.8NNE16-Jun-191:001.8NNE16-Jun-191:001.8NNE16-Jun-191:001.8NNE16-Jun-191:001.8NNE16-Jun-191:001.8NNE16-Jun-191:001.8NNE16-Jun-191:001.8NNE16-Jun-191:001.8	15-Jun-19	15:00	1.8	ENE
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15-Jun-1921:001.3ENE15-Jun-1922:001.3ENE15-Jun-1923:001.3NNE16-Jun-190:001.3NNE16-Jun-191:001.3NNE16-Jun-192:000.9NNE16-Jun-193:001.3NNE16-Jun-193:001.3NNE16-Jun-195:000.9NNE16-Jun-195:000.9NNE16-Jun-195:000.9NNE16-Jun-196:000.9NNE16-Jun-197:000.9NNE16-Jun-197:000.9NNE16-Jun-191:001.3NNE16-Jun-191:001.3NNE16-Jun-191:001.3NNE16-Jun-1911:001.8NNE16-Jun-1912:001.8NNE16-Jun-1913:001.8NNE16-Jun-1915:001.8NNE	15-Jun-19	19:00	1.3	NNE
15-Jun-1922:001.3ENE15-Jun-1923:001.3NNE16-Jun-190:001.3NNE16-Jun-191:001.3NNE16-Jun-192:000.9NNE16-Jun-193:001.3NNE16-Jun-193:001.3NNE16-Jun-194:000.9NNE16-Jun-195:000.9NNE16-Jun-195:000.9NNE16-Jun-196:000.9NNE16-Jun-197:000.9NNE16-Jun-197:000.9NNE16-Jun-1910:001.3NNE16-Jun-1910:001.3NNE16-Jun-1910:001.3NNE16-Jun-1911:001.8NNE16-Jun-1912:001.8NNE16-Jun-1913:001.8NNE16-Jun-1913:001.8NNE16-Jun-1915:001.8NNE	15-Jun-19	20:00	0.9	NNE
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16-Jun-190:001.3NNE16-Jun-191:001.3NNE16-Jun-192:000.9NNE16-Jun-193:001.3NNE16-Jun-194:000.9NNE16-Jun-195:000.9NNE16-Jun-195:000.9NNE16-Jun-196:000.9NNE16-Jun-197:000.9NNE16-Jun-197:000.9NNE16-Jun-191:001.3NNE16-Jun-1910:001.3NNE16-Jun-1910:001.3NNE16-Jun-1911:001.8NNE16-Jun-1912:001.8NNE16-Jun-1913:001.8NNE16-Jun-1915:001.8NNE	15-Jun-19	22:00	1.3	ENE
16-Jun-191:001.3NNE16-Jun-192:000.9NNE16-Jun-193:001.3NNE16-Jun-194:000.9NNE16-Jun-195:000.9NNE16-Jun-195:000.9NNE16-Jun-196:000.9NNE16-Jun-197:000.9NNE16-Jun-197:000.9NNE16-Jun-197:000.9NNE16-Jun-1910:001.3NNE16-Jun-1910:001.3NE16-Jun-1911:001.8NNE16-Jun-1912:001.8NNE16-Jun-1913:001.8NNE16-Jun-1913:001.8NNE16-Jun-1913:001.8NNE16-Jun-1914:001.3ENE16-Jun-1914:001.3NNE	15-Jun-19	23:00	1.3	NNE
16-Jun-192:000.9NNE16-Jun-193:001.3NNE16-Jun-194:000.9NNE16-Jun-195:000.9NNE16-Jun-196:000.9NNE16-Jun-197:000.9NNE16-Jun-197:000.9NNE16-Jun-198:000.9NNE16-Jun-199:001.3NNE16-Jun-1910:001.3NE16-Jun-1911:001.8NNE16-Jun-1912:001.8NNE16-Jun-1913:001.8NNE16-Jun-1913:001.8NNE16-Jun-1913:001.8NNE16-Jun-1913:001.8NNE16-Jun-1913:001.8NNE16-Jun-1913:001.8NNE	16-Jun-19	0:00	1.3	NNE
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18-Jun-19	11:00	2.2	ENE
18-Jun-19	12:00	1.8	ENE
18-Jun-19	13:00	1.8	SW
18-Jun-19	14:00	1.8	SW
18-Jun-19	15:00	2.7	ENE
18-Jun-19	16:00	3.1	ENE
18-Jun-19	17:00	2.7	ENE
18-Jun-19	18:00	2.2	ENE
18-Jun-19	19:00	0.9	SW
18-Jun-19	20:00	0	NNE
18-Jun-19	21:00	0.4	NE
18-Jun-19	22:00	0.9	ENE
18-Jun-19	23:00	0.9	ENE
19-Jun-19	0:00	0.4	NNE
19-Jun-19	1:00	0.4	NNE
19-Jun-19	2:00	0.4	NNE
19-Jun-19	3:00	0.4	NNE
19-Jun-19	4:00	0.9	NNE
19-Jun-19	5:00	0.4	NNE
19-Jun-19	6:00	0.9	NNE
19-Jun-19	7:00	0.4	NNE
19-Jun-19	8:00	0.9	ENE
19-Jun-19	9:00	0.4	ENE
19-Jun-19	10:00	0.9	SW
19-Jun-19	11:00	0.9	SSW
19-Jun-19	12:00	1.3	ESE
19-Jun-19	13:00	1.3	ENE
19-Jun-19	14:00	1.3	SW
19-Jun-19	15:00	1.3	E
19-Jun-19	16:00	1.3	SSW
19-Jun-19	17:00	1.3	ESE
19-Jun-19	18:00	0.9	ENE
19-Jun-19	19:00	0.9	ESE
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21-Jun-19	17:00	1.3	Е
21-Jun-19	18:00	1.3	SW
21-Jun-19	19:00	0.9	SW
21-Jun-19	20:00	0.9	ENE
21-Jun-19	21:00	0.9	SW
21-Jun-19	22:00	0.9	Е
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25-Jun-197:001.3SW25-Jun-198:000.4SW25-Jun-199:000.4SW25-Jun-1910:000.9SW25-Jun-1911:001.3SW25-Jun-1912:001.3SW25-Jun-1913:001.3SW25-Jun-1913:001.3SW25-Jun-1914:000.9SW25-Jun-1915:000.9SW25-Jun-1916:001.3SW25-Jun-1917:001.3ENE25-Jun-1917:001.3SW25-Jun-1917:001.3SW25-Jun-1912:000.4NE25-Jun-1912:001.3SW25-Jun-1920:000.4NE25-Jun-1910:001.3SW25-Jun-1920:000.4NE25-Jun-1921:000.9SW25-Jun-1922:001.3ENE26-Jun-190:001.3ENE26-Jun-191:001.8ENE26-Jun-193:001.3ENE26-Jun-193:001.3ENE26-Jun-193:001.3ENE	25-Jun-19	5:00	0.4	NE
25-Jun-198:000.4SW25-Jun-199:000.4SW25-Jun-1910:000.9SW25-Jun-1911:001.3SW25-Jun-1912:001.3SW25-Jun-1913:001.3SW25-Jun-1913:000.9SW25-Jun-1914:000.9SW25-Jun-1914:000.9SW25-Jun-1916:001.3SW25-Jun-1916:001.3SW25-Jun-1917:001.3ENE25-Jun-1918:001.8SW25-Jun-1919:000.9SW25-Jun-1919:001.3SW25-Jun-1920:000.4NE25-Jun-1921:000.9SW25-Jun-1921:001.3ENE26-Jun-190:001.3ENE26-Jun-191:001.3ENE26-Jun-193:001.3ENE26-Jun-193:001.3ENE	25-Jun-19	6:00	1.3	NE
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25-Jun-1910:000.9SW25-Jun-1911:001.3SW25-Jun-1912:001.3SW25-Jun-1913:001.3SW25-Jun-1914:000.9SW25-Jun-1915:000.9SW25-Jun-1916:001.3SW25-Jun-1917:001.3ENE25-Jun-1917:001.3SW25-Jun-1917:001.3SW25-Jun-1919:001.3SW25-Jun-1919:001.3SW25-Jun-1920:000.4NE25-Jun-1921:000.9SW25-Jun-1921:001.3ENE26-Jun-190:001.3ENE26-Jun-191:001.8ENE26-Jun-193:001.3ENE26-Jun-193:001.3ENE26-Jun-193:001.3ENE	25-Jun-19	8:00	0.4	SW
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25-Jun-1912:001.3SW25-Jun-1913:001.3SW25-Jun-1914:000.9SW25-Jun-1915:000.9SW25-Jun-1916:001.3SW25-Jun-1917:001.3ENE25-Jun-1918:001.8SW25-Jun-1919:001.3SW25-Jun-1920:000.4NE25-Jun-1921:000.9SW25-Jun-1921:001.3ENE26-Jun-190:001.3ENE26-Jun-191:001.3ENE26-Jun-191:001.3ENE26-Jun-193:001.3ENE26-Jun-193:001.3ENE26-Jun-193:001.3ENE26-Jun-193:001.3ENE26-Jun-193:001.3ENE	25-Jun-19	10:00	0.9	SW
25-Jun-1913:001.3SW25-Jun-1914:000.9SW25-Jun-1915:000.9SW25-Jun-1916:001.3SW25-Jun-1917:001.3ENE25-Jun-1918:001.8SW25-Jun-1919:001.3SW25-Jun-1920:000.4NE25-Jun-1921:000.9SW25-Jun-1921:000.4NE25-Jun-1921:001.3ENE25-Jun-1921:001.3ENE26-Jun-190:001.3ENE26-Jun-191:001.3ENE26-Jun-192:001.3ENE26-Jun-193:001.3ENE26-Jun-193:001.3ENE26-Jun-193:001.3ENE	25-Jun-19	11:00	1.3	SW
25-Jun-1914:000.9SW25-Jun-1915:000.9SW25-Jun-1916:001.3SW25-Jun-1917:001.3ENE25-Jun-1918:001.8SW25-Jun-1919:001.3SW25-Jun-1920:000.4NE25-Jun-1921:000.9SW25-Jun-1921:001.3ENE26-Jun-190:001.3ENE26-Jun-191:001.8ENE26-Jun-192:001.3ENE26-Jun-193:001.3ENE26-Jun-193:001.3ENE26-Jun-193:001.3ENE	25-Jun-19	12:00	1.3	SW
25-Jun-1915:000.9SW25-Jun-1916:001.3SW25-Jun-1917:001.3ENE25-Jun-1918:001.8SW25-Jun-1919:001.3SW25-Jun-1920:000.4NE25-Jun-1921:000.9SW25-Jun-1922:001.3SW25-Jun-1921:000.9SW25-Jun-1922:001.3ENE26-Jun-190:001.3ENE26-Jun-191:001.8ENE26-Jun-192:001.3ENE26-Jun-193:001.3ENE26-Jun-193:001.3ENE	25-Jun-19	13:00	1.3	SW
25-Jun-1916:001.3SW25-Jun-1917:001.3ENE25-Jun-1918:001.8SW25-Jun-1919:001.3SW25-Jun-1920:000.4NE25-Jun-1921:000.9SW25-Jun-1922:001.3SW25-Jun-1922:001.3ENE26-Jun-190:001.3ENE26-Jun-191:001.8ENE26-Jun-193:001.3ENE26-Jun-191:001.8ENE26-Jun-191:001.3ENE26-Jun-193:001.3ENE	25-Jun-19	14:00	0.9	SW
25-Jun-1917:001.3ENE25-Jun-1918:001.8SW25-Jun-1919:001.3SW25-Jun-1920:000.4NE25-Jun-1921:000.9SW25-Jun-1922:001.3SW25-Jun-1922:001.3ENE26-Jun-190:001.3ENE26-Jun-191:001.8ENE26-Jun-193:001.3ENE26-Jun-193:001.3ENE	25-Jun-19	15:00	0.9	SW
25-Jun-1918:001.8SW25-Jun-1919:001.3SW25-Jun-1920:000.4NE25-Jun-1921:000.9SW25-Jun-1922:001.3SW25-Jun-1923:001.3ENE26-Jun-190:001.3ENE26-Jun-191:001.8ENE26-Jun-193:001.3ENE	25-Jun-19	16:00	1.3	SW
25-Jun-1919:001.3SW25-Jun-1920:000.4NE25-Jun-1921:000.9SW25-Jun-1922:001.3SW25-Jun-1923:001.3ENE26-Jun-190:001.3ENE26-Jun-191:001.8ENE26-Jun-192:001.3ENE26-Jun-193:001.3ENE	25-Jun-19	17:00	1.3	ENE
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25-Jun-1923:001.3ENE26-Jun-190:001.3ENE26-Jun-191:001.8ENE26-Jun-192:001.3ENE26-Jun-193:001.3ENE	25-Jun-19	21:00	0.9	SW
26-Jun-190:001.3ENE26-Jun-191:001.8ENE26-Jun-192:001.3ENE26-Jun-193:001.3ENE	25-Jun-19	22:00	1.3	SW
26-Jun-191:001.8ENE26-Jun-192:001.3ENE26-Jun-193:001.3ENE	25-Jun-19	23:00	1.3	ENE
26-Jun-19 2:00 1.3 ENE 26-Jun-19 3:00 1.3 ENE	26-Jun-19	0:00	1.3	ENE
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	26-Jun-19	2:00	1.3	ENE
