Issue No.	:	1
Issue Date	:	June 2010
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JOINT USER COMPLEX AND WHOLESALE FISH MARKET AT AREA 44, TUEN MUN

SEVENTH QUARTERLY ENVIRONMENTAL MONITORING & AUDIT REPORT (FEBRUARY 2010 – APRIL 2010)

Prepared By:

ALLIED ENVIRONMENTAL CONSULTANTS LTD.

COMMERCIAL-IN-CONFIDENCE

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Acousticians & Environmental Engineers

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AEC 沛然環境評估工程顧問有限公司

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EXECUTIVE SUMMARY

Allied Environmental Consultants Limited (AEC) has been appointed to conduct an environmental monitoring and audit (EM&A) program for the proposed Joint User Complex and Wholesale Fish Market at Area 44, Tuen Mun. The construction works was commenced on 31st July 2008. This report is the seventh quarterly EM&A report, which summarizes the environmental monitoring and audit results recorded during the period from 1st February 2010 to 30th April 2010.

Based on the monitoring results, the air quality and construction noise level complied with the environmental requirements in EM&A Manual. There were no environmental complaints received in this quarter. No notification of summons or prosecution was received.

Construction activities undertaken from February 2010 to April 2010 included construction of superstructure; internal & external wall & ceiling rendering and plastering; floor screeding; erection of bamboo scaffolding; last manhole connection; internal wall & ceiling wall painting; installation of window & louver; installation of door frame; internal & external finishing works; installation of metal roof, waterproofing works; first & final fixing of E&M works, steel & metal works; construction of on-grade slab along G/F fish market; timber & metal door frame installation; lift installation; construction of hollow on-grade slab; construction of underground drainage system; installation of Kalzip roof system; and connection & construction of manhole along Wu Shan Road. Potential environmental impacts include dust generation from stockpiles of dusty materials, the superstructure, walls and building services; noise from operation of the equipments; runoff from building services and the storage of various C&D and chemical wastes. The Contractor should properly implement the required environmental mitigation measures as per the implementation schedule in the EM&A manual to ensure no significant adverse environmental impacts to be arisen from the construction works. The Contractor was reminded to maintain good housekeeping throughout the construction phase.

1. PROJECT BACKGROUND

A Joint User Complex and Wholesale Fish Market (WFM Complex) at Area 44 in Tuen Mun is proposed to be designed and built by Architectural Services Department on behalf of Agriculture, Fisheries and Conservation Department, Marine Department, and Food and Environmental Hygiene Department of the Hong Kong SAR. The WFM Complex is to provide a permanent site for the relocation of the existing temporary wholesale fish market at Tuen Mun Area 27 and to accommodate a community hall and dragon boat racing spectator stand for public use. The proposed development is a 3-storey complex to accommodate the wholesale fish market at the ground floor, a community hall on the first and second floors, and an extensive landscaped deck on roof level. The proposed Wholesale Fish Market is categorized as a designated project under the Environmental Impact Assessment Ordinance (EIAO) and therefore a detailed Environmental Impact Assessment (EIA-085/2002) has been conducted in year 2002 and an Environmental Permit (EP-296/2007) was issued by Environmental Protection Department in December 2007.

The subject site is located at Castle Peak Bay of Tuen Mun given in Figure 1. The subject site is bounded to the north by a future local open space presently used as a temporary car park, to the east by Castle Peak Bay typhoon shelter, to the south by a future lorry park and to the west by Wu Shan Road. Yuet Wu Villa being the nearest residential establishment is located at around 85m from the site boundary.

1.1 Project Organization and Contact Personnel

Key personnel and contact particulars are summarized in Table 1.

Table 1 Contact Details of Key Personnel

Role	Department / Company	Names	Contact Number	Fax Number
Lead User Department	Agriculture, Fisheries, and Conservation Department	Mr. K.H. Chan Ms. Louise Li	2150 7092 2150 7104	2314 2866
Environmental Permit Holder	Architecture Services Department	Mr. S.W. Chow Ms. Susana Chan	2867 3716 2867 3706	2523 9622
Architect	P&T Architects and Engineers Ltd.	Ms. Sarah Ng Ms. Vivian Law	2835 3548 2832 3046	2891 3834
Main Contractor	W. Hing Construction Co. Ltd.	Mr. Andy Chan Mr. Jim Lee	9630 7404 6105 4076	8343 9188
Environmental Team Leader	Allied Environmental Consultants Ltd.	Ms. Grace Kwok	2815 7028	2815 5399
Independent Environmental Checker	Cinotech Consultants Ltd.	Dr. Priscilla Choy	2151 2089	3107 1388

2. SENSITIVE RECEIVERS

Air Sensitive Receivers (ASRs) within 500m include Yuet Wu Villa, Lawn Bowling Field, Tennis Court, which are less than 100m away from the subject site. Tuen Mun Wu Hong Clinic is located to the west at about 100m to the site boundary. Two secondary schools, namely Ka Chi Secondary School and South Tuen Mun Government Secondary School, are approximately 300m to the south of the site boundary.

Noise Sensitive Receivers (NSRs) within 300m are Yuet Wu Villa, Siu Hei Court, Yan Chai Hospital Low Chan Chor Si Primary School and Wu King Estate. The nearest NSR will be Block 15 of Yuet Wu Villa.

3. SUMMARY OF EM&A REQUIREMENT

For regular impact monitoring, the sampling frequency of at least once in every six-days, shall be strictly observed at the monitoring station for 24-hr TSP monitoring. For 1-hr TSP monitoring, the sampling frequency of at least three times in every six-days should be undertaken when the highest dust impact occurs. For noise monitoring, one set of measurement between 0700-1900 hours on normal weekdays. $Leq_{(30\ min)}$ shall be used as the monitoring parameter.

From baseline monitoring results, the proposed Action and Limit Levels for air quality are summarized in Table 2. The average baseline 1-hr TSP value of 129μg/m^3 and 24-hr TSP value of 65μg/m^3 measured at Block 15, Yuet Wu Villa was used to determine the action and limit level for air quality impact monitoring. The proposed Action and Limit Levels for construction noise are summarized in Table 3.

Table 2 Action and Limit Level for Air Quality Impact Monitoring at Yuet Wu Villa

Parameters	***Baseline Level (μg/m^3)***	***Action Level (μg/m^3)***	***Limit Level (μg/m^3)***
24 Hour TSP Level	65	173	260
1 Hour TSP Level	129	334	500

Table 3 Action and Limit Levels for Construction Noise Impact Monitoring

Time Period	***Action Level***	***Limit Level***
Daytime (0700-1900 hours) on weekdays	When one documented compliant is received	Dwelling 75dB(A)[1] School 70dB(A)[1] (65dB(A) during examinations)[1]
1900-2300 on any day and 0700-2300 on Sunday and general holidays, for use of PME[2]	When one documented compliant is received	65dB(A)[3]
All days during the night-time (2300-0700 hours) [2]	When one documented compliant is received	50dB(A)[3]

Note: 1. Construction noise criteria stipulated in the TM-EIAO
2. A Construction Noise Permit (CNP) shall be required for the carrying out of the construction work during the restricted hours (1900-2300 on any day and 0700-2300 on Sunday and general holidays, for use of PME; and All days during the night-time (2300-0700 hours))
3. Area sensitivity rating of the monitoring location is "B".

Should non-compliance of the above Action and Limit levels occurs, the contractor shall undertake corresponding action in accordance with the proposed Event Action Plan given in EM&A Manual. A summarized general Event Action Plan is given in Table 4. Details should be referred to the Event Action Plan in the EM&A Manual.

Table4 Event Action Plan

Level	**Step 1**	**Step 2**	**Step 3**
Action	• Identify source • Check monitoring data and working methods	• Contact project manager to discuss and implement remedial action • Rectify any unacceptable practice • Amend working methods if appropriate • If exceedance continues, commence additional monitoring	• Notify client/project manager following correct of the situation • Cease additional monitoring if exceedance stops
Limit	• Identify source • Notify client/project manager • Check monitoring data and working methods • Repeat measurement to confirm finding • Commence additional	• Take immediate action to avoid further exceedance • Submit proposal for remedial actions to client/project manager within 3 working days • Implement the agreed proposal	• Notify client/project manager following correction of the situation • Cease additional monitoring if exceedance stops

	monitoring	• If exceedance continues, amend and resubmit the proposal	

4. MONITORING METHODOLOGY

4.1 Monitoring Programme

Air quality monitoring and noise monitoring were conducted at Block 15, Yuet Wu Villa on 3rd, 9th, 12th, 18th and 24th February 2010, 2nd, 8th, 13th, 19th, 25th and 31st March 2010 and 7th, 13th, 19th, 24th and 30th April 2010. Appendix A displayed the detail schedule of the monitoring programme. Air quality monitoring station was set up at the roof top of the residential block and noise monitoring was conducted at 1.2m above ground level in front of the residential block and at the junction of Wu Sau Street and Wu On Street as given in Figure 2 and 3. Figure 4 and 5 show photos taken during monitoring at the two locations.

A construction site for the proposed Junior Police Officers' Married Quarters is located at Wu Hong Street which is 110m away from the monitoring location, which can be a major source of the noise and TSP generation during the monitoring period. The construction works of proposed Junior Police Officers' Married Quarters were completed in March 2010. Figure 6 shows the photo of the construction site.