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26-Jun-19 5:00 0.9 NE 26-Jun-19 6:00 0.9 NNE 26-Jun-19 7:00 0.9 NNE 26-Jun-19 8:00 1.3 ENE 26-Jun-19 9:00 0.9 SW 26-Jun-19 10:00 1.8 ENE 26-Jun-19 11:00 1.3 NNE 26-Jun-19 13:00 1.3 SSW 26-Jun-19 13:00 1.3 SSW 26-Jun-19 14:00 0.9 ENE 26-Jun-19 16:00 3.1 ENE 26-Jun-19 16:00 3.1 ENE 26-Jun-19 17:00 1.8 ENE 26-Jun-19 20:00 1.3 NE 26-Jun-19 20:00 1.3 NE 26-Jun-19 20:00 1.3 NE 26-Jun-19 20:00 1.3 ENE 27-Jun-19 0:00 1.3 ENE 27-Jun-19 0:00				
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26-Jun-1914:000.9ENE26-Jun-1915:000.9NNE26-Jun-1916:003.1ENE26-Jun-1917:001.8ENE26-Jun-1917:001.8NE26-Jun-1919:001.3NE26-Jun-1920:001.3NE26-Jun-1921:001.3NE26-Jun-1922:001.3NE26-Jun-1923:000.9NNE27-Jun-190:001.3ENE27-Jun-191:001.3ENE27-Jun-191:001.3ENE27-Jun-191:001.3ENE27-Jun-191:001.3ENE27-Jun-193:000.9NE27-Jun-195:001.3ENE27-Jun-195:001.3ENE27-Jun-195:001.3ENE27-Jun-199:001.3ENE27-Jun-1910:001.3ENE27-Jun-1910:001.3ENE27-Jun-1910:001.3ENE27-Jun-1910:001.3ENE27-Jun-1911:002.7ENE27-Jun-1913:001.3ENE27-Jun-1913:001.3ENE27-Jun-1914:001.3ENE27-Jun-1915:002.2ENE27-Jun-1917:001.3ENE27-Jun-1917:001.3ENE	26-Jun-19	12:00	2.2	ENE
26-Jun-1915:000.9NNE26-Jun-1916:003.1ENE26-Jun-1917:001.8ENE26-Jun-1918:001.8NE26-Jun-1919:001.3NE26-Jun-1920:001.3NE26-Jun-1921:001.3NE26-Jun-1922:001.3NE26-Jun-1922:001.3NE26-Jun-1923:000.9NNE27-Jun-190:001.3ENE27-Jun-190:001.3ENE27-Jun-191:001.3ENE27-Jun-193:000.9NE27-Jun-193:000.9NE27-Jun-193:000.9NE27-Jun-195:001.3ENE27-Jun-195:001.3ENE27-Jun-197:000.4NE27-Jun-197:000.4NE27-Jun-1910:001.3ENE27-Jun-1910:001.3ENE27-Jun-1910:001.3ENE27-Jun-1911:002.7ENE27-Jun-1911:002.7ENE27-Jun-1913:001.3ENE27-Jun-1914:001.3ENE27-Jun-1915:002.2ENE27-Jun-1916:002.2ENE27-Jun-1917:001.3ENE	26-Jun-19	13:00	1.3	SSW
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26-Jun-1917:001.8ENE 26 -Jun-1918:001.8NE 26 -Jun-1919:001.3NE 26 -Jun-1920:001.3NE 26 -Jun-1921:001.3NE 26 -Jun-1921:001.3NE 26 -Jun-1922:001.3NE 26 -Jun-1923:000.9NNE 27 -Jun-190:001.3ENE 27 -Jun-190:001.3ENE 27 -Jun-191:001.3ENE 27 -Jun-192:001.8ENE 27 -Jun-193:000.9NE 27 -Jun-195:001.3ENE 27 -Jun-195:001.3ENE 27 -Jun-195:001.3ENE 27 -Jun-197:000.4NE 27 -Jun-197:001.3ENE 27 -Jun-191:001.3ENE 27 -Jun-191:001.3ENE 27 -Jun-191:001.3ENE 27 -Jun-191:001.3ENE 27 -Jun-191:002.7ENE 27 -Jun-1911:002.7ENE 27 -Jun-1916:001.3ENE 27 -Jun-1915:002.2ENE 27 -Jun-1915:002.2ENE 27 -Jun-1917:001.3ENE	26-Jun-19	15:00	0.9	NNE
26-Jun-1918:001.8NE26-Jun-1919:001.3NE26-Jun-1920:001.3NE26-Jun-1921:001.3NE26-Jun-1922:001.3NE26-Jun-1922:001.3NE26-Jun-1923:000.9NNE27-Jun-190:001.3ENE27-Jun-191:001.3ENE27-Jun-192:001.8ENE27-Jun-193:000.9NE27-Jun-193:000.9NE27-Jun-195:001.3ENE27-Jun-195:001.3ENE27-Jun-195:001.3ENE27-Jun-197:000.4NE27-Jun-197:001.3ENE27-Jun-1910:001.3ENE27-Jun-1910:001.3ENE27-Jun-1910:001.3ENE27-Jun-1910:001.3ENE27-Jun-1911:002.7ENE27-Jun-1911:002.7ENE27-Jun-1913:001.3ENE27-Jun-1914:001.3ENE27-Jun-1915:002.2ENE27-Jun-1916:002.2ENE27-Jun-1917:001.3ENE	26-Jun-19	16:00	3.1	ENE
26-Jun-1919:001.3NE26-Jun-1920:001.3NE26-Jun-1921:001.3NE26-Jun-1922:001.3NE26-Jun-1922:001.3NE26-Jun-1923:000.9NNE27-Jun-190:001.3ENE27-Jun-191:001.3ENE27-Jun-191:001.3ENE27-Jun-192:001.8ENE27-Jun-193:000.9NE27-Jun-195:001.3ENE27-Jun-195:001.3ENE27-Jun-196:001.3ENE27-Jun-197:000.4NE27-Jun-199:001.3ENE27-Jun-1910:001.3ENE27-Jun-1910:001.3ENE27-Jun-1910:001.3ENE27-Jun-1910:001.3ENE27-Jun-1910:001.3ENE27-Jun-1911:002.7ENE27-Jun-1913:001.3ENE27-Jun-1914:001.3ENE27-Jun-1914:001.3ENE27-Jun-1916:002.2ENE27-Jun-1917:001.3ENE	26-Jun-19	17:00	1.8	ENE
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27-Jun-190:001.3ENE27-Jun-191:001.3ENE27-Jun-192:001.8ENE27-Jun-193:000.9NE27-Jun-194:000.9NNE27-Jun-195:001.3ENE27-Jun-195:001.3ENE27-Jun-196:001.3ENE27-Jun-197:000.4NE27-Jun-199:001.3ENE27-Jun-199:001.3ENE27-Jun-1910:001.3ENE27-Jun-1910:001.3ENE27-Jun-1911:002.7ENE27-Jun-1912:001.8ENE27-Jun-1913:001.3ENE27-Jun-1913:001.3ENE27-Jun-1913:001.3ENE27-Jun-1913:001.3ENE27-Jun-1914:001.3ENE27-Jun-1915:002.2ENE27-Jun-1916:001.3ENE27-Jun-1917:001.3ENE	26-Jun-19	22:00	1.3	NE
27-Jun-191:001.3ENE27-Jun-192:001.8ENE27-Jun-193:000.9NE27-Jun-194:000.9NNE27-Jun-195:001.3ENE27-Jun-195:001.3ENE27-Jun-196:001.3ENE27-Jun-197:000.4NE27-Jun-198:000.9SW27-Jun-199:001.3ENE27-Jun-1910:001.3ENE27-Jun-1911:002.7ENE27-Jun-1913:001.3ENE27-Jun-1913:001.3ENE27-Jun-1913:001.3ENE27-Jun-1913:001.3ENE27-Jun-1914:001.3ENE27-Jun-1915:002.2ENE27-Jun-1916:002.2ENE27-Jun-1917:001.3ENE	26-Jun-19	23:00	0.9	NNE
27-Jun-192:001.8ENE27-Jun-193:000.9NE27-Jun-194:000.9NNE27-Jun-195:001.3ENE27-Jun-196:001.3ENE27-Jun-197:000.4NE27-Jun-198:000.9SW27-Jun-199:001.3ENE27-Jun-1910:001.3ENE27-Jun-1910:001.3ENE27-Jun-1911:002.7ENE27-Jun-1911:001.3ENE27-Jun-1913:001.3ENE27-Jun-1913:001.3ENE27-Jun-1913:001.3ENE27-Jun-1913:001.3ENE27-Jun-1914:001.3ENE27-Jun-1915:002.2ENE27-Jun-1917:001.3ENE	27-Jun-19	0:00	1.3	ENE
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27-Jun-194:000.9NNE27-Jun-195:001.3ENE27-Jun-196:001.3ENE27-Jun-197:000.4NE27-Jun-198:000.9SW27-Jun-199:001.3ENE27-Jun-1910:001.3ENE27-Jun-1911:002.7ENE27-Jun-1911:001.3ENE27-Jun-1912:001.8ENE27-Jun-1913:001.3ENE27-Jun-1913:001.3ENE27-Jun-1914:001.3ENE27-Jun-1915:002.2ENE27-Jun-1916:002.2ENE27-Jun-1917:001.3ENE	27-Jun-19	2:00	1.8	ENE
27-Jun-195:001.3ENE27-Jun-196:001.3ENE27-Jun-197:000.4NE27-Jun-198:000.9SW27-Jun-199:001.3ENE27-Jun-1910:001.3ENE27-Jun-1911:002.7ENE27-Jun-1911:001.3ENE27-Jun-1911:002.7ENE27-Jun-1912:001.8ENE27-Jun-1913:001.3ENE27-Jun-1914:001.3ENE27-Jun-1915:002.2ENE27-Jun-1916:001.3ENE27-Jun-1917:001.3ENE	27-Jun-19	3:00	0.9	NE
27-Jun-196:001.3ENE27-Jun-197:000.4NE27-Jun-198:000.9SW27-Jun-199:001.3ENE27-Jun-1910:001.3ENE27-Jun-1911:002.7ENE27-Jun-1911:001.3ENE27-Jun-1912:001.8ENE27-Jun-1913:001.3ENE27-Jun-1913:001.3ENE27-Jun-1914:001.3ENE27-Jun-1915:002.2ENE27-Jun-1916:002.2ENE27-Jun-1917:001.3ENE	27-Jun-19	4:00	0.9	NNE
27-Jun-197:000.4NE27-Jun-198:000.9SW27-Jun-199:001.3ENE27-Jun-1910:001.3ENE27-Jun-1911:002.7ENE27-Jun-1912:001.8ENE27-Jun-1913:001.3ENE27-Jun-1914:001.3ENE27-Jun-1915:002.2ENE27-Jun-1916:001.3ENE27-Jun-1917:001.3ENE	27-Jun-19	5:00	1.3	ENE
27-Jun-198:000.9SW27-Jun-199:001.3ENE27-Jun-1910:001.3ENE27-Jun-1911:002.7ENE27-Jun-1912:001.8ENE27-Jun-1913:001.3ENE27-Jun-1914:001.3ENE27-Jun-1915:002.2ENE27-Jun-1916:001.3ENE27-Jun-1916:001.3ENE	27-Jun-19	6:00	1.3	ENE
27-Jun-199:001.3ENE27-Jun-1910:001.3ENE27-Jun-1911:002.7ENE27-Jun-1912:001.8ENE27-Jun-1913:001.3ENE27-Jun-1914:001.3ENE27-Jun-1915:002.2ENE27-Jun-1916:002.2ENE27-Jun-1917:001.3ENE	27-Jun-19	7:00	0.4	NE
27-Jun-1910:001.3ENE27-Jun-1911:002.7ENE27-Jun-1912:001.8ENE27-Jun-1913:001.3ENE27-Jun-1914:001.3ENE27-Jun-1915:002.2ENE27-Jun-1916:002.2ENE27-Jun-1917:001.3ENE	27-Jun-19	8:00	0.9	SW
27-Jun-1911:002.7ENE27-Jun-1912:001.8ENE27-Jun-1913:001.3ENE27-Jun-1914:001.3ENE27-Jun-1915:002.2ENE27-Jun-1916:002.2ENE27-Jun-1917:001.3ENE	27-Jun-19	9:00	1.3	ENE
27-Jun-1912:001.8ENE27-Jun-1913:001.3ENE27-Jun-1914:001.3ENE27-Jun-1915:002.2ENE27-Jun-1916:002.2ENE27-Jun-1917:001.3ENE	27-Jun-19	10:00	1.3	ENE
27-Jun-1913:001.3ENE27-Jun-1914:001.3ENE27-Jun-1915:002.2ENE27-Jun-1916:002.2ENE27-Jun-1917:001.3ENE	27-Jun-19	11:00	2.7	ENE
27-Jun-1914:001.3ENE27-Jun-1915:002.2ENE27-Jun-1916:002.2ENE27-Jun-1917:001.3ENE	27-Jun-19	12:00	1.8	ENE
27-Jun-1915:002.2ENE27-Jun-1916:002.2ENE27-Jun-1917:001.3ENE	27-Jun-19	13:00	1.3	ENE
27-Jun-1916:002.2ENE27-Jun-1917:001.3ENE	27-Jun-19	14:00	1.3	ENE
27-Jun-19 17:00 1.3 ENE	27-Jun-19	15:00	2.2	ENE
	27-Jun-19	16:00	2.2	ENE
27-Jun-19 18:00 2.2 ENE	27-Jun-19	17:00	1.3	ENE
	27-Jun-19	18:00	2.2	ENE

27-Jun-19 19:00 1.8 NE 27-Jun-19 20:00 1.3 ENE 27-Jun-19 21:00 0.9 NNE 27-Jun-19 22:00 1.3 NE 27-Jun-19 22:00 0.9 NNE 28-Jun-19 0:00 0.9 ENE 28-Jun-19 1:00 1.3 NE 28-Jun-19 0:00 0.9 ENE 28-Jun-19 3:00 0.9 ENE 28-Jun-19 3:00 0.9 ENE 28-Jun-19 5:00 0.9 ENE 28-Jun-19 6:00 0.4 NE 28-Jun-19 7:00 0.9 ENE 28-Jun-19 7:00 0.9 ENE 28-Jun-19 10:00 1.3 ENE 28-Jun-19 11:00 1.8 ENE 28-Jun-19 12:00 1.8 SSW 28-Jun-19 16:00 1.8 SSW 28-Jun-19 16:00		1		
27-Jun-1921:000.9NNE27-Jun-1922:001.3NE27-Jun-1923:000.9NNE28-Jun-190:000.9ENE28-Jun-191:001.3NE28-Jun-192:000.4NE28-Jun-193:000.9ENE28-Jun-193:000.9ENE28-Jun-195:000.9ENE28-Jun-195:000.9SW28-Jun-196:000.4NNE28-Jun-197:000.9SW28-Jun-199:000.4NE28-Jun-199:000.9ENE28-Jun-199:000.9ENE28-Jun-1911:001.3ENE28-Jun-1911:001.8ENE28-Jun-1913:001.8ENE28-Jun-1915:002.7ENE28-Jun-1916:001.3SSW28-Jun-1917:001.3SSW28-Jun-1912:000.4NNE28-Jun-1912:000.4NNE28-Jun-1910:000.4NNE28-Jun-1910:000.4NNE28-Jun-1910:000.4NNE28-Jun-1910:000.4NNE29-Jun-192:000.4NNE29-Jun-192:000.4NNE29-Jun-191:000.4NNE29-Jun-191:000.4NNE29-Jun-191:000.4 <td>27-Jun-19</td> <td>19:00</td> <td>1.8</td> <td>NE</td>	27-Jun-19	19:00	1.8	NE
27-Jun-1922:001.3NE27-Jun-1923:000.9NNE28-Jun-190:000.9ENE28-Jun-191:001.3NE28-Jun-192:000.4NE28-Jun-193:000.9ENE28-Jun-194:000.9SSW28-Jun-195:000.9ENE28-Jun-195:000.9ENE28-Jun-196:000.4NNE28-Jun-199:000.9SW28-Jun-199:000.9ENE28-Jun-199:000.9ENE28-Jun-1910:001.3ENE28-Jun-1911:001.8ENE28-Jun-1911:001.8ENE28-Jun-1913:002.7ENE28-Jun-1916:000.4NNE28-Jun-1917:001.3SSW28-Jun-1912:000.4NNE28-Jun-1912:000.4NNE28-Jun-1916:001.8SSW28-Jun-1910:000.4NNE28-Jun-1910:000.4NNE28-Jun-1910:000.4NNE28-Jun-192:000.4NNE29-Jun-192:000.4NNE29-Jun-191:000.4NNE29-Jun-191:000.4NNE29-Jun-191:000.4NNE29-Jun-191:000.4NNE29-Jun-191:000.4 </td <td>27-Jun-19</td> <td>20:00</td> <td>1.3</td> <td>ENE</td>	27-Jun-19	20:00	1.3	ENE
27-Jun-1923:000.9NNE28-Jun-190:000.9ENE28-Jun-191:001.3NE28-Jun-192:000.4NE28-Jun-193:000.9ENE28-Jun-194:000.9SSW28-Jun-195:000.9ENE28-Jun-196:000.4NNE28-Jun-196:000.4NNE28-Jun-197:000.9SW28-Jun-199:000.9ENE28-Jun-199:000.9ENE28-Jun-1910:001.3ENE28-Jun-1911:001.8ENE28-Jun-1911:001.8ENE28-Jun-1913:001.8ENE28-Jun-1915:002.7ENE28-Jun-1916:001.3SSW28-Jun-1917:001.3SSW28-Jun-1912:000.4NNE28-Jun-1912:000.4NNE28-Jun-1910:000.4NNE28-Jun-1920:000.4NNE28-Jun-1920:000.4NNE29-Jun-1920:000.4NNE29-Jun-193:000.4NNE29-Jun-193:000.4NNE29-Jun-193:000.4NNE29-Jun-193:000.4NNE29-Jun-195:000.9NNE29-Jun-195:000.9NNE29-Jun-195:000.9<	27-Jun-19	21:00	0.9	NNE
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28-Jun-196:000.4NNE28-Jun-197:000.9SW28-Jun-198:000.4NE28-Jun-199:000.9ENE28-Jun-1910:001.3ENE28-Jun-1911:001.8ENE28-Jun-1911:001.8ENE28-Jun-1912:001.8ENE28-Jun-1913:001.8ENE28-Jun-1914:003.1ENE28-Jun-1915:002.7ENE28-Jun-1916:001.8SSW28-Jun-1917:001.3SSW28-Jun-1912:000.4NNE28-Jun-1919:000.4NNE28-Jun-1919:000.4NNE28-Jun-1921:000.4NNE29-Jun-192:000.4NNE29-Jun-193:000.4NNE29-Jun-191:000.4NNE29-Jun-195:000.4NNE29-Jun-195:000.9NNE29-Jun-195:000.9NNE29-Jun-195:000.4NNE29-Jun-195:000.4NNE29-Jun-195:000.4NNE29-Jun-195:000.4NNE29-Jun-195:000.4NNE29-Jun-195:000.4NNE29-Jun-197:000.4ENE	28-Jun-19	4:00	0.9	SSW
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28-Jun-1912:001.8ENE28-Jun-1913:001.8ENE28-Jun-1914:003.1ENE28-Jun-1915:002.7ENE28-Jun-1916:001.8SSW28-Jun-1917:001.3SSW28-Jun-1917:000.4NNE28-Jun-1919:000.4NNE28-Jun-1920:000.4NNE28-Jun-1921:000.9NNE28-Jun-1922:000.4NNE28-Jun-1921:000.9NNE28-Jun-1923:000.4NNE29-Jun-190:000.9NNE29-Jun-191:000.4NNE29-Jun-191:000.4NNE29-Jun-195:000.4NNE29-Jun-195:000.9NNE29-Jun-195:000.9NNE29-Jun-195:000.9NNE29-Jun-197:000.4ENE	28-Jun-19	10:00	1.3	ENE
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28-Jun-1916:001.8SSW28-Jun-1917:001.3SSW28-Jun-1918:000.4NNE28-Jun-1919:000.4NNE28-Jun-1920:000.4NNE28-Jun-1921:000.9NNE28-Jun-1922:000.4NNE28-Jun-1923:000.4NNE29-Jun-190:000.9NNE29-Jun-191:000.4NNE29-Jun-193:000.4NNE29-Jun-193:000.4NNE29-Jun-195:000.9NNE29-Jun-195:000.9NNE29-Jun-197:000.4NE	28-Jun-19	14:00	3.1	ENE
28-Jun-1917:001.3SSW28-Jun-1918:000.4NNE28-Jun-1919:000.4NNE28-Jun-1920:000.4NNE28-Jun-1921:000.9NNE28-Jun-1922:000.4NNE28-Jun-1923:000.4NNE29-Jun-190:000.9NNE29-Jun-191:000.4NNE29-Jun-191:000.4NNE29-Jun-195:000.4NNE29-Jun-195:000.9NNE29-Jun-195:000.9NNE29-Jun-197:000.4NE	28-Jun-19	15:00	2.7	ENE
28-Jun-1918:000.4NNE28-Jun-1919:000.4NNE28-Jun-1920:000.4NNE28-Jun-1921:000.9NNE28-Jun-1922:000.4NNE28-Jun-1923:000.4NNE29-Jun-190:000.9NNE29-Jun-191:000.4NE29-Jun-191:000.4NE29-Jun-195:000.4NNE29-Jun-195:000.9NNE29-Jun-195:000.4NE29-Jun-195:000.4NE29-Jun-197:000.4NE	28-Jun-19	16:00	1.8	SSW
28-Jun-1919:000.4NNE28-Jun-1920:000.4NNE28-Jun-1921:000.9NNE28-Jun-1922:000.4NNE28-Jun-1923:000.4NNE29-Jun-190:000.9NNE29-Jun-191:000.4NE29-Jun-193:000.4NNE29-Jun-193:000.4NNE29-Jun-193:000.4NNE29-Jun-194:001.3NE29-Jun-195:000.9NNE29-Jun-195:000.4N29-Jun-197:000.4ENE	28-Jun-19	17:00	1.3	SSW
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28-Jun-1921:000.9NNE28-Jun-1922:000.4NNE28-Jun-1923:000.4NNE29-Jun-190:000.9NNE29-Jun-191:000.4NE29-Jun-192:000.4NNE29-Jun-193:000.4NNE29-Jun-195:000.4NNE29-Jun-195:000.9NNE29-Jun-195:000.9NNE29-Jun-195:000.4NE29-Jun-195:000.4NE29-Jun-197:000.4ENE	28-Jun-19	19:00	0.4	NNE
28-Jun-1922:000.4NNE28-Jun-1923:000.4NNE29-Jun-190:000.9NNE29-Jun-191:000.4NE29-Jun-192:000.4NNE29-Jun-193:000.4NNE29-Jun-193:000.4NNE29-Jun-196:000.9NNE29-Jun-197:000.4NE	28-Jun-19	20:00	0.4	NNE
28-Jun-1923:000.4NNE29-Jun-190:000.9NNE29-Jun-191:000.4NE29-Jun-192:000.4NNE29-Jun-193:000.4NNE29-Jun-194:001.3NE29-Jun-195:000.9NNE29-Jun-195:000.4N29-Jun-197:000.4ENE	28-Jun-19	21:00	0.9	NNE
29-Jun-190:000.9NNE29-Jun-191:000.4NE29-Jun-192:000.4NNE29-Jun-193:000.4NNE29-Jun-194:001.3NE29-Jun-195:000.9NNE29-Jun-196:000.4N29-Jun-197:000.4ENE	28-Jun-19	22:00	0.4	NNE
29-Jun-191:000.4NE29-Jun-192:000.4NNE29-Jun-193:000.4NNE29-Jun-194:001.3NE29-Jun-195:000.9NNE29-Jun-196:000.4N29-Jun-197:000.4ENE	28-Jun-19	23:00	0.4	NNE
29-Jun-192:000.4NNE29-Jun-193:000.4NNE29-Jun-194:001.3NE29-Jun-195:000.9NNE29-Jun-196:000.4N29-Jun-197:000.4ENE	29-Jun-19	0:00	0.9	NNE
29-Jun-193:000.4NNE29-Jun-194:001.3NE29-Jun-195:000.9NNE29-Jun-196:000.4N29-Jun-197:000.4ENE	29-Jun-19	1:00	0.4	NE
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29-Jun-195:000.9NNE29-Jun-196:000.4N29-Jun-197:000.4ENE	29-Jun-19	3:00	0.4	NNE
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29-Jun-1923:001.3NNE30-Jun-190:001.3NNE30-Jun-191:001.3NNE30-Jun-192:000.9NNE30-Jun-193:001.3ENE30-Jun-193:001.3ENE30-Jun-194:000.9NNE30-Jun-195:000.9NNE30-Jun-195:000.9NNE30-Jun-196:000.4S30-Jun-197:000.9SSE30-Jun-197:000.9S30-Jun-1910:001.8NNE30-Jun-1911:001.3NNE30-Jun-1911:001.3NNE30-Jun-1912:001.3NNE30-Jun-1913:001.8NNE30-Jun-1915:000.9NNE30-Jun-1915:001.3NNE30-Jun-1915:001.3NNE30-Jun-1912:001.3NE30-Jun-1912:001.3NE30-Jun-1912:001.3NE30-Jun-1912:001.3NE30-Jun-1912:001.3NE30-Jun-1912:001.3NE30-Jun-1912:001.3NE30-Jun-1912:001.3NE30-Jun-1912:001.3NE30-Jun-1921:001.3NE	29-Jun-19	21:00	1.3	NNE
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30-Jun-193:001.3ENE30-Jun-194:000.9NNE30-Jun-195:000.9NNE30-Jun-196:000.4S30-Jun-197:000.9SSE30-Jun-198:000.9S30-Jun-199:000.9NNE30-Jun-1910:001.8NNE30-Jun-1911:001.3NNE30-Jun-1912:001.3NNE30-Jun-1913:001.8NNE30-Jun-1914:001.3NNE30-Jun-1915:000.9NNE30-Jun-1916:003.1ENE30-Jun-1917:001.8ENE30-Jun-1917:001.8NE30-Jun-1917:001.8NE30-Jun-1912:001.3NE30-Jun-1912:001.3NE30-Jun-1912:001.3NE30-Jun-1912:001.3NE30-Jun-1912:001.3NE30-Jun-1912:001.3NE	30-Jun-19	1:00	1.3	NNE
30-Jun-194:000.9NNE30-Jun-195:000.9NNE30-Jun-196:000.4S30-Jun-197:000.9SSE30-Jun-198:000.9S30-Jun-199:000.9NNE30-Jun-1910:001.8NNE30-Jun-1911:001.3NNE30-Jun-1912:001.3NNE30-Jun-1913:001.8NNE30-Jun-1913:001.8NNE30-Jun-1913:001.8NNE30-Jun-1914:001.3NNE30-Jun-1915:000.9NNE30-Jun-1916:003.1ENE30-Jun-1917:001.8ENE30-Jun-1918:001.3NE30-Jun-1919:001.3NE30-Jun-1919:001.3NE30-Jun-1919:001.3NE30-Jun-1919:001.3NE30-Jun-1919:001.3NE	30-Jun-19	2:00	0.9	NNE
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30-Jun-1912:001.3NNE30-Jun-1913:001.8NNE30-Jun-1914:001.3NNE30-Jun-1915:000.9NNE30-Jun-1916:003.1ENE30-Jun-1917:001.8ENE30-Jun-1917:001.8NE30-Jun-1919:001.3NE30-Jun-1919:001.3NE30-Jun-1919:001.3NE30-Jun-1920:001.3NE30-Jun-1921:001.3NE	30-Jun-19	10:00	1.8	NNE
30-Jun-1913:001.8NNE30-Jun-1914:001.3NNE30-Jun-1915:000.9NNE30-Jun-1916:003.1ENE30-Jun-1917:001.8ENE30-Jun-1918:001.8NE30-Jun-1919:001.3NE30-Jun-1920:001.3NE30-Jun-1921:001.3NE	30-Jun-19	11:00	1.3	NNE
30-Jun-1914:001.3NNE30-Jun-1915:000.9NNE30-Jun-1916:003.1ENE30-Jun-1917:001.8ENE30-Jun-1918:001.8NE30-Jun-1919:001.3NE30-Jun-1920:001.3NE30-Jun-1921:001.3NE	30-Jun-19	12:00	1.3	NNE
30-Jun-1915:000.9NNE30-Jun-1916:003.1ENE30-Jun-1917:001.8ENE30-Jun-1918:001.8NE30-Jun-1919:001.3NE30-Jun-1920:001.3NE30-Jun-1921:001.3NE	30-Jun-19	13:00	1.8	NNE
30-Jun-19 16:00 3.1 ENE 30-Jun-19 17:00 1.8 ENE 30-Jun-19 18:00 1.8 NE 30-Jun-19 19:00 1.3 NE 30-Jun-19 20:00 1.3 NE 30-Jun-19 21:00 1.3 NE	30-Jun-19	14:00	1.3	NNE
30-Jun-19 17:00 1.8 ENE 30-Jun-19 18:00 1.8 NE 30-Jun-19 19:00 1.3 NE 30-Jun-19 20:00 1.3 NE 30-Jun-19 20:00 1.3 NE 30-Jun-19 21:00 1.3 NE	30-Jun-19	15:00	0.9	NNE
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30-Jun-1919:001.3NE30-Jun-1920:001.3NE30-Jun-1921:001.3NE	30-Jun-19	17:00	1.8	ENE
30-Jun-1920:001.3NE30-Jun-1921:001.3NE	30-Jun-19	18:00	1.8	NE
30-Jun-19 21:00 1.3 NE	30-Jun-19	19:00	1.3	NE
	30-Jun-19	20:00	1.3	NE
30-Jun-19 22:00 1.3 NE	30-Jun-19	21:00	1.3	NE
	30-Jun-19	22:00	1.3	NE