4.2 Air Quality Monitoring

1-hour and 24-hour TSP air quality monitoring was conducted at the designated air quality monitoring location using a High Volume TSP Sampler (Model No: Anderson GMWS-2310 ACCU-VOL) at the designated location. The Calibration Record of the High-Volume TSP Sampler is given in Appendix B. 24-hour TSP samples were taken every six days. 1-hour TSP samples were taken three times a day between 0700-1900 hours.

4.3 Noise Monitoring

Noise monitoring was conducted at the designated noise monitoring location between 0700-1900 hours using a sound level meter which complies with the International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1). Noise instrumentation details are given in Table 5 and the Calibration Certificate for the sound level meter and calibrator is given in Appendix C.

Table 5 Noise Monitoring Equipment

Manufacturer	Type/Model No.	Equipment
RION	Model NL 31	Precision Sound Level Analyzer with windshield
RION	Model NC 73	Calibrator

Noise levels measurements were recorded in terms of thirty minutes A-weighted equivalent continuous sound pressure level ($Leq_{(30min)}$) on a weekly basis. The sound level meter was calibrated immediately prior to and following each noise measurement. The meter was mounted on a tripod at a height of 1.2m and the microphone was positioned at 1m away the building façade of the noise monitoring station facing the construction site.

Noise measurements were not made in the presence of fog, rain, and wind with a steady speed exceeding 5m/s or wind with gusts exceeding 10m/s. The wind speed was checked with a portable anemometer capable of measuring the wind speed in m/s.

5. RESULTS

5.1. Air Quality

No exceedance was recorded in this quarter. Summary and graphical plots of air quality monitoring record of 1-hour TSP levels and 24-hour TSP levels are provided in Appendices D and E. The weighing of the filter paper used in the monitoring will be undertaken by ALS Laboratory Group Environmental Division. (HOKLAS Registration No.: 066)

5.2. Noise

Noise monitoring results in terms of $L_{eq(30min)}$, $L_{10(30min)}$ $L_{90(30min)}$ were measured at the designated noise monitoring location. L_{10} and L_{90} represent sound levels that are exceeded 10% and 90% of the time respectively. Normally, L_{10} measurements can be considered as the average peak levels, whilst L_{90} levels can be considered as the average background noise levels.

No exceedance was recorded in this quarter. Summary of noise monitoring record is provided in Appendix F.

5.3. Weather Conditions

Weather data of the monitoring station were obtained from the nearest Hong Kong Observatory (HKO) Tuen Mun automatic weather station located at Tuen Mun Town Park (63 mPD).Table 6 summarizes the wind data during the monitoring dates. Wind record from HKO is shown in Appendix G.

Table 6 Summary of Weather Conditions during the Monitoring Period

Date	Weather	Prevailing Wind Direction	Daily Average Wind Speed (m/s)
3rd February 2010	Cloudy	S	1.79
9th February 2010	Cloudy	SE	3.90
12th February 2010	Cloudy	NE	3.75
18th February 2010	Cloudy	NE	3.11
24th February 2010	Cloudy	SE	3.76
2nd March 2010	Cloudy	SE	2.16
8th March 2010	Cloudy	N	1.72
13th March 2010	Cloudy	N	0.30
19th March 2010	Sunny	SE	1.46
25th March 2010	Cloudy	N	3.89
31st March 2010	Cloudy	SE	2.82
7th April 2010	Cloudy	S	2.22
13th April 2010	Sunny	SE	3.67
19th April 2010	Sunny	SW	2.33
24th April 2010	Sunny	SE	3.41
30th April 2010	Cloudy	S	2.49

6. SITE INSPECTION & AUDIT

Weekly site inspections were carried out by representatives of the ET. Thirteen site inspections were conducted on 5th, 12th, 19th and 26th February 2010, 5th, 12th, 19th, 26th March 2010, 2nd, 9th, 16th, 23rd and 30th April 2010. Key findings are summarized in Table 7.

The mitigation measures undertaken by the Contractor are effective in minimizing the environmental impact; however, the Contractor should implement these mitigation measures more effectively in order to prevent causing any adverse environmental impact.

Table 7 Summary of Site Inspections

Date	Observations	Action taken by contractor	Outcome
5th February 2010	No observations during inspection.	Contractor was required to keep up with the mitigation measures.	Nil.
12th February 2010	Haul road appeared dry.	Contractor was requested to increase the frequency of watering.	The situation was rectified immediately.
19th February 2010	No observations during inspection.	Contractor was required to keep up with the mitigation measures.	Nil.
26th February 2010	No observations during inspection.	Contractor was required to keep up with the mitigation measures.	Nil.
5th March 2010	No observations during inspection.	Contractor was required to keep up with the mitigation measures.	Nil.
12th March 2010	Haul road appeared dry.	Contractor was requested to increase the frequency of watering.	Sufficient water spraying was given to dry haul road.
19th March 2010	No observations during inspection.	Contractor was required to keep up with the mitigation measures.	Nil.
26th March 2010	No observations during inspection.	Contractor was required to keep up with the mitigation measures.	Nil.
2nd April 2010	No observations during inspection.	Contractor was required to keep up with the mitigation measures.	Nil.
9th April 2010	No observations during inspection.	Contractor was required to keep up with the mitigation measures.	Nil.
16th April 2010	No observations during inspection.	Contractor was required to keep up with the mitigation measures.	Nil.
23rd April 2010	No observations during inspection.	Contractor was required to keep up with the mitigation measures.	Nil.
30th April 2010	No observations during inspection.	Contractor was required to keep up with the mitigation measures.	Nil.

During site inspections in this quarter, no non-conformance of implementation of environmental mitigation measures was identified. All environmental mitigation measures for construction stages stated in the approved EIA Report, EM&A Manual and Environmental Permit shall be carried out throughout the whole construction period as shown in Appendix H.

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

In this quarter, no complaints, inspection notices, and notifications of summons or prosecution were received.

8. OTHERS

2,927.44 tonnes of inert C&D material was disposed at public fill. 598.36 tonnes of waste including general refuse and non-inert C&D waste such as timber and bamboo were disposed to landfill. No chemical waste was transported off site in this quarter.

9. RECOMMENDATIONS AND CONCLUSIONS

9.1. Recommendations

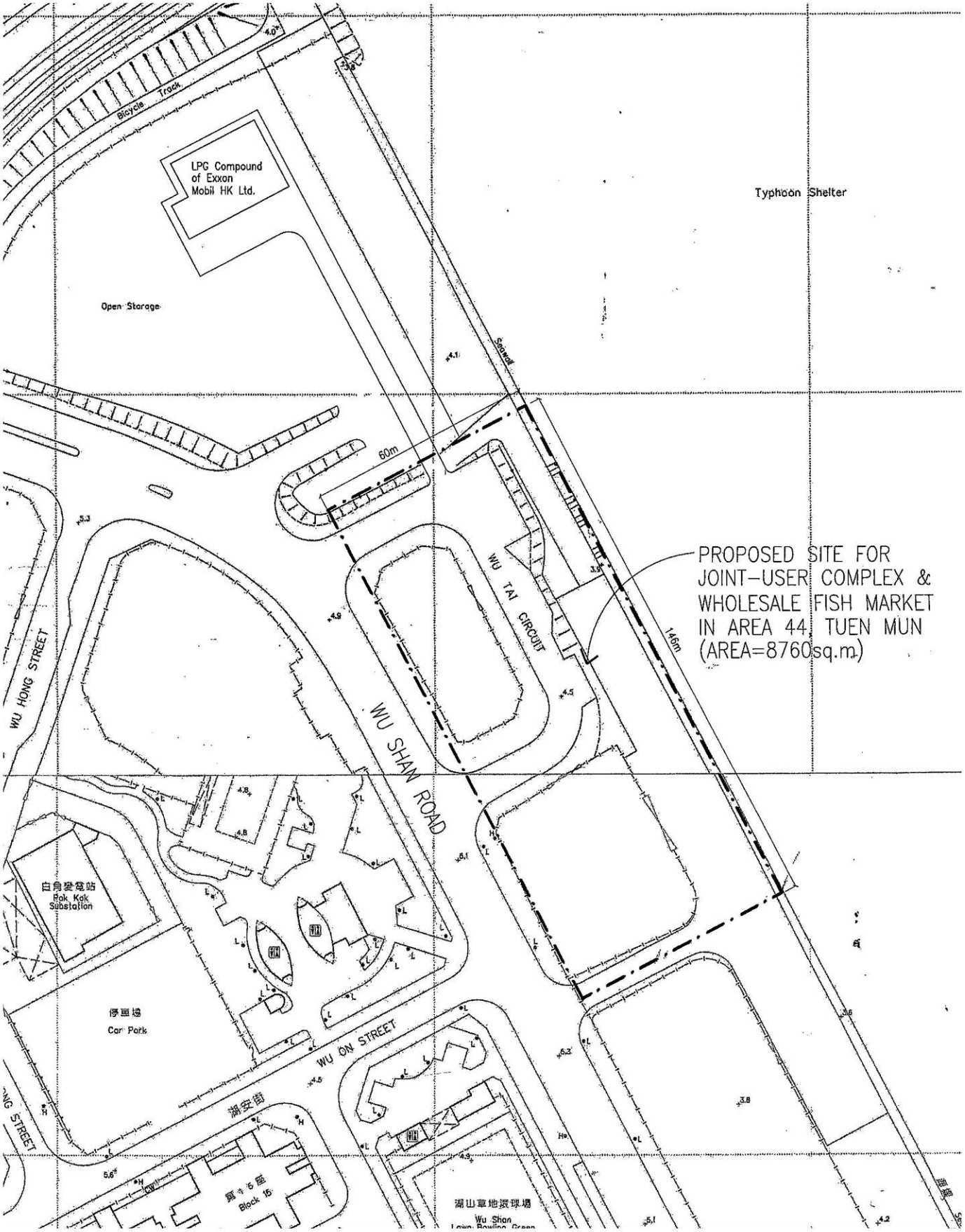
In accordance with the environmental site audits undertaken during the reporting quarter, the following recommendations are made:

- Increase the frequency of watering when the haul road appeared dry.