30-Jun-19	23:00	0.9	NNE
50 Juli 17	23.00	0.7	

APPENDIX D ENVIRONMENTAL MONITORING SCHEDULES

Contract No. KLN/2016/04 Environmental Monitoring Works for Contract No. KL/2015/02 Kai Tak Development –Stage 5A Infrastructure at Former North Apron Area Impact Air and Noise Monitoring Schedule for June 2019

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	27-May	28-May	29-May	30-May	31-May	1-Jun
2-Jun	3-Jun	4-Jun	5-Jun	6-Jun	7-Jun	8-Jun
2 oun	5 Juli	i sui	1-hr TSP x 3 [AM2]	0 Juli	/ Juli	0 Juli
		24-hr TSP [AM2(A)]				
			Noise [M3, M4 &			
			M5(C)]			
9-Jun	10-Jun	11-Jun	12-Jun	13-Jun	14-Jun	15-Jun
		1-hr TSP x 3 [AM2]				
	24-hr TSP [AM2(A)]	N . DA2 MA 9				24-hr TSP [AM2(A)]
		Noise [M3, M4 &				
16-Jun	17-Jun	M5(C)] 18-Jun	19-Jun	20-Jun	21-Jun	22-Jun
10-Juli	1-hr TSP x 3 [AM2]	10-Juli	19-Juli	20-Juli	1-hr TSP x 3 [AM2]	22-Juli
					24-hr TSP [AM2(A)]	
	Noise [M3, M4 &					
	M5(C)]					
23-Jun	24-Jun	25-Jun	26-Jun		28-Jun	29-Jun
				1-hr TSP x 3 [AM2]		
				24-hr TSP [AM2(A)]		
					Noise [M3, M4 &	
					M5(C)]	

* The noise level limit is 65dB(A) during the exam period

Air Quality Monitoring Station

AM2 - Lee Kau Yan Memorial School AM2(A) - Ng Wah Catholic Secondary School **Noise Monitoring Station**

M3 - Cognitio College M4 - Lee Kau Yan Memorial School M5(C) - Mercy Grace's Home

Contract No. KLN/2016/04 Environmental Monitoring Works for Contract No. KL/2015/02 Kai Tak Development –Stage 5A Infrastructure at Former North Apron Area Tentative Impact Air and Noise Monitoring Schedule for July 2019

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1-Jul	2-Jul	3-Jul	4-Jul	5-Jul	6-Jul
				1-hr TSP x 3 [AM2]		
			24-hr TSP [AM2(A)]			
				Noise [M3, M4 &		
				M5(C)]		
7-Jul	8-Jul	9-Jul	10-Jul	11-Jul	12-Jul	13-Jul
			1-hr TSP x 3 [AM2]			
		24-hr TSP [AM2(A)]				
			Noise [M3, M4 &			
14 7 1	15 1 1	16 1 1	M5(C)]	10 1 1	10 1 1	20.1.1
14-Jul	15-Jul	16-Jul	17-Jul	18-Jul	19-Jul	20-Jul
		1-hr TSP x 3 [AM2]				
	24-hr TSP [AM2(A)]					24-hr TSP [AM2(A)]
	24-III' 15F [AWI2(A)]	Noise [M3, M4 &				24-III' 15F [AMI2(A)]
		M5(C)]				
21-Jul	22-Jul		24-Jul	25-Jul	26-Jul	27-Jul
21-501	1-hr TSP x 3 [AM2]	25-Jul	24-Jui	25-3ui	20- J u	27- J ul
					24-hr TSP [AM2(A)]	
	Noise [M3, M4 &					
	M5(C)]					
28-Jul		30-Jul	31-Jul	1-Aug	2-Aug	3-Aug
	1-hr TSP x 3 [AM2]				1-hr TSP x 3 [AM2]	
				24-hr TSP [AM2(A)]		
	Noise [M3, M4 &					
	M5(C)]					

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

* The noise level limit is 65dB(A) during the exam period

Air Quality Monitoring Station

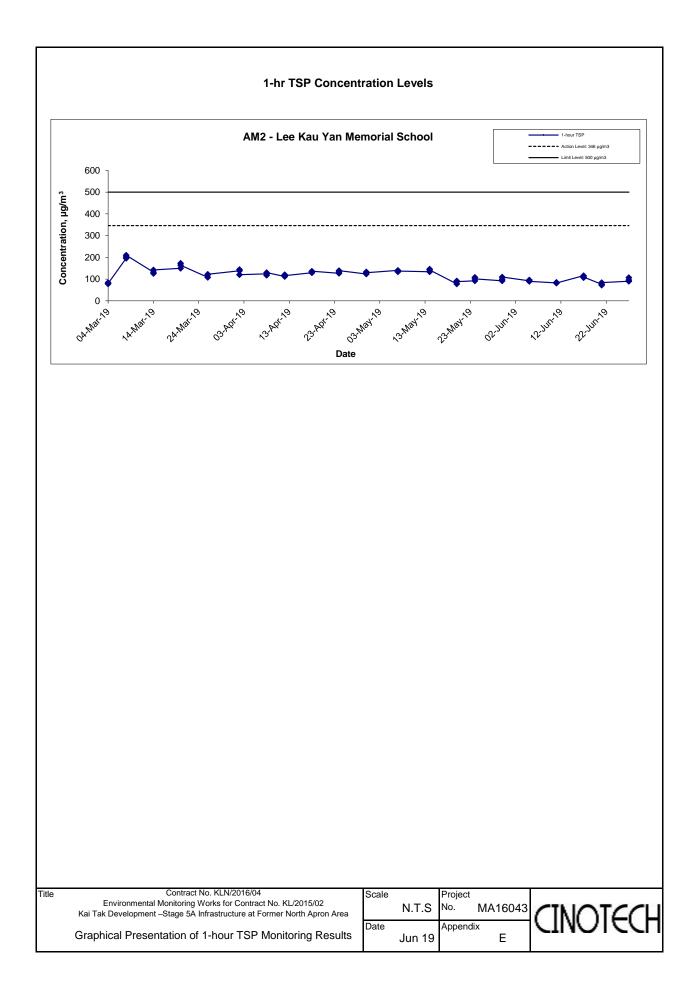
Noise Monitoring Station

AM2 - Lee Kau Yan Memorial School AM2(A) - Ng Wah Catholic Secondary School M3 - Cognitio College M4 - Lee Kau Yan Memorial School M5(C) - Mercy Grace's Home

APPENDIX E 1-HOUR TSP MONITORING RESULTS AND GRAPHICAL PRESENTATION

Appendix E - 1-hour TSP Monitoring Results in June 2019

Location AM2 -	Location AM2 - Lee Kau Yan Memorial School					
Date	Time	Weather	Particulate Concentration (µg/m3)			
5-Jun-19	9:00	Sunny	92			
5-Jun-19	10:00	Sunny	96			
5-Jun-19	11:00	Sunny	90			
11-Jun-19	14:00	Cloudy	83			
11-Jun-19	15:00	Cloudy	85			
11-Jun-19	16:00	Cloudy	82			
17-Jun-19	14:00	Rainy	116			
17-Jun-19	15:00	Rainy	107			
17-Jun-19	16:00	Rainy	109			
21-Jun-19	15:00	Cloudy	76			
21-Jun-19	16:00	Cloudy	72			
21-Jun-19	17:00	Cloudy	84			
27-Jun-19	9:00	Sunny	90			
27-Jun-19	10:00	Sunny	96			
27-Jun-19	11:00	Sunny	107			
		Average	92			
		Maximum	116			
		Minimum	72			

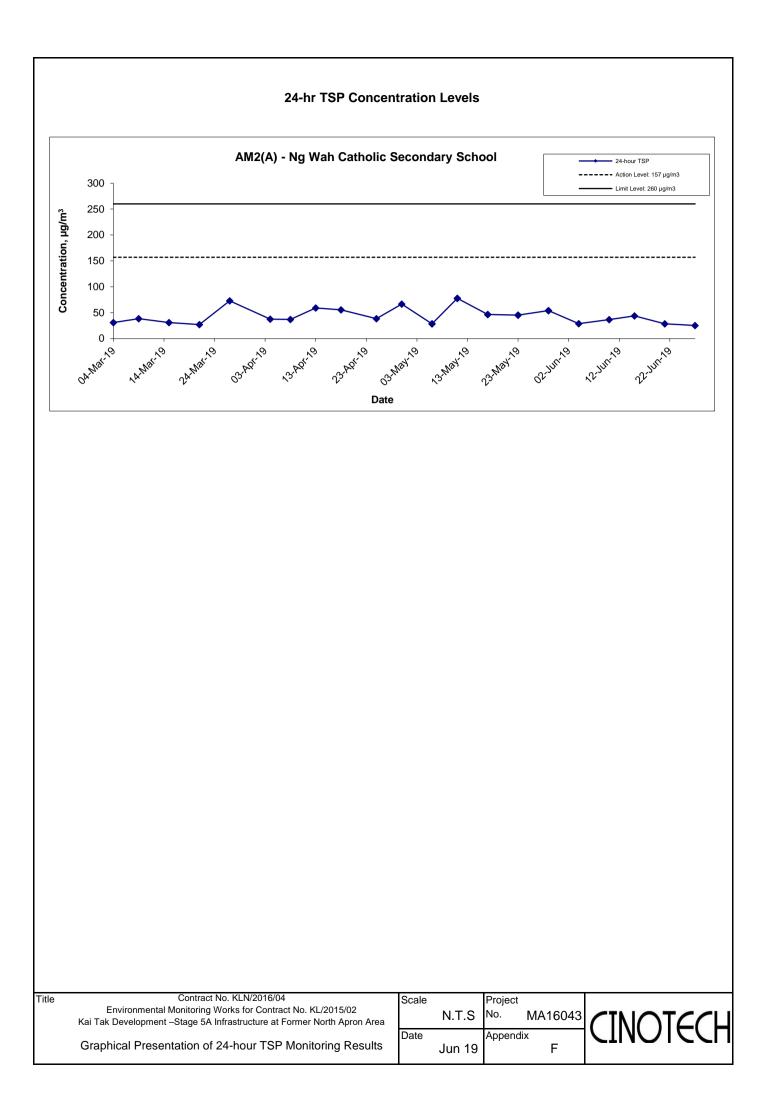


APPENDIX F 24-HOUR TSP MONITORING RESULTS AND GRAPHICAL PRESENTATION

Appendix F - 24-hour TSP Monitoring Results in June 2019

Location AM2(A) - Ng Wah Cathe	olic Secondary School
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Start Date	Weather	Air Temp.	Atmospheric Pressure,	Filter W	eight (g)	Particulate	Elaps	e Time	Sampling	Flow Rate	e (m³/min.)	Av. Flow	Total vol.	Conc.
Start Date	Condition	(K)	Pa (mmHg)	Initial	Final	weight (g)	Initial	Final	Time (hrs.)	Initial	Final	(m3/min)	(m3)	(µg/m3)
4-Jun-19	Sunny	301.7	757.0	3.4670	3.5171	0.0501	4310.7	4334.7	24.0	1.20	1.20	1.20	1734.4	29
10-Jun-19	Cloudy	301.5	753.9	3.4840	3.5474	0.0634	4334.7	4358.7	24.0	1.20	1.20	1.20	1731.0	37
15-Jun-19	Cloudy	301.3	754.7	3.4731	3.5488	0.0757	4358.7	4382.7	24.0	1.20	1.20	1.20	1732.4	44
21-Jun-19	Sunny	303.8	754.2	3.5221	3.5714	0.0493	4382.7	4406.7	24.0	1.20	1.20	1.20	1725.3	29
27-Jun-19	Cloudy	303.4	751.5	3.4790	3.5226	0.0436	4408.7	4432.7	24.0	1.20	1.20	1.20	1724.0	25
													Min	25
													Max	44
													Average	33

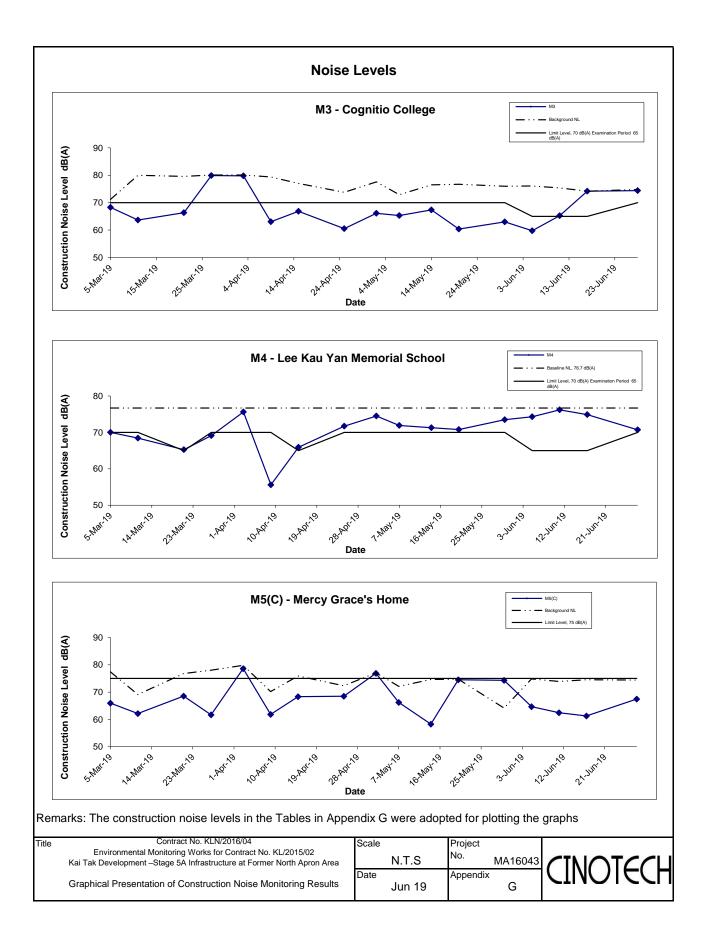


APPENDIX G NOISE MONITORING RESULTS AND GRAPHICAL PRESENTATION

Appendix G - Noise Monitoring Results

	Time	Weather	Unit: dB (A) (30-min)							
Date			Meas	sured Noise	Level	Background Noise	Construction Noise Level			
			L _{eq}	L ₁₀	L ₉₀	L _{eq}		L _{eq}		
5-Jun-19	13:00	Sunny	76	79	73	76	60			
11-Jun-19	13:00	Cloudy	76	77	73	75	65			
17-Jun-19	13:00	Cloudy	74	77	73	74	74	Measured ≦ Background		
28-Jun-19	10:00	Cloudy	74	76	73	75	74	Measured ≦ Background		
Location M4 -	Lee Kau Ya	an Memorial So	chool							
	Unit: dB (A) (30-min)									
Date	Time	Weather	Measured Noise Level			Baseline Level	Construction Noise Level			
			L _{eq}	L ₁₀	L ₉₀	L _{eq}		L _{eq}		
5-Jun-19	14:00	Sunny	74	76	71		74	Measured ≦ Baseline		
11-Jun-19	10:00	Cloudy	76	78	74	77	76	Measured ≦ Baseline		
17-Jun-19	14:30	Cloudy	75	78	73	//	75	Measured ≦ Baseline		
28-Jun-19	10:45	Cloudy	71	72	69		71 Measured ≦ Base			
Location M5(C) - Mercy G	Grace's Home								
			Unit: dB (A) (30-min)							
Date	Time	Weather	Meas	sured Noise	Level	Background Noise	Construction Noise Level			
			L _{eq}	L ₁₀	L ₉₀	L _{eq}		L _{eq}		
5-Jun-19	11:30	Sunny	75	77	72	75	65			
11-Jun-19	11:30	Cloudy	74	77	73	74	62			
17-Jun-19	11:30	Cloudy	75	77	73	75	61			
28-Jun-19	11:30	Sunny	75	77	74	74	67			

*All data has been presented to the nearest integer



APPENDIX H SUMMARY OF EXCEEDANCE

Appendix H – Summary of Exceedance

Exceedance Report for Contract No. KL/2015/02

- (A) Exceedance Report for Air Quality (NIL in the reporting month)
- (B) Exceedance Report for Construction Noise (NIL in the reporting month)
- (C) Exceedance Report for Landscape and Visual (NIL in the reporting month)

APPENDIX I SITE AUDIT SUMMARY

Contract No. KLN/2016/04 Environmental Monitoring Works for Contract No. KL/2015/02 Kai Tak Development - Stage 5A Infrastructure at Former North Apron Area

Weekly Site Inspection Record Summary Inspection Information

Checklist Reference Number	190603
Date	03 June 2019
Time	14:10 - 14:50

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	B. Water Quality	
190603-R2	• Contactor should cover the construction material to avoid water ponding in portion 6.	B8
	C. Air Quality	
	No environmental deficiency was identified during site inspection.	
	D. Noise	
	No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
190603-R1	• Contractor should clean up the liquid in the drip tray under the generator in S-Future.	E9
190603-R1	• Contractor should cover the chemical containers and also clean up the liquid in the drip tray under the chemical containers in portion 1.	Е9
	F. Visual and Landscape	
	No environmental deficiency was identified during site inspection.	
	G. Permits /Licences	
	No environmental deficiency was identified during site inspection.	
	H. Others	
190527-R1	- Following up on the previous site audit: The concerned excavator is located in pedestrian prohibit area, therefore the NRRM issue will be follow-up in the next site inspection.	C19
190527/-R2	- Following up on the previous site audit: The dusty materials were covered with impervious dust screen in Portion L7.	C7

	Name	Signature	Date
Recorded by	Tommy Lam	SA	03 June 2019
Checked by	Karina Chan	Jell	03 June 2019

Contract No. KLN/2016/04 Environmental Monitoring Works for Contract No. KL/2015/02 Kai Tak Development - Stage 5A Infrastructure at Former North Apron Area

Weekly Site Inspection Record Summary Inspection Information

Checklist Reference Number	190612
Date	12 June 2019
Time	09:30 - 10:18

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	B. Water Quality	
	No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	No environmental deficiency was identified during site inspection.	
	D. Noise	
	No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
	No environmental deficiency was identified during site inspection.	
	F. Visual and Landscape	
	No environmental deficiency was identified during site inspection.	
	G. Permits /Licences	
	No environmental deficiency was identified during site inspection.	
	H. Others	
190603-R1	- Following up on the previous site audit: The drip tray under the chemical containers in portion 1 and the drip tray under the generator in S-Future still contains liquid and should be covered to prevent the accumulation of water during wet season.	E9

	Name	Signature	Date
Recorded by	Tommy Lam	San	12 June 2019
Checked by	Karina Chan	Jell	12 June 2019

Contract No. KLN/2016/04 Environmental Monitoring Works for Contract No. KL/2015/02 Kai Tak Development - Stage 5A Infrastructure at Former North Apron Area

Weekly Site Inspection Record Summary Inspection Information

Checklist Reference Number	190617
Date	17 June 2019
Time	14:10 - 14:40

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	B. Water Quality	
	No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	No environmental deficiency was identified during site inspection.	
	D. Noise	
	No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
	No environmental deficiency was identified during site inspection.	
	F. Visual and Landscape	
	No environmental deficiency was identified during site inspection.	
	G. Permits /Licences	
	No environmental deficiency was identified during site inspection.	
	H. Others	
	- Following up on the previous site inspection: No environmental deficiency was following up on the previous site inspection.	