The ET will keep track on the EM&A programme to ensure compliance of environmental requirements and proper implementation of all necessary mitigation measures.

9.2. Conclusions

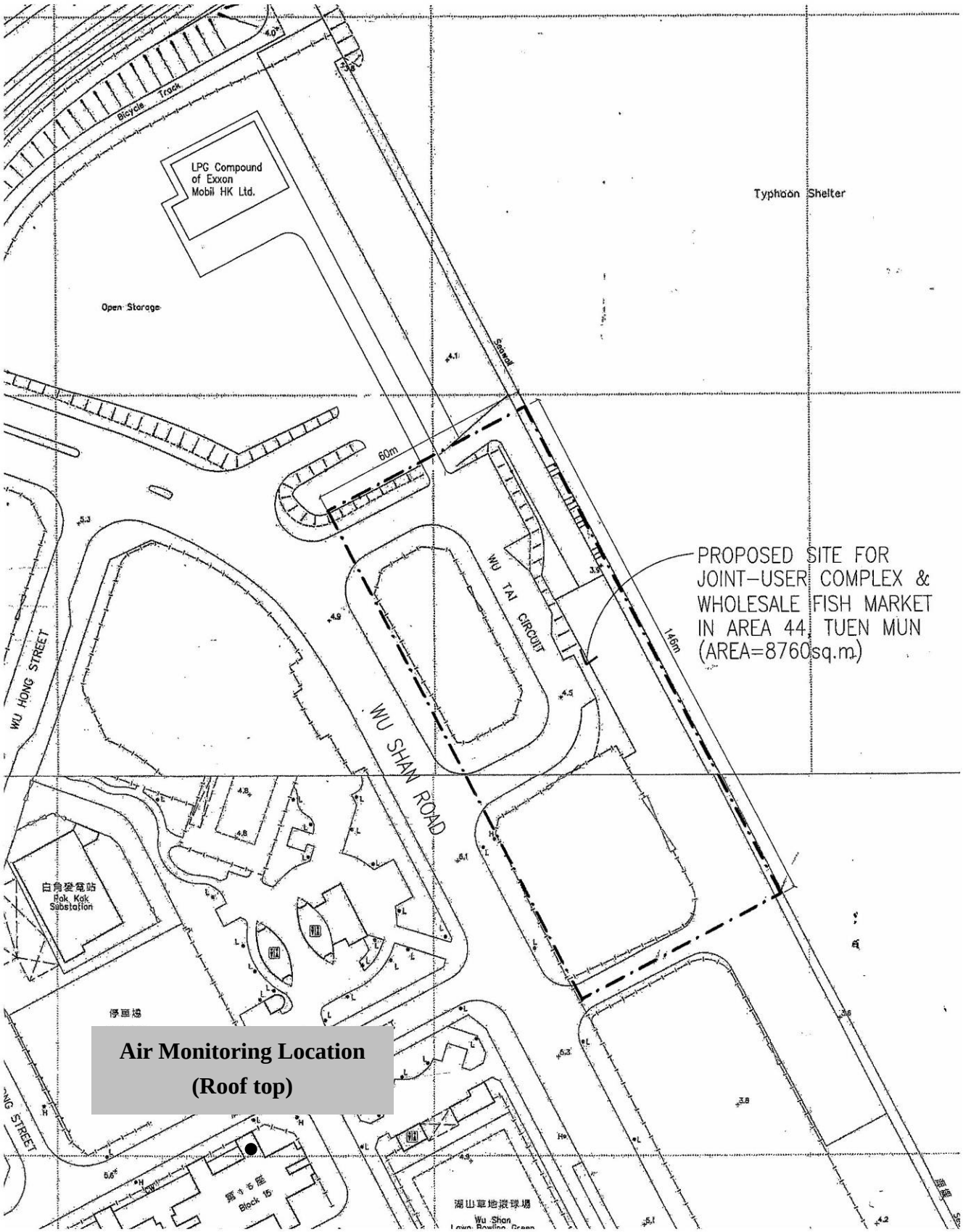
Environmental monitoring has been carried out for the proposed Joint User Complex and Wholesale Fish Market at Area 44, Tuen Mun. 1-hour and 24-hour TSP air quality monitoring and noise monitoring was conducted at Block 15, Yuet Wu Villa during the period from 1st February 2010 to 30th April 2010, in accordance with EM&A Manual and the requirement under Environmental Permit (No. EP-296/2007). All monitoring results were checked and reviewed. 48 sets of 1-hour TSP level monitoring, 16 sets of 24-hour TSP level monitoring, and 16 sets of noise monitoring were carried out during the reporting quarter. No exceedance of any of the monitoring data was recorded. No environmental complaints and notification of summons or prosecution were received during the seven quarter.



JOINT USER COMPLEX AND WHOLESALE FISH MARKET AT AREA 44, TUEN MUN

SITE LOCATION PLAN

Figure No.	Rev.:
1	0
Scale	Date
NTS	6/10



JOINT USER COMPLEX AND WHOLESALE FISH MARKET AT AREA 44, TUEN MUN

LOCATION OF AIR QUALITY MONITORING STATION

Figure No.	Rev.:
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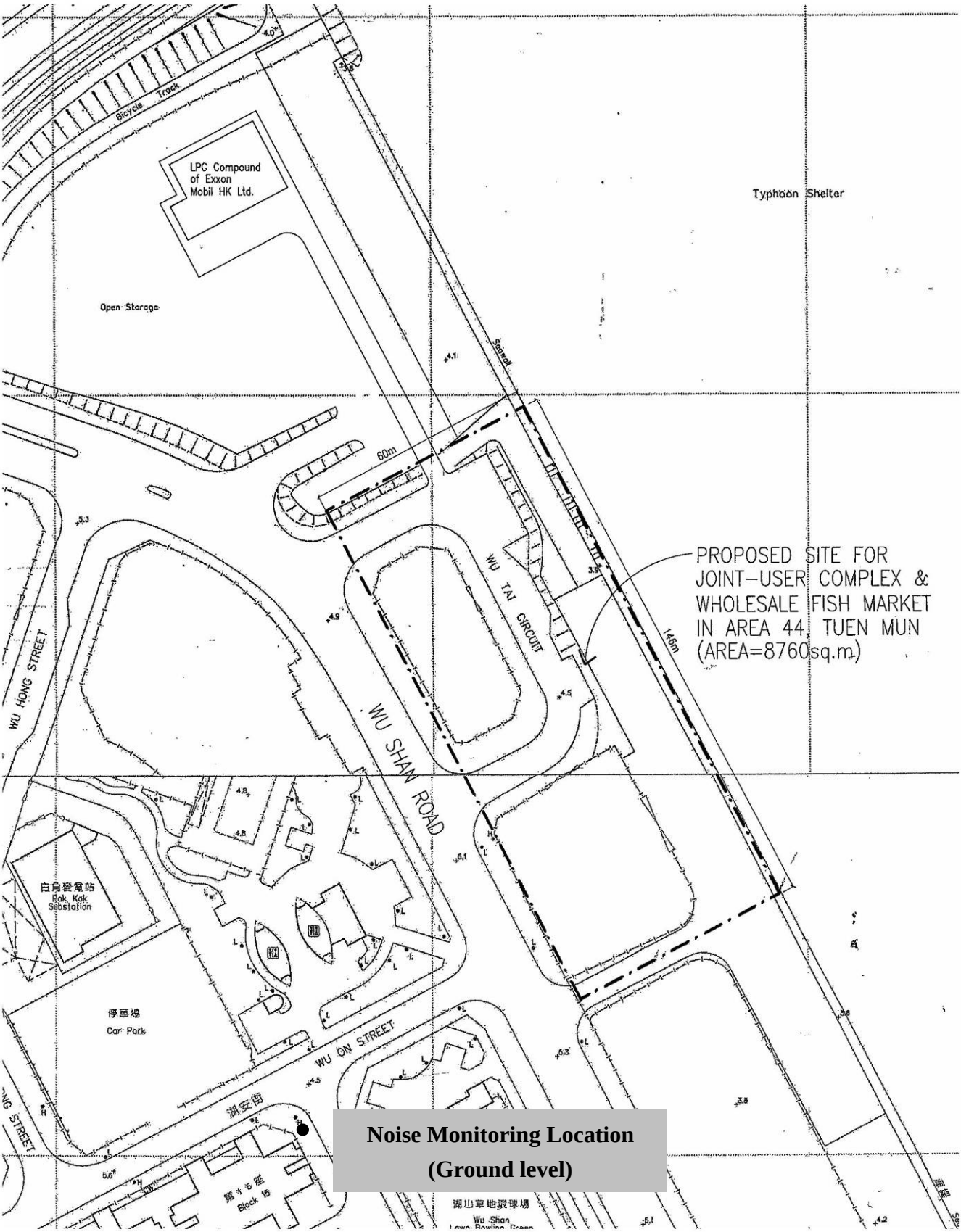
Scale	Date
NTS	6/10

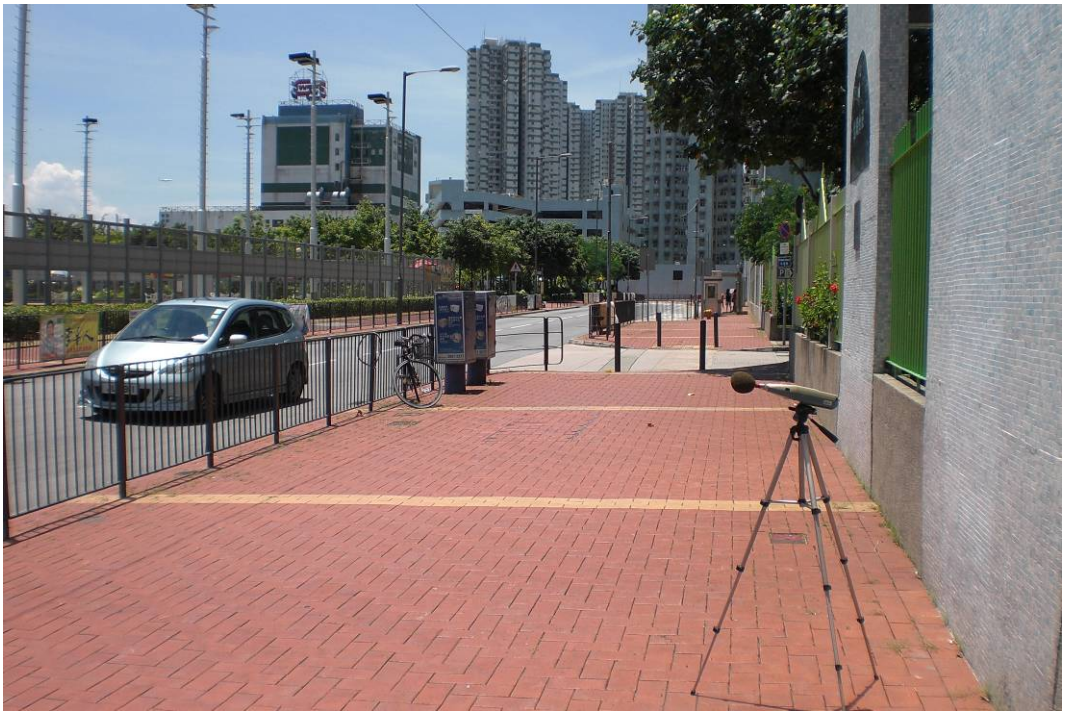


JOINT USER COMPLEX AND WHOLESALE FISH MARKET AT AREA 44, TUEN MUN **LOCATION OF NOISE MONITORING STATION**	Figure No. 3	Rev.: 0
	Scale NTS	Date 6/10

Roof top of Block 15, Yuet Wu Villa

High-Volume Dust Sampler

JOINT USER COMPLEX AND WHOLESALE FISH MARKET AT AREA 44, TUEN MUN **PHOTOS OF AIR QUALITY MONITORING STATION**	Figure No. 4	Rev.: 0	AEC
	Scale NTS	Date 6/10	



Noise monitoring station

View from the noise monitoring station

JOINT USER COMPLEX AND WHOLESALE FISH MARKET AT AREA 44, TUEN MUN **PHOTOS OF NOISE MONITORING STATION**	Figure No. 5	Rev.: 0	AEC
	Scale NTS	Date 6/10	

JOINT USER COMPLEX AND WHOLESALE FISH MARKET AT AREA 44, TUEN MUN

PHOTO OF CONSTRUCTION SITE FOR JUNIOR POLICE OFFICERS' MARRIED QUARTERS

Figure No.	Rev.:
6	0
Scale	Date
NTS	6/10

AEC

Appendix A

Detail Schedule of Monitoring Programme

Schedule for air and noise monitoring programme of Tuen Mun Wholesale Fish Market

Monitoring schedule for the reporting month

Date	Start Time
3rd February 2010	13:00
9th February 2010	13:00
12th February 2010	08:00
18th February 2010	13:00
24th February 2010	08:30
2nd March 2010	08:30
8th March 2010	08:30
13th March 2010	08:30
19th March 2010	08:30
25th March 2010	08:30
31st March 2010	08:30
7th April 2010	13:00
13th April 2010	13:00
19th April 2010	13:00
24th April 2010	13:00
30th April 2010	13:00

Monitoring schedule of the coming month

Date	Time
6th May 2010	To be confirmed
12th May 2010	To be confirmed
18th May 2010	To be confirmed
24th May 2010	To be confirmed
29th May 2010	To be confirmed

Appendix B

Calibration Record of High-Volume TSP Sampler

High-Volume TSP Sampler
5-Point Calibration Record

Location : A1, Yuet Wu Villa
Calibrated by : P.F.Yeung
Date : 5/01/2010

Sampler
Model : GMWS-2310 ACCU-VOL
Serial Number : S/N 0890

Calibration Orfice and Standard Calibration Relationship
Serial Number : 9833620
Service Date : 18 May 2009
Slope (m) : 1.97702
Intercept (b) : -0.00070
Correlation Coefficient(r) : 0.99992

Standard Condition
Pstd (hpa) : 1013
Tstd (K) : 298.18

Calibration Condition
Pa (hpa) : 1016
Ta(K) : 293

Zero Erro of Sampler Flow Rate Indication

IO : 0.0

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (indicated flow)	Y
1	18 holes	12.4	3.578	1.810	54	54.9
2	13 holes	9.8	3.181	1.609	47	47.8
3	10 holes	8.0	2.874	1.454	41	41.7
4	7 holes	4.8	2.226	1.126	30	30.5
5	5 holes	2.9	1.731	0.876	20	20.3

Sampler Calibration Relationship

Slope(m):36.695 Intercept(b): -11.442 Correlation Coefficient(r): 0.9996

Checked by: Magnum Fan Date: 6/01/2010

High-Volume TSP Sampler

1-Point Calibration Record

Location	:	A1 (Tuen Mun)
Calibrated by	:	P.F.Yeung
Date	:	05/03/2010

Sampler

Model	:	GMWS-2310 ACCU-VOL
Serial Number	:	S/N 0890

Calibration Orfice and Standard Calibration Relationship

Serial Number	:	9833620
Service Date	:	18 May 2009
Slope (m)	:	1.97702
Intercept (b)	:	-0.00070
Correlation Coefficient(r)	:	0.99992

Standard Condition

Pstd (hpa)	:	1013
Tstd (K)	:	298.18

Calibration Condition

Pa (hpa)	:	1018
Ta(K)	:	292

IC (Indicated flow) : 36 cfm

Actual flow : 1.29 m^3/min

Checked by: Magnum Fan Date: 06/03/2010

Appendix C

Calibration Certification of the Sound Level Meter and Calibrator

輝創工程有限公司

Sun Creation Engineering Limited Calibration and Testing Laboratory

Certificate No. : C092284

Certificate of Calibration

This is to certify that the equipment

Description : Sound Level Meter

Manufacturer : Rion

Model No. : NL-31

Serial No. : 00410224

has been calibrated for the specific items and ranges.
The results are shown in the Calibration Report No. C092284.

The equipment is supplied by

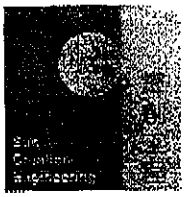
Co. Name : Envirotech Services Co.

Address : Shop 6, G/F., Casio Mansion, 209 Shauketwan Road, Hong Kong

Date of Issue : 8 May 2009

Certified by : K C Lee

Calibration and Testing Laboratory of Sun Creation Engineering Limited
6/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
Tel: 2927 2606 Fax: 2741 8886 E-mail: enlab@suncreation.com Website: www.suncreation.com



輝創工程有限公司

Sun Creation Engineering Limited Calibration and Testing Laboratory

Certificate No. : C093598

Certificate of Calibration

This is to certify that the equipment

Description : Sound Level Calibrator

Manufacturer : Rion

Model No. : NC-73

Serial No. : 10786708

has been calibrated for the specific items and ranges.
The results are shown in the Calibration Report No. C093598.

The equipment is supplied by

Co. Name : Envirotech Services Co.