	Name	Signature	Date
Recorded by	Tommy Lam	SA	17 June 2019
Checked by	Karina Chan	Jell	17 June 2019

Contract No. KLN/2016/04 Environmental Monitoring Works for Contract No. KL/2015/02 Kai Tak Development - Stage 5A Infrastructure at Former North Apron Area

Weekly Site Inspection Record Summary Inspection Information

Checklist Reference Number	190624
Date	24 June 2019
Time	14:24 - 15:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	B. Water Quality	
190624-R4	Water pond formed in Portion 6.	B8
	C. Air Quality	
190624-R1	 Contractor should shows the NRMM label on the excavator in Load D1 and the mobile crane in Portion 1. 	C19
190624-R3	Contractor should cover the dusty material in Portion 6.	C7
	D. Noise	
	No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
190624-R2	• Contractor should clean up the general wastes or food wastes in Load D1.	E1
	F. Visual and Landscape	
	No environmental deficiency was identified during site inspection.	
	G. Permits /Licences	
	No environmental deficiency was identified during site inspection.	
	H. Others	
	- Following up on the previous site inspection: No environmental deficiency was following up on the previous site inspection.	

	Name	Signature	Date
Recorded by	Tommy Lam	Sans	24 June 2019
Checked by	Karina Chan	Jell	24 June 2019

APPENDIX J EVENT ACTION PLANS

Event/Action Plan for Air Quality

EVENT		ł		
	ET	IEC	ER	CONTRACTOR
Action Level being	1. Identify source and investigate the	1. Check monitoring data submitted	1. Notify Contractor.	1. Rectify any unacceptable practice;
exceeded by	causes of exceedance;	by ET;		2. Amend working methods if
one sampling	2. Inform Contactor, IEC and ER;	2. Check Contractor's working		appropriate.
	3. Repeat measurement to confirm finding.	method.		
Action Level being	1. Identify source and investigate the	1. Check monitoring data submitted	1. Confirm receipt of notification	1. Discuss with ET and IEC on proper
exceeded by	causes of exceedance;	by ET;	of exceedance in writing;	remedial actions;
two or more	2. Inform Contractor, IEC and ER;	2. Check Contractor's working	2. Notify Contractor;	2. Submit proposals for remedial
consecutive	3. Increase monitoring frequency to daily;	method;	3. In consolidation with the IEC,	actions to ER and IEC within three
sampling	4. Discuss with IEC and Contractor on	3. Discuss with ET and Contractor on	agree with the Contractor on the	working days of notification;
	remedial actions required;	possible remedial measures;	remedial measures to be	3. Implement the agreed proposals;
	5. Assess the effectiveness of	4. Advise the ER on the effectiveness	implemented;	4. Amend proposal if appropriate.
	Contractor's remedial actions;	of the proposed remedial measures.	4. Supervise implementation of	
	6. If exceedance continues, arrange		remedial measures;	
	meeting with IEC and ER;		5. Conduct meeting with ET and	
	7. If exceedance stops, cease additional		IEC if exceedance continues.	
	monitoring.			
Limit Level being	1. Identify source and investigate the	1. Check monitoring data submitted	1. Confirm receipt of notification	1. Take immediate action to avoid
exceeded by	causes of exceedance;	by ET;	of exceedance in writing;	further exceedance;
one sampling	2. Inform Contractor, IEC, ER, and EPD;	2. Check Contractor's working	2. Notify Contractor;	2. Discuss with ET and IEC on proper
	3. Repeat measurement to confirm finding;	method;	3. In consolidation with the IEC,	remedial actions;
	4. Assess effectiveness of	3. Discuss with ET and Contractor on	agree with the Contractor on the	3. Submit proposals for remedial
	Contractor's remedial actions and keep	possible remedial measures;	remedial measures to be	actions to ER and IEC within three

	EPD, IEC and ER informed of	4. Advise the ER on the	implemented;	working days of notification;
	the results.	effectiveness of the proposed	4. Supervise implementation of	4. Implement the agreed proposals.
		remedial measures.	remedial measures;	
			5. Conduct meeting with ET and	
			IEC if exceedance continues.	
Limit Level being	1. Notify IEC, ER, Contractor and	1. Check monitoring data submitted	1. Confirm receipt of notification	1. Take immediate action to avoid
exceeded by	EPD;	by ET;	of exceedance in writing;	further exceedance;
two or more	2. Repeat measurement to confirm	2. Check Contractor's working	2. Notify Contractor;	2. Discuss with ET, ER and IEC on
consecutive	findings;	method;	3. In consolidation with the IEC,	proper remedial actions;
sampling	3. Carry out analysis of Contractor's	3. Discuss amongst ER, ET, and	agree with the Contractor on the	3. Submit proposals for remedial
	working procedures to identify source and	Contractor on the potential remedial	remedial measures to be	actions to IEC within three working
	investigate the causes of exceedance;	actions;	implemented;	days of notification;
	4. Increase monitoring frequency to	4. Review Contractor's remedial	4. Supervise implementation of	4. Implement the agreed proposals;
	daily;	actions whenever necessary to	remedial measures;	5. Submit further remedial actions if
	5. Arrange meeting with IEC, ER	assure their effectiveness and	5. If exceedance continues,	problem still not under control;
	and Contractor to discuss the	advise the ER accordingly.	consider stopping the Contractor	6. Stop the relevant portion of works
	remedial actions to be taken;		to continue working on that	as instructed by the ER until the
	6. Assess effectiveness of		portion of work which causes the	exceedance is abated.
	Contractor's remedial actions and		exceedance until the	
	keep EPD, IEC and ER informed		exceedance is abated.	
	of the results;			
	7. If exceedance stops, cease additional			
	monitoring.			

Event/Action Plan for Construction Noise

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level	1. Notify ER, IEC and Contractor;	1. Review the investigation	1. Confirm receipt of	1. Submit noise mitigation
being	2. Carry out investigation;	results submitted by the ET;	notification of failure in	proposals to IEC and ER;
exceeded	3. Report the results of investigation	2. Review the proposed remedial	writing;	2. Implement noise mitigation
	to the IEC, ER and Contractor;	measures by the Contractor and	2. Notify Contractor;	proposals.
	4. Discuss with the IEC and	advise the ER accordingly;	3. In consolidation with the	(The above actions should be
	Contractor on remedial measures	3. Advise the ER on the	IEC, agree with the	taken within 2 working days after
	required;	effectiveness of the proposed	Contractor on the remedial	the exceedance is identified)
	5. Increase monitoring frequency to	remedial measures.	measures to be implemented;	
	check mitigation effectiveness.	(The above actions should be	4. Supervise the	
	(The above actions should be taken	taken within 2 working days after	implementation of remedial	
	within 2 working days after the	the exceedance is identified)	measures.	
	exceedance is identified)		(The above actions should be	
			taken within 2 working days	
			after the exceedance is	
			identified)	
Limit Level	1. Inform IEC, ER, Contractor and	1. Discuss amongst ER, ET, and	1. Confirm receipt of	1. Take immediate action to
being	EPD;	Contractor on the potential	notification of failure in	avoid further exceedance;
exceeded	2. Repeat measurements to confirm	remedial actions;	writing;	2. Submit proposals for remedial
	findings;	2. Review Contractor's remedial	2. Notify Contractor;	actions to IEC and ER within 3
	3. Increase monitoring frequency;	actions whenever necessary to	3. In consolidation with the	working days of notification;
	4. Identify source and investigate the	assure their effectiveness and	IEC, agree with the	3. Implement the agreed
	cause of exceedance;	advise the ER accordingly.	Contractor on the remedial	proposals;

5. Carry out analysis of Contractor's	(The above actions should be	measures to be implemented;	4. Submit further proposal if
working procedures;	taken within 2 working days after	4. Supervise the	problem still not under control;
6. Discuss with the IEC, Contractor	the exceedance is identified)	implementation of remedial	5. Stop the relevant portion of
and ER on remedial measures		measures;	works as instructed by the ER
required;		5. If exceedance continues,	until the exceedance is abated.
7. Assess effectiveness of		consider stopping the	(The above actions should be
Contractor's remedial actions and		Contractor to continue	taken within 2 working days after
keep IEC, EPD and ER informed of		working on that portion of	the exceedance is identified)
the results;		work which causes the	
8. If exceedance stops, cease		exceedance until the	
additional monitoring.		exceedance is abated.	
(The above actions should be taken		(The above actions should be	
within 2 working days after the		taken within 2 working days	
exceedance is identified)		after the exceedance is	
		identified)	

Event/Action Plan for Landscape and Visual

EVENT			ACTION	
ACTION LEVEL	ET	IEC	ER	CONTRACTOR
Design Check	 Check final design conforms to the requirements of EP and prepare report. 	 Check report. Recommend remedial design if necessary 	1. Undertake remedial design if necessary	
Non-conformity on one occasion	 Identify Source Inform IEC and ER Discuss remedial actions with IEC, ER and Contractor Monitor remedial actions until rectification has been completed 	 Check report Check Contractor's working method Discuss with ET and Contractor on possible remedial measures Advise ER on effectiveness of proposed remedial measures. Check implementation of remedial measures. 	 Notify Contractor Ensure remedial measures are properly implemented 	 Amend working methods Rectify damage and undertake any necessary replacement
Repeated Non-conformity	1. Identify Source Inform IEC and	1. Check monitoring report	 Notify Contractor Ensure remedial measures are properly 	 Amend working methods Rectify damage and

ER	2. Check Contractor's	implemented	undertake any necessary
2. Increase	working method		replacement
monitoring	3. Discuss with ET and		
frequency	Contractor on possible		
3. Discuss remedial	remedial measures		
actions with IEC,	4. Advise ER on		
ER and Contractor	effectiveness of		
4. Monitor remedial	proposed remedial		
actions until	measures		
rectification has	5. Supervise		
been completed	implementation of		
5. If non-conformity	remedial measures.		
stops, cease			
additional			
monitoring			

APPENDIX K ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE (EMIS)

EIA Ref.	Recommended Mitigation Measures	Implementation
EIA Kei.	Recommended Mitigation Measures	Status
Construct	ion Air Quality	
S6.5	8 times daily watering of the work site with active dust emitting activities.	٨
S6.8	Implementation of dust suppression measures stipulated in Air Pollution Control (Construction Dust) Regulation. The following mitigation	
	measures, good site practices and a comprehensive dust monitoring and audit programme are recommended to minimize cumulative dust impacts.	
	• Stockpiling site(s) should be lined with impermeable sheeting and bunded. Stockpiles should be fully covered by impermeable sheeting to	
	reduce dust emission.	#
	• Misting for the dusty material should be carried out before being loaded into the vehicle. Any vehicle with an open load carrying area should	
	have properly fitted side and tail boards.	Λ
	• Material having the potential to create dust should not be loaded from a level higher than the side and tail boards and should be dampened	
	and covered by a clean tarpaulin.	Λ
	• The tarpaulin should be properly secured and should extent at least 300 mm over the edges of the sides and tailboards. The material should	
	also be dampened if necessary before transportation.	Λ
	• The vehicles should be restricted to maximum speed of 10 km per hour and confined haulage and delivery vehicle to designated roadways	
	insider the site. Onsite unpaved roads should be compacted and kept free of lose materials.	٨
	• Vehicle washing facilities should be provided at every vehicle exit point.	
	• The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with	Λ
	concrete, bituminous materials or hardcores.	٨
	• Every main haul road should be scaled with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road	
	surface wet.	٨
	• Every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the	
	three sides.	Λ
	• Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.	
		Λ