Address : Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road, Hong Kong

Date of Issue : 10 July 2009

Certified by : H C Chan

Calibration and Testing Laboratory of Sun Creation Engineering Limited
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
Tel: 2927 2606 Fax: 2744 8986 E-mail: calib@suncreation.com Website: www.suncreation.com

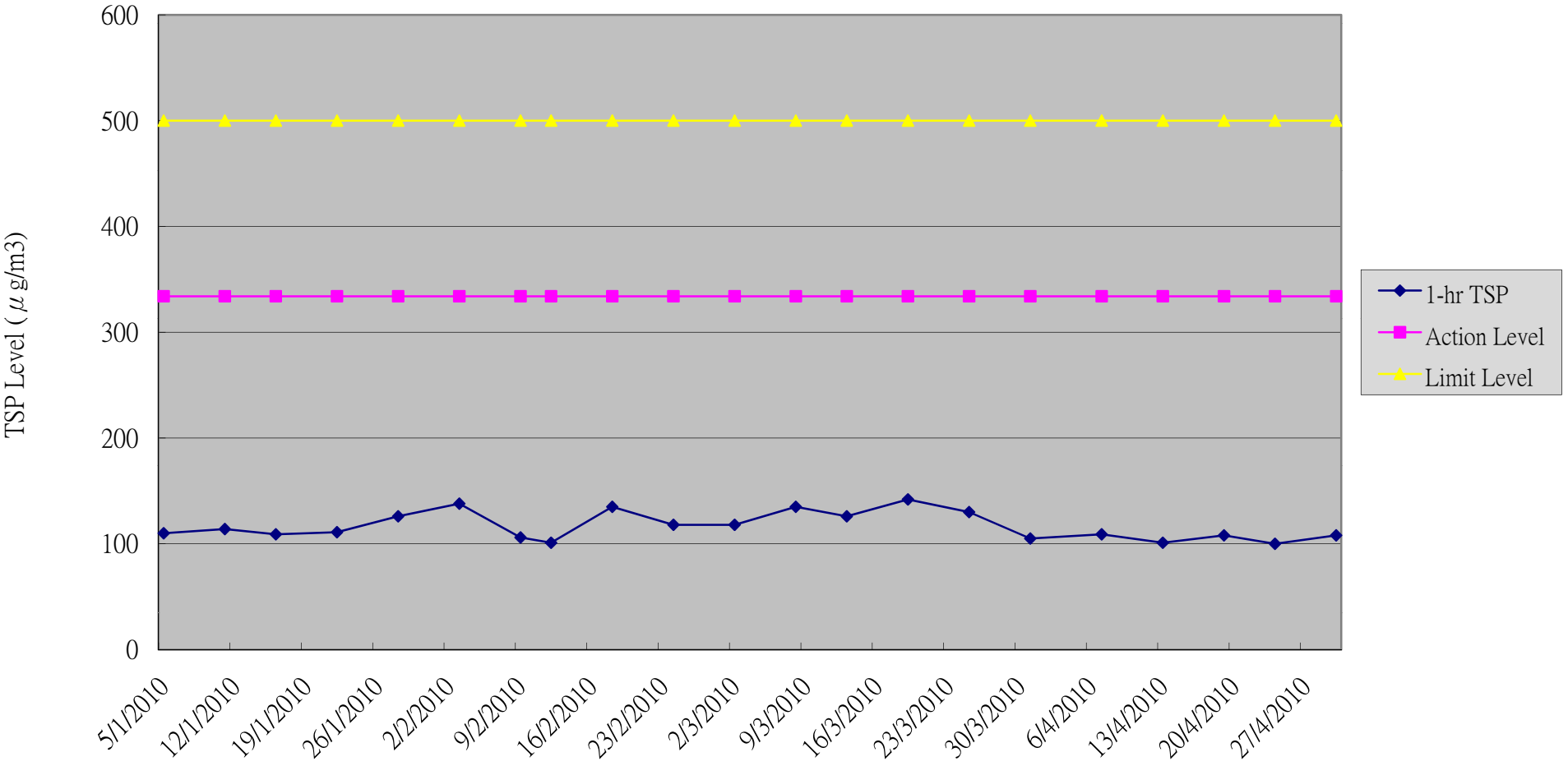
Appendix D

Summary and Graphical Plot of 1-Hour TSP Monitoring Record

Impact Monitoring for Fish Market Project in Tuen Mun
Air Quality Monitoring: 1-hour TSP
Quarter: February 2010 - April 2010

Date	Time	1-hr TSP (μg/m3)	Average
3-Feb-10	13:00 - 14:00	153	156
	14:00 - 15:00	147	
	15:00 - 16:00	169	
9-Feb-10	13:00 - 14:00	106	106
	14:00 - 15:00	108	
	15:00 - 16:00	104	
12-Feb-10	08:00 - 09:00	88	101
	09:00 - 10:00	98	
	10:00 - 11:00	118	
18-Feb-10	13:00 - 14:00	123	135
	14:00 - 15:00	147	
	15:00 - 16:00	134	
24-Feb-10	08:30 - 09:30	112	118
	09:30 - 10:30	119	
	10:30 - 11:30	122	
2-Mar-10	08:30 - 09:30	126	118
	09:30 - 10:30	113	
	10:30 - 11:30	115	
8-Mar-10	08:30 - 09:30	136	135
	09:30 - 10:30	136	
	10:30 - 11:30	132	
13-Mar-10	08:30 - 09:30	116	126
	09:30 - 10:30	125	
	10:30 - 11:30	137	
19-Mar-10	08:30 - 09:30	147	142
	09:30 - 10:30	133	
	10:30 - 11:30	146	
25-Mar-10	08:30 - 09:30	130	130
	09:30 - 10:30	137	
	10:30 - 11:30	122	
31-Mar-10	08:30 - 09:30	105	105
	09:30 - 10:30	106	
	10:30 - 11:30	104	
7-Apr-10	13:00 - 14:00	96	109
	14:00 - 15:00	115	
	15:00 - 16:00	115	
13-Apr-10	13:00 - 14:00	115	101
	14:00 - 15:00	111	
	15:00 - 16:00	77	
19-Apr-10	13:00 - 14:00	112	108
	14:00 - 15:00	97	
	15:00 - 16:00	115	
24-Apr-10	13:00 - 14:00	110	100
	14:00 - 15:00	88	
	15:00 - 16:00	102	
30-Apr-10	13:00 - 14:00	107	108
	14:00 - 15:00	115	
	15:00 - 16:00	103	

1-hr TSP Levels (February 2010 - April 2010)



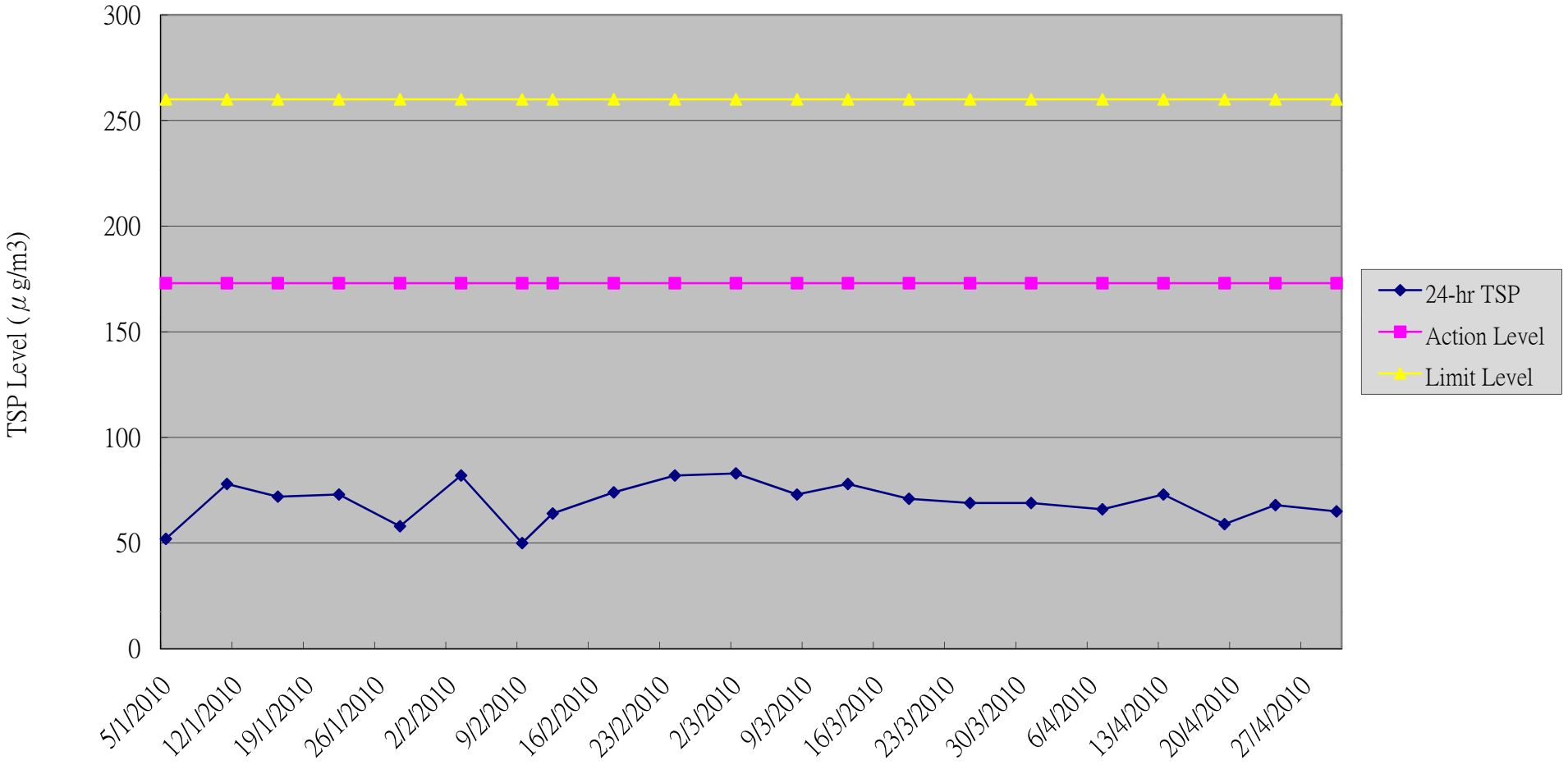
Appendix E

Summary and Graphical Plot of 24-Hour TSP Monitoring Record

Impact Monitoring for Fish Market Project in Tuen Mun
Air Quality Monitoring: 24-hour TSP
Quarter: February 2010 - April 2010

Date	Start time	24-hr TSP ($\mu g/m^3$)
3-Feb-10	16:00	82
9-Feb-10	16:00	50
12-Feb-10	11:00	64
18-Feb-10	16:00	74
24-Feb-10	11:30	82
2-Mar-10	11:30	83
8-Mar-10	11:30	73
13-Mar-10	11:30	78
19-Mar-10	11:30	71
25-Mar-10	11:30	69
31-Mar-10	11:30	69
7-Apr-10	11:30	66
13-Apr-10	11:30	73
19-Apr-10	11:30	59
24-Apr-10	11:30	68
30-Apr-10	11:30	65

24-hour TSP Levels (February 2010 - April 2010)



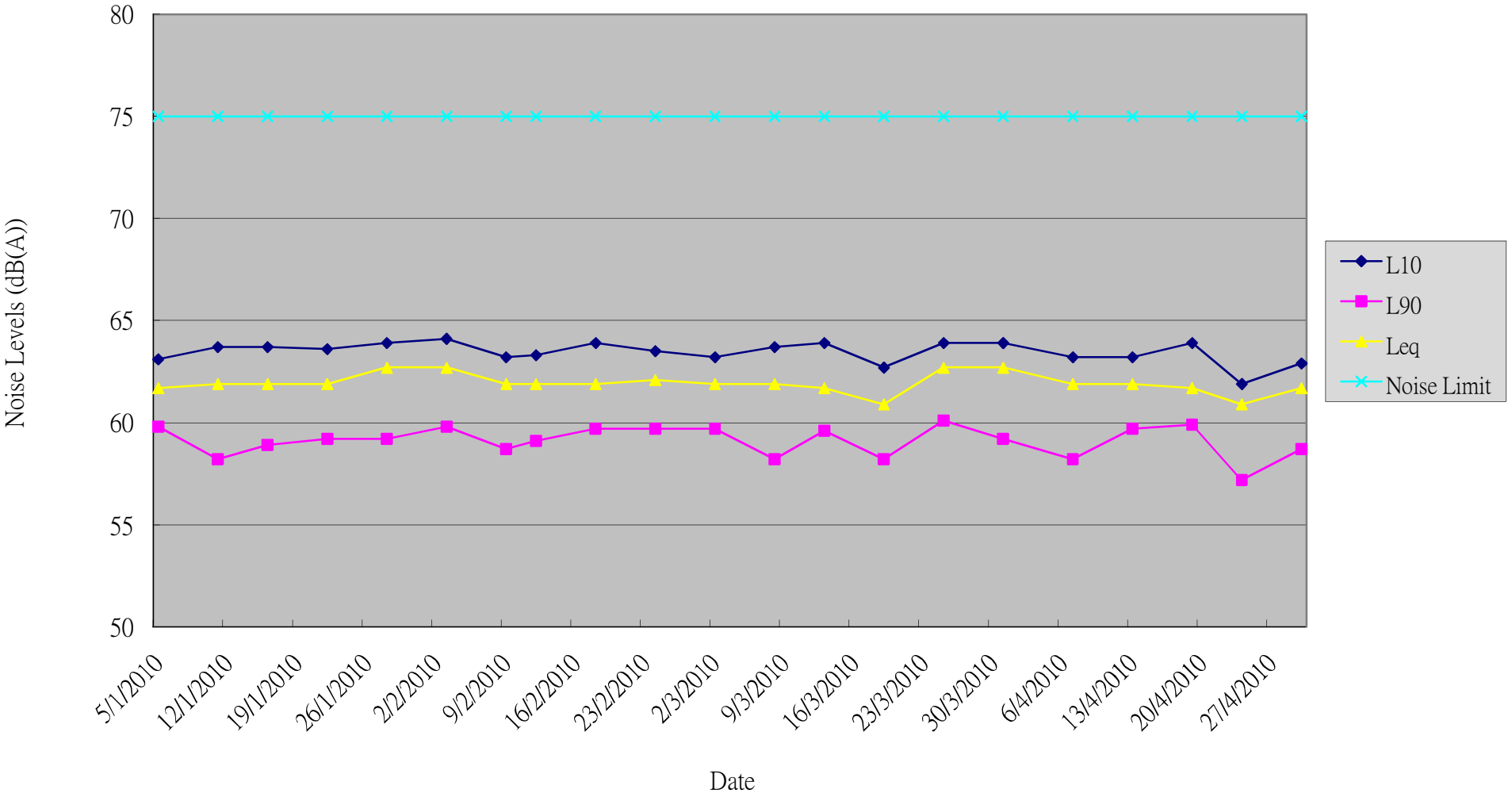
Appendix F

Summary and Graphical Plot of Noise Monitoring Record

Impact Monitoring for Fish Market Project in Tuen Mun
Noise Monitoring
Quarter: February 2010 - April 2010

Date	Time	L10(30mins) (dB(A))	L90(30mins) (dB(A))	Leq(30mins) (dB(A))
3-Feb-10	13:10 - 13:40	64.1	59.8	62.7
9-Feb-10	13:10 - 13:40	63.2	58.7	61.9
12-Feb-10	09:10 - 09:40	63.3	59.1	61.9
18-Feb-10	13:10 - 13:40	63.2	59.7	61.9
24-Feb-10	09:00 - 09:30	63.9	59.7	62.1
2-Mar-10	08:50 - 09:20	63.2	59.7	61.9
8-Mar-10	08:50 - 09:20	63.7	58.2	61.9
13-Mar-10	08:50 - 09:20	63.9	59.6	61.7
19-Mar-10	08:50 - 09:20	62.7	58.2	60.9
25-Mar-10	08:50 - 09:20	63.9	60.1	62.7
31-Mar-10	08:50 - 09:20	63.9	59.2	62.7
7-Apr-10	14:08 - 14:38	63.2	58.2	61.9
13-Apr-10	13:08 - 13:38	63.2	59.7	61.9
19-Apr-10	13:05 - 13:35	63.9	59.9	61.7
24-Apr-10	13:08 - 13:38	61.9	57.2	60.9
30-Apr-10	13:10 - 13:40	62.9	58.7	61.7

Noise Monitoring Record (February2010- April 2010)

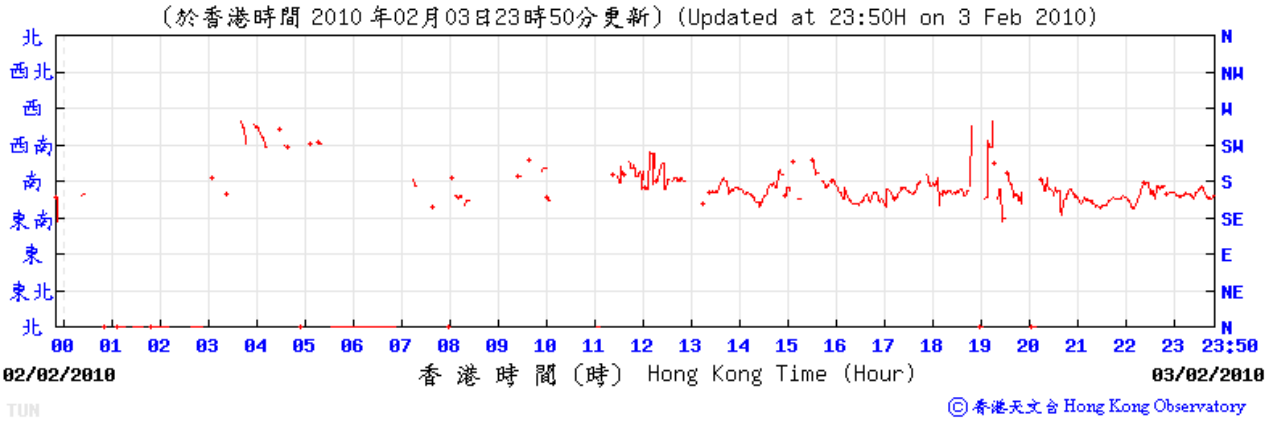


Appendix G

Wind Record from Hong Kong Observatory

Wind direction at Hong Kong Observatory (Tuen Mun Automatic Weather Station)