S6.8	•	DWFI compound for JVBC:	N/A
		A DWFI compound is proposed at the downstream of JVC to contain pollution in drainage systems entering the KTAC and KTTS by	
		interception facilities until the ultimate removal of the pollution sources. Tidal barriers and desiliting facilities will form part of the	
		compounds to prevent any accumulation of sediment within the downstream section of JVBC and hence fully mitigate the potential odour	
		emissions from the headspace of JVBC near the existing discharge locations. The odour generating operations within the proposed desilting	
		compound will be fully enclosed and the odorous air will be collected and treated by high efficiency deodorizers before discharge to the	
		atmosphere.	
	•	Desilting compound for KTN:	N/A
		Two desilting compounds are proposed for KTN (at Site 1D6 and Site 1P1) to contain pollution in drainage systems entering the KTAC and	
		KTTS by interception facilities until the ultimate removal of the pollution sources. Tidal barriers and desiliting facilities will form part of the	
		compounds to prevent any accumulation of sediment within the downstream section of KTN and hence fully mitigate the potential odour	
		emissions from the headspace of KTN near the existing discharge locations. The odour generating operations within the proposed desilting	
		compound will be fully enclosed and the odorous air will be collected and treated by high efficiency deodorizers before discharge to the	
		atmosphere.	
	•	Decking or reconstruction of KTN within apron area:	N/A
		It is proposed to deck the KTN or reconstruct the KTN within the former Apron area into Kai Tak River from the south of Road D1 to the	
		north of Road D2 along the existing alignment of KTN. The Kai Tak River will compose of a number of channels flowing with nonodorous	
		fresh water and THEES effluent. The channel flowing with THEES effluent will be designed with the width of water surface of not more	
		than 16m.	
	•	Localised maintenance dredging:	N/A
		Localised maintenance dredging should be conducted to provide water depth of not less than 3.5m over the whole of KTAC and KTTS. With	
		reference to the water depth data recorded during the odour survey, only some of the areas in the northern part of KTAC (i.e. to the north of	
		taxiway bridge) including the area near the northern edge of KTAC, the area near western bank of KTAC, and the area near the JVC	
		discharge have water depths shallower than 3.5m. The area involved would be about 40% of the northern KTAC and the dredging depth	
		required would be from about 2.7m to less than 1m. The maintenance dredging to be carried out prior to the occupation of any new	
		development in the immediate vicinity of KTAC to avoid potential localized odour impacts at the future ASRs during the maintenance	

Improvement of water circulation in KTAC and KTTS:	N/A
600m gap opening at the northern part of the former Kai Tak runway, the water circulation in KTAC and KTTS would be substantially	
improved. Together with the improvement in water circulation, the DO level in KTAC and KTTS would also be increased.	
<u>In-situ sediment treatment by bioremediation:</u>	
Bioremediation would be applied to the entire KTAC and KTTS.	N/A
tion Noise	
Use of quiet PME, movable barriers barrier for Asphalt Paver, Breaker, Excavator and Hand-held breaker and full enclosure for Air Compressor, Bar	٨
Bender, Concrete Pump, Generator and Water Pump.	
Good Site Practice:	
• Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program.	^
• Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program.	^
• Mobile plant, if any, should be sited as far away from NSRs as possible.	
• Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down	Λ
to a minimum.	^
• Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the	
nearby NSRs.	^
• Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction	
activities.	٨
Scheduling of Construction Works during School Examination Period	٨
(i) Provision of low noise surfacing in a section of Road L2; and	N/A
(ii) Provision of structural fins	N/A
(i) Avoid the sensitive façade of class room facing Road L2 and L4; and	N/A
(ii) Provision of low noise surfacing in a section of Road L2 & L4	N/A
-	Important of the treatment and the order of the former Kai Tak runway; the water circulation in KTAC and KTTS would be substantially improved. Together with the improvement in water circulation, the DO level in KTAC and KTTS would also be increased. Im-situ sediment treatment by bioremediation: Bioremediation would be applied to the entire KTAC and KTTS. Use of quiet PME, movable barriers barrier for Asphalt Paver, Breaker, Excavator and Hand-held breaker and full enclosure for Air Compressor, Bar Bender, Concrete Pump, Generator and Water Pump. Good Site Practice: • Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program. • Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program. • Mobile plant, if any, should be sited as far away from NSRs as possible. • Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum. • Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs. • Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities. Scheduling of Construction Works during School Examination Period (i) Provision of low noise surfacing in a section of Road L2 and L4; and

S7.8	(i)	Provision of low noise surfacing in a section of Road L4 before occupation of Site 111; and	N/A
	(ii)	Setback of building about 5m from site boundary.	N/A
S7.8	Setbac	k of building about 35m to the northwest direction at 1L3 and 5m at Site 1L2.	N/A
S7.8	(i)	avoid any sensitive façades with openable window facing the existing Kowloon City Road network; and Avoid the sensitive façade of	N/A
		class room facing Road L2 and L4; and	
	(ii)	for the sensitive facades facing the To Kwa Wan direction, either setback the facades by about 5m to the northeast direction or do not	N/A
		provide the facades with openable window.	
S7.8	(i)	avoid any sensitive facades with openable window facing the existing To Kwa Wan Road or	N/A
	(ii)	provision of 17.5m high noise tolerant building fronting To Kwa Wan Road and restrict the height of the residential block(s) located at	N/A
		less than 55m away from To Kwa Wan Road to no more than 25m above ground	
S7.8	(i)	avoid any sensitive facades with openable window facing the slip road connecting Prince Edward Road East and San Po Kong or other	^
		alternative mitigation measures and at-source mitigation measures for the surrounding new local roads to minimise the potential traffic	
		noise impacts from the slip road	
S7.8	All the	ventilation fans installed in the below will be provided with silencers or acoustics treatment.	
	(i)	SPS	N/A
	(ii)	ESS	N/A
	(iii)	Tunnel Ventilation Shaft	N/A
	(iv)	EFTS depot	N/A
S7.8	Installa	ation of retractable roof or other equivalent measures	N/A
Constru	ction Wa	ter Quality	
S8.8	The fo	llowing mitigation measures are proposed to be incorporated in the design of the SPS at KTD, including:	
	•	Dual power supply or emergency generator should be provided at all the SPSs to secure electrical power supply;	N/A
	•	Standby pumps should be provided at all SPSs to ensure smooth operation of the SPS during maintenance of the duty pumps;	N/A
	•	An alarm should be installed to signal emergency high water level in the wet well at all SPSs; and	
	•	For all unmanned SPSs, a remote monitor system connecting SPSs with the control station through telemetry system should be provided	N/A
		so that swift actions could be taken in case of malfunction of unmanned facilities	N/A

S8.8	Construction Phase	
	Marine-based Construction	
	Capital and Maintenance Dredging for Cruise Terminal	
	Mitigation measures for construction of the proposed cruise terminal should follow those recommended in the approved EIA for CT Dredging.	N/A
S8.8	Fireboat Berth, Runway Opening and Road T2	
	Silt curtains should be deployed around the close grab dredger to minimize release of sediment and other contaminants for any dredging and filling	N/A
	activities in open water.	
S8.8	Dredging at and near the seawall area for construction of the public landing steps cum fireboat berth should be carried out at a maximum production	N/A
	rate of 1,000m ³ per day using one grab dredger.	
S8.8	The proposed construction method for runway opening should adopt an approach where the existing seawall at the runway will not be removed until	N/A
	completion of all excavation and dredging works for demolition of the runway. Thus, excavation of bulk fill and majority of the dredging works will	
	be carried out behind the existing seawall, and the sediment plume can be effectively contained within the works area. As there is likely some	
	accumulation of sediments alongside the runway, there will be a need to dredge the existing seabed after completion of all the demolition works.	
	Dredging alongside the 600m opening should be carried out at a maximum production rate of 2,000m ³ per day using one grab dredger.	
8.8	Dredging for Road T2 should be conducted at a maximum rate of 8,000m ³ per day (using four grab dredgers) whereas the sand filling should be	N/A
	conducted at a maximum rate of 2,000m3 per day (using two grab dredgers).	
8.8	Silt screens shall be applied to seawater intakes at WSD seawater intake.	N/A

S8.8	Land-based Construction	
	Construction Runoff	
	Exposed soil areas should be minimised to reduce the potential for increased siltation, contamination of runoff, and erosion. Construction runoff	
	related impacts associated with the above ground construction activities can be readily controlled through the use of appropriate mitigation measures	
	which include:	
	use of sediment traps	^
	adequate maintenance of drainage systems to prevent flooding and overflow	٨
S8.8	Ideally, construction works should be programmed to minimise surface excavation works during the rainy season (April to September). All exposed	٨
	earth areas should be completed as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of	
	earthworks where practicable. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely,	
	exposed slope surfaces should be covered by tarpaulin or other means.	
S8.8	Construction site should be provided with adequately designed perimeter channel and pre-treatment facilities and proper maintenance. The	٨
	boundaries of critical areas of earthworks should be marked and surrounded by dykes or embankments for flood protection. Temporary ditches	
	should be provided to facilitate runoff discharge into the appropriate watercourses, via a silt retention pond. Permanent drainage channels should	
	incorporate sediment basins or traps and baffles to enhance deposition rates. The design of efficient silt removal facilities should be based on the	
	guidelines in Appendix A1 of ProPECC PN 1/94.	
S8.8	Sediment tanks of sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m ³ capacity, are recommended as a	٨
	general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity is flexible and able to handle	
	multiple inputs from a variety of sources and particularly suited to applications where the influent is pumped.	
S8.8	Open stockpiles of construction materials (for examples, aggregates, sand and fill material) of more than 50 m ³ should be covered with tarpaulin or	Λ
	similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any	
	drainage system.	
S8.8	Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction	٨
	materials or debris being washed into the drainage system and storm runoff being directed into foul sewers.	
S8.8	Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecast, and actions to	#
	be taken during or after rainstorms are summarized in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty	

Appendix K – Summar	v of Implementation	Schedule of Mitigation	Measures for Construction Phase	•
11		ð		

	surface runoff during storm events.	
S8.8	Oil interceptors should be provided in the drainage system and regularly cleaned to prevent the release of oils and grease into the storm water	N/A(1)
	drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain.	
S8.8	All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on	^
	roads. An adequately designed and located wheel washing bay should be provided at every site exit, and wash-water should have sand and silt	
	settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and	
	exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking	
	of soil and silty water to public roads and drains.	
S8.8	Drainage	
	It is recommended that on-site drainage system should be installed prior to the commencement of other construction activities. Sediment traps	^
	should be installed in order to minimise the sediment loading of the effluent prior to discharge into foul sewers. There should be no direct discharge	
	of effluent from the site into the sea	
S8.8	All temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge should be adequately designed for the controlled	^
	release of storm flows. All sediment control measures should be regularly inspected and maintained to ensure proper and efficient operation at all	
	times and particularly following rain storms. The temporarily diverted drainage should be reinstated to its original condition when the construction	
	work has finished or the temporary diversion is no longer required.	
S8.8	All fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the	^
	storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour WCZ.	
S8.8	Sewage Effluent	
	Construction work force sewage discharges on site are expected to be connected to the existing trunk sewer or sewage treatment facilities. The	^
	construction sewage may need to be handled by portable chemical toilets prior to the commission of the on-site sewer system. Appropriate numbers	
	of portable toilets should be provided by a licensed contractor to serve the large number of construction workers over the construction site. The	
	Contractor should also be responsible for waste disposal and maintenance practices.	