3/2/2010



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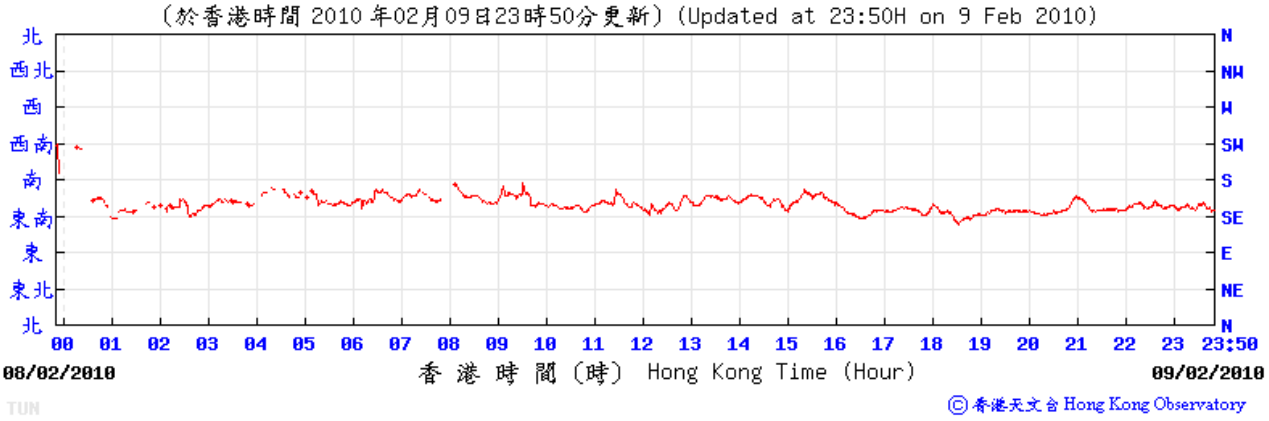

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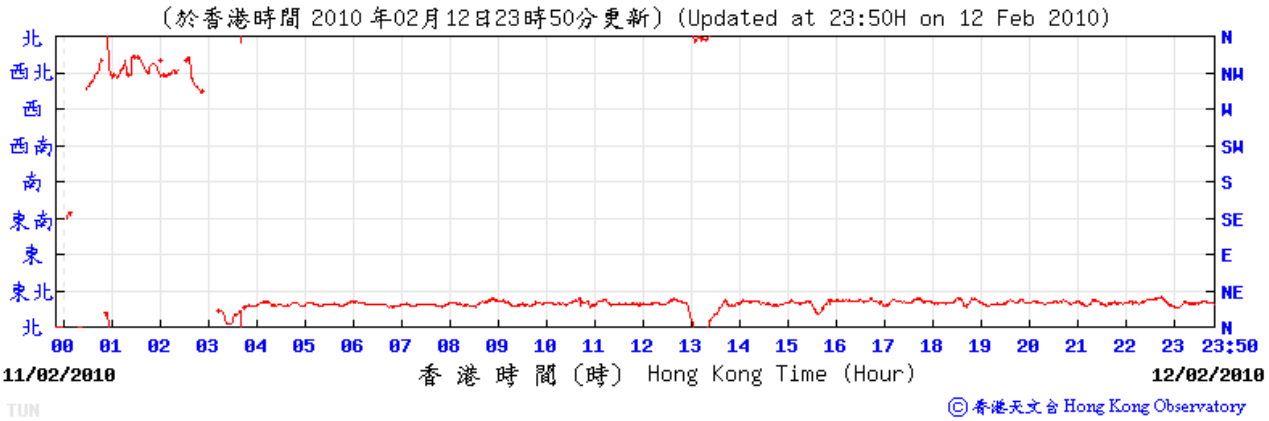

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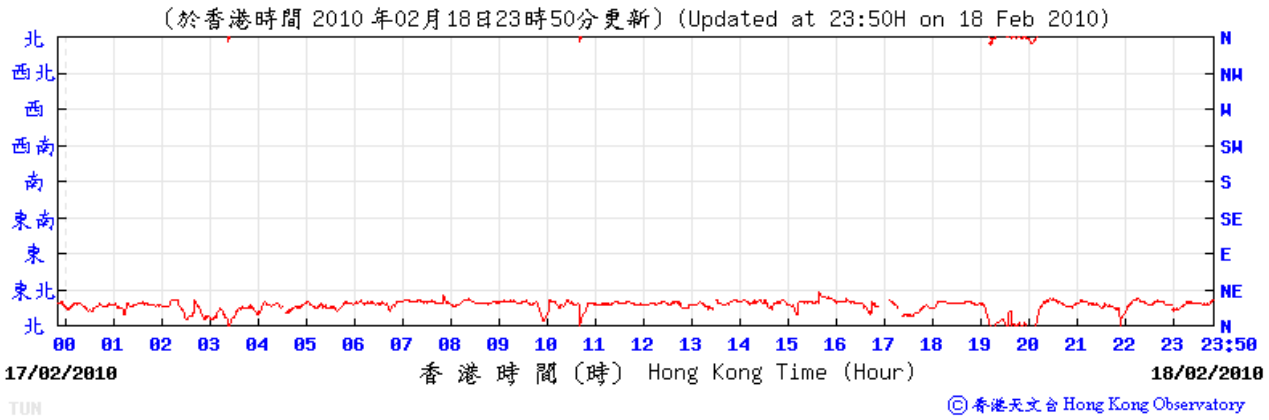

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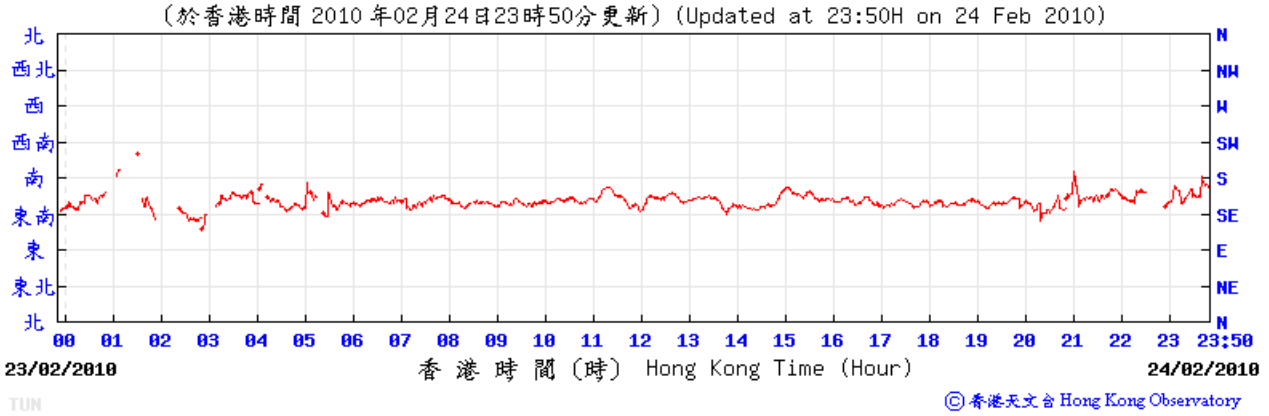

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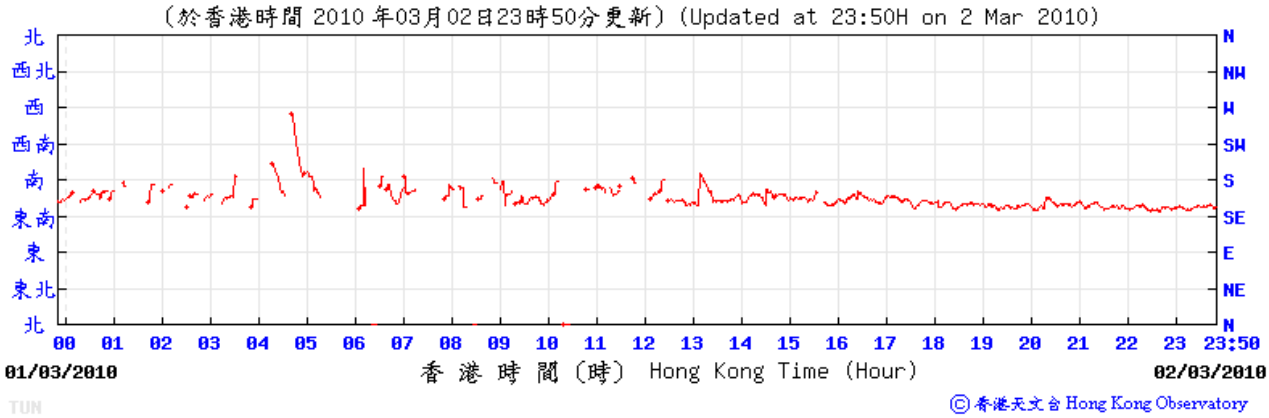

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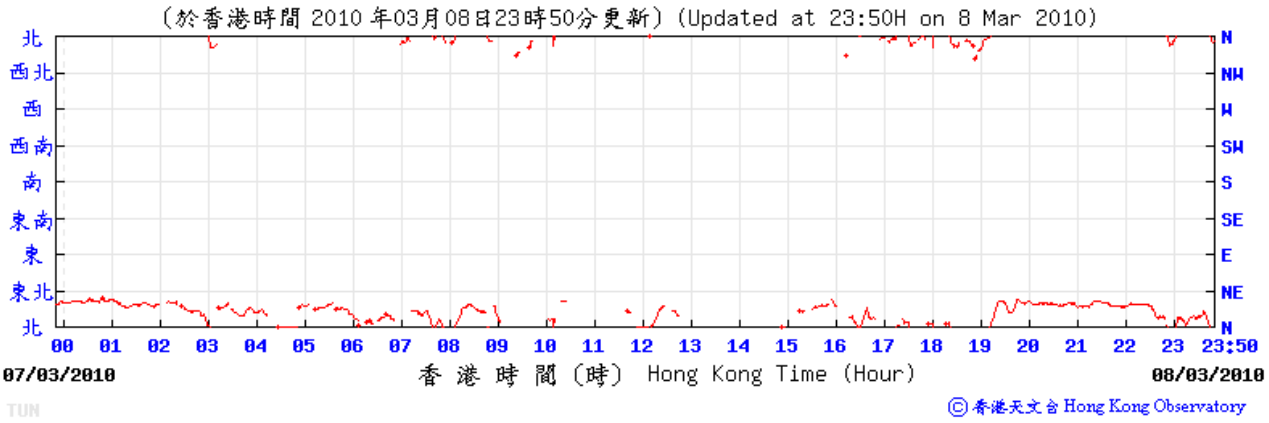