S8.8	Stormwater Discharges	
50.0		
	Minimum distances of 100 m should be maintained between the existing or planned stormwater discharges and the existing or planned seawater	^
	intakes	
S8.8	Debris and Litter	
	In order to maintain water quality in acceptable conditions with regard to aesthetic quality, contractors should be required, under conditions of	۸
	contract, to ensure that site management is optimised and that disposal of any solid materials, litter or wastes to marine waters does not occur	
S8.8	Construction Works at or in Close Proximity of Storm Culvert or Seafront	
	The proposed works should preferably be carried out within the dry season where the flow in the drainage channel /storm culvert/ nullah is low.	^
S8.8	The use of less or smaller construction plants may be specified to reduce the disturbance to the bottom sediment at the drainage channel /storm	^
	culvert / nullah.	
S8.8	Temporary storage of materials (e.g. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction materials should be	^
	located well away from any water courses during carrying out of the construction works	
S8.8	Stockpiling of construction materials and dusty materials should be covered and located away from any water courses.	٨
S8.8	Construction debris and spoil should be covered up and/or disposed of as soon as possible to avoid being washed into the nearby water receivers.	٨
S8.8	Construction activities, which generate large amount of wastewater, should be carried out in a distance away from the waterfront, where practicable.	^
S8.8	Mitigation measures to control site runoff from entering the nearby water environment should be implemented to minimize water quality impacts.	^
	Surface channels should be provided along the edge of the waterfront within the work sites to intercept the runoff.	
S8.8	Construction effluent, site run-off and sewage should be properly collected and/or treated.	^
S8.8	Any works site inside the storm water courses should be temporarily isolated, such as by placing of sandbags or silt curtains with lead edge at	N/A
	bottom and properly supported props to prevent adverse impact on the storm water quality.	
S8.8	Silt curtain may be installed around the construction activities at the seafront to minimize the potential impacts due to accidental spillage of	N/A
	construction materials.	
S8.8	Proper shoring may need to be erected in order to prevent soil/mud from slipping into the storm culvert/drainage channel/sea.	N/A

S8.8	Supervisory staff should be assigned to station on site to closely supervise and monitor the works	٨
S8.8	Marine water quality monitoring and audit programme shall be implemented for the proposed sediment treatment operation.	N/A
Constru	iction Waste Management	
S9.5	Good Site Practices	
	It is not anticipated that adverse waste management related impacts would arise, provided that good site practices are adhered to. Recommendations	
	for good site practices during the dredging activities include:	
	• Nomination of an approved person, such as a site manager, be responsible for good site practices, arrangements for collection and effective	Λ
	disposal to an appropriate facility, of all wastes generated at the site.	
	• Training of site personnel in proper waste management and chemical waste handling procedures.	^
	Provision of sufficient waste disposal points and regular collection for disposal.	^
	• Appropriate measure to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting	Λ
	wastes in enclosed containers.	
	• A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites).	Λ
S9.5	Waste Reduction Measures	
	Good management and control can prevent the generation of a significant amount of waste. Waste reduction is best achieved at the planning and	
	design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include:	
	Sort C&D waste from demolition of the remaining structures to recover recyclable portions such as metals	
	• Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and	Λ
	their proper disposal	Λ
	• Encourage collection of aluminium cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated	
	from other general refuse generated by the work force	٨
	Any unused chemicals or those with remaining functional capacity should be recycled	
	• Proper storage and site practices to minimise the potential for damage or contamination of construction materials	Λ

S9.5	Dredged Marine Sediment	
	The basic requirements and procedures for dredged mud disposal are specified under the ETWB TCW No. 34/2002. The management of the	N/A
	dredging, use and disposal of marine mud is monitored by the MFC, while the licensing of marine dumping is required under the Dumping at Sea	
	Ordinance and is the responsibility of the Director of Environmental Protection (DEP)	
S9.5	The dredged marine sediments would be loaded onto barges and transported to the designated disposal sites allocated by the MFC depending on	N/A
	their level of contamination. Sediment classified as Category L would be suitable for Type 1 - Open Sea Disposal. Contaminated sediment would	
	require either Type 1 - Open Sea Disposal (Dedicated Sites), Type 2 - Confined Marine Disposal, or Type 3 - Special Treatment / Disposal and must	
	be dredged and transported with great care in accordance with ETWB TCW No. 34/2002. Subject to the final allocation of the disposal sites by	
	MFC, the dredged contaminated sediment must be effectively isolated from the environment and disposed properly at the designated disposal site	
S9.5	It will be the responsibility of the contractor to satisfy the appropriate authorities that the contamination levels of the marine sediment to be dredged	
	have been analysed and recorded. According to the ETWB TCW No. 34/2002, this will involve the submission of a formal Sediment Quality Report	
	to the DEP, prior to the dredging contract being tendered. The contractor for the dredging works should apply for allocation of marine disposal sites	
	and all necessary permits from relevant authorities for the disposal of dredged sediment. During transportation and disposal of the dredged marine	
	sediments requiring Type 1, Type 2, or Type 3 disposal, the following measures should be taken to minimise potential impacts on water quality:	
	• Bottom opening of barges should be fitted with tight fitting seals to prevent leakage of material. Excess material should be cleaned from the	
	decks and exposed fittings of barges and hopper dredgers before the vessel is moved	N/A
	• Monitoring of the barge loading should be conducted to ensure that loss of material does not take place during transportation. Transport	
	barges or vessels should be equipped with automatic selfmonitoring devices as required under the Dumping at Sea Ordinance and as	N/A
	specified by the DEP	
	• Barges or hopper barges should not be filled to a level that would cause the overflow of materials or sediment laden water during loading or	
	transportation	N/A
S9.5	Construction and Demolition Material	
	Mitigation measures and good site practices should be incorporated into contract document to control potential environmental impact from handling	
	and transportation of C&D material. The mitigation measures include:	
	• Where it is unavoidable to have transient stockpiles of C&D material within the Project work site pending collection for disposal, the	^

	transient stockpiles should be located away from waterfront or storm drains as far as possible	
	• Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric	^
	• Skip hoist for material transport should be totally enclosed by impervious sheeting	^
	• Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving a construction site	^
	• The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with	^
	concrete, bituminous materials or hardcores	
	• The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure	^
	dust materials do not leak from the vehicle	
	• All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials	^
	wet	
	• The height from which excavated materials are dropped should be controlled to a minimum practical height to limit fugitive dust generation	^
	from unloading	
	When delivering inert C&D material to public fill reception facilities, the material should consist entirely of inert construction waste and of size less	^
	than 250mm or other sizes as agreed with the Secretary of the Public Fill Committee. In order to monitor the disposal of the surplus C&D material	
	at the designed public fill reception facility and to control fly tipping, a trip-ticket system as stipulated in the ETWB TCW No. 31/2004 "Trip Ticket	
	System for Disposal of Construction and Demolition Materials" should be included as one of the contractual requirements and implemented by an	
	Environmental Team undertaking the Environmental Monitoring and Audit work. An Independent Environmental Checker should be responsible for	
	auditing the results of the system.	
S9.5	Chemical Waste	
	After use, chemical wastes (for example, 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 collected by a licensed collector for disposal at the CWTF or	
	other licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation	

S9.5	General	Refuse	
	the contr	refuse should be stored in enclosed bins or compaction units separate from C&D material. A licensed waste collector should be employed by actor to remove general refuse from the site, separately from C&D material. Effective collection and storage methods (including enclosed area) of site wastes would be required to prevent waste materials from being blown around by wind, wastewater discharge by flushing	#
	or leachi		
Constru	ction Land		
S13.9	CM1	All existing trees should be carefully protected during construction.	^
	CM2	Trees unavoidably affected by the works should be transplanted where practical. Detailed transplanting proposal will be submitted to	^
		relevant government departments for approval in accordance with ETWBC 2/2004 and 3/2006. Final locations of transplanted trees	
		should be agreed prior to commencement of the work.	
	CM3	Control of night-time lighting.	N/A(1)
	CM4	Erection of decorative screen hoarding.	^

Remarks:

^	Compliance of mitigation measure
*	Recommendations were made during site audits but improved/rectified by the Contractor
#	Recommendations were made during site audits but has not yet been improved/rectified by the Contractor
•	Non-compliance but rectified by the Contractor
X	Non-compliance of mitigation measure
N/A	Not Applicable at this stage
N/A(1)	Not observed

APPENDIX L SUMMARIES OF ENVIRONMENTAL COMPLAINT, WARNING, SUMMON AND NOTIFICATION OF SUCCESSFUL PROSECUTION

Contract No. KLN/2016/04 Environmental Monitoring Works for Contract No. KL/2015/02 Kai Tak Development – Stage 5A Infrastructure at Former North Apron Area

Appendix L – Summary of environmental complaint, warning, summon and notification of successful prosecution

EPD Complaint Ref No.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
17-34438	Dakota Drive and Olympic Avenue	23 October 2017	The complainant concerned about the dust emission when vehicle running on the dry surface outside Dakota Drive and Olympic Avenue. In addition, vehicles were not clear enough before leaving the construction site.	 In accordance with the information gathered in the investigation, construction activities were conducted with proper mitigation measures to minimize the dust impact arise from the construction site to the vicinity of this Project. Regular water spraying was provided to haul roads and unpaved areas within the site areas to reduce the dust impact arise from the construction site to the vicinity of this Project. The Contractor had also ensured vehicles and plants were wheel washed to be cleaned of mud and debris before leaving the construction site area. Therefore, the complaint is considered as non-project related. The following recommendations were made to further enhance the mitigation measures: Where practicable, to provide sheltered area on the top and three sides for stockpiles of dusty materials, or perform frequent water spraying so as to maintain the entire surface wet; Frequent checking and repair the gaps or broken tarpaulin sheets; and To provide a hard-surfaced road between any cleaning facility and the public Road 	Closed

Complaint Log

Remarks: No complaint was received in the reporting month.

Contract No. KLN/2016/04 Environmental Monitoring Works for Contract No. KL/2015/02 Kai Tak Development – Stage 5A Infrastructure at Former North Apron Area

Appendix L – Summary of environmental complaint, warning, summon and notification of successful prosecution

Log Ref.Received DateDetails of Warning / Summons and Successful ProsecutionsInvestigation/Mitigation ActionStatusN/AN/AN/AN/AN/A

Warnings / Summons and Successful Prosecutions received

Remarks: No warning/summon and prosecution was received in the reporting month.

APPENDIX M SUMMARY OF WASTE GENERATION AND DISPOSAL RECORDS

Department:	CEDD
Contract No.:	KL/2015/02
Project :	Kai Tak Development - Stage 5A Infrastructure at Former North Apron Area



As at 2 July 2019

Monthly Summary Waste Flow Table for 2019

									,	45 at 2 July 201	5				
		Quantities o	f Inert C & D M	aterials Genera	ated Monthly		C	uantities of C 8	& D Wastes Ger	nerated Month	ly				
Month	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ Cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse				
	(in '000m ³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m ³)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m³)				
Jan	0	0	0	0	0	0	0	0	0	0	0.154				
Feb	0	0	0	0	0	0	0	0	0	0	0.035				
Mar	0	0	0	0	0	0	0	0	0	0	0.035				
Apr	0	0	0	0	0	0	0	0	0	0	0.070				
May	0	0	0	0	0	0	0	0	0	0	0.063				
June	0	0	0	0	0	0	0	0	0	0	0.028				
Sub-total	66.537	0	0	0	66.537	0	0	0	0	0	1.617				
July	0	0	0	0	0	0	0	0	0	0	0				
Aug	0	0	0	0	0	0	0	0	0	0	0				
Sept	0	0	0	0	0	0	0	0	0	0	0				
Oct	0	0	0	0	0	0	0	0	0	0	0				
Nov	0	0	0	0	0	0	0	0	0	0	0				
Dec	0	0	0	0	0	0	0	0	0	0	0				
Total	66.537	0	0	0	66.537	0	0	0	0	0	1.617				

Forecast of Total Quantities of C&D Materials to be Generated from the Contract*													
Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ Cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, 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)			
63000	0	0	0	67	0	0	0	0	0	2			

Notes: (1) The performance targets are given in PS clause 6(14).

(2) The waste flow table shall also include C & D materials that are specified in the Contract to be imported for use at the Site.

(3) Plastics refer to plastic bottles/ containers, plastic sheets/ foam from packaging material.

(4) The Contractor shall also submit the latest forcast of the total amount of C&D materials exected to be generated from the Works, together with a

braskdown of the nature where the total amount of C&D materials expected to be generated from the Works is equal to or excreeding 50,00 m³. (PS Cleuse 25.02A(7) refers).

APPENDIX N CONSTRUCTION PROGRAMME

KL/2015/02

Construction Programme

			20	016			201	7								2	018							20)19									20	20			
Works	Commence	Finish	9 10	0 11 12	1 2 3	4 5	6	7 8	39	10	11 12	2 1	L 2	3	4	5	57	8	9 10 11	12	1	2 3	4	5 6	5 7	8	9 1	0 11	1 12	1	2	3	4 :	56	7	8	9 10	11 12
Drainage, Sewerage and Waterworks	Dec-16	Sep-20																																				
District Cooling Mains	Mar-18	Sep-19																																				
Subway Construction	Dec-16	Sep-20																																				
Bridge Construction	Oct-16	Mar-20																																				
Roadworks	Feb-19	Sep-20																																				
Landscape	Jan-20	Sep-20																																				