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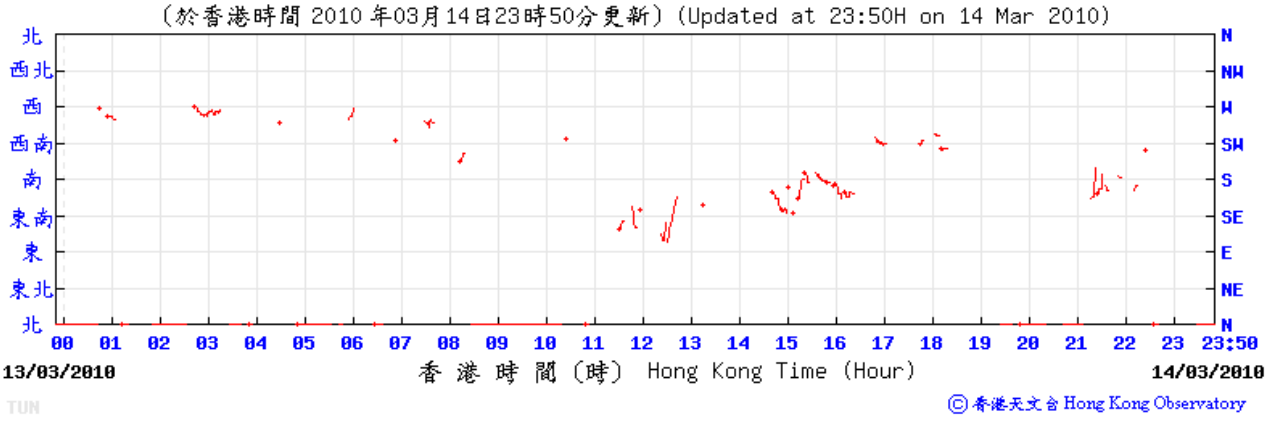

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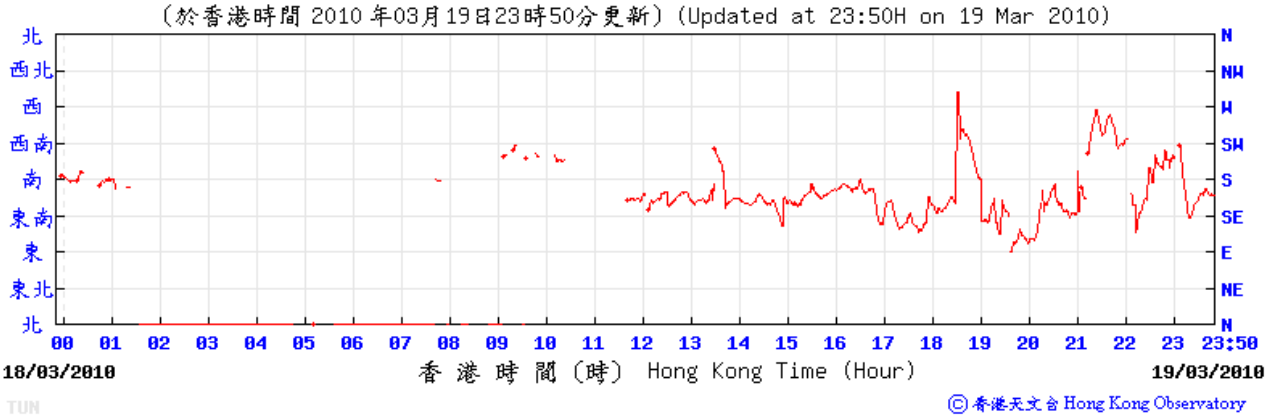

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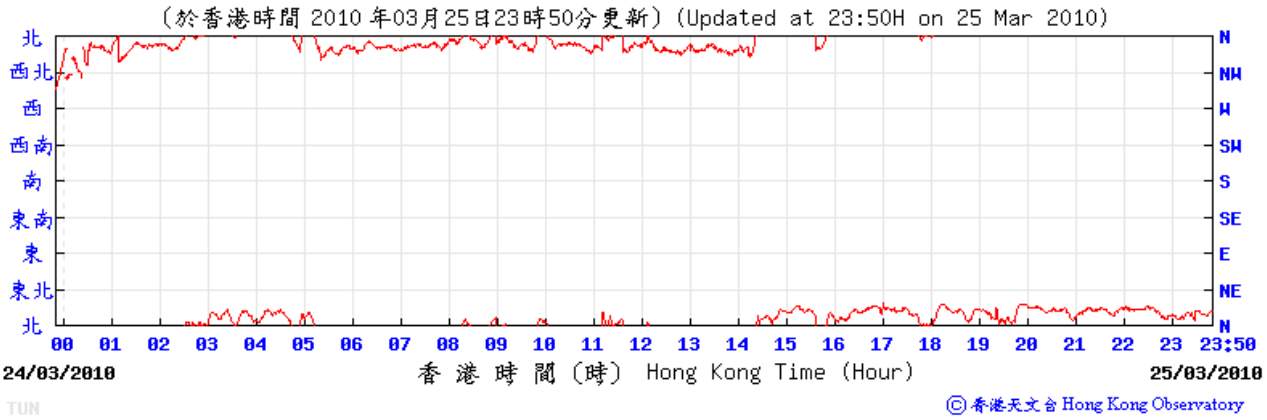

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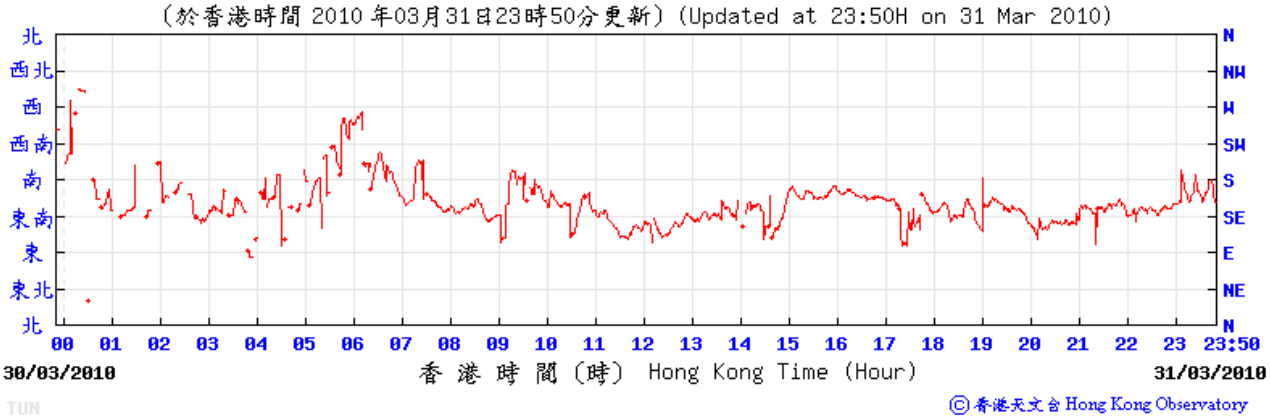

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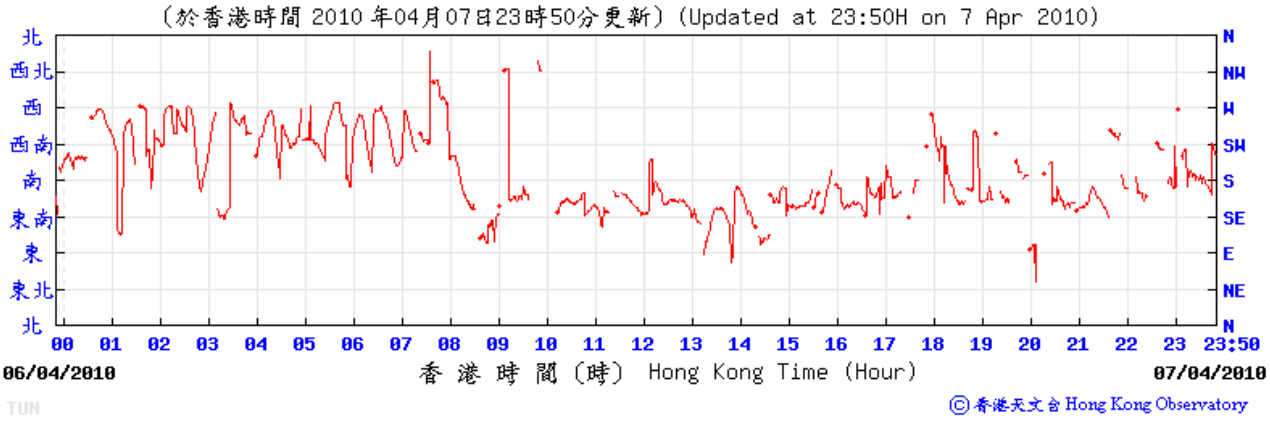

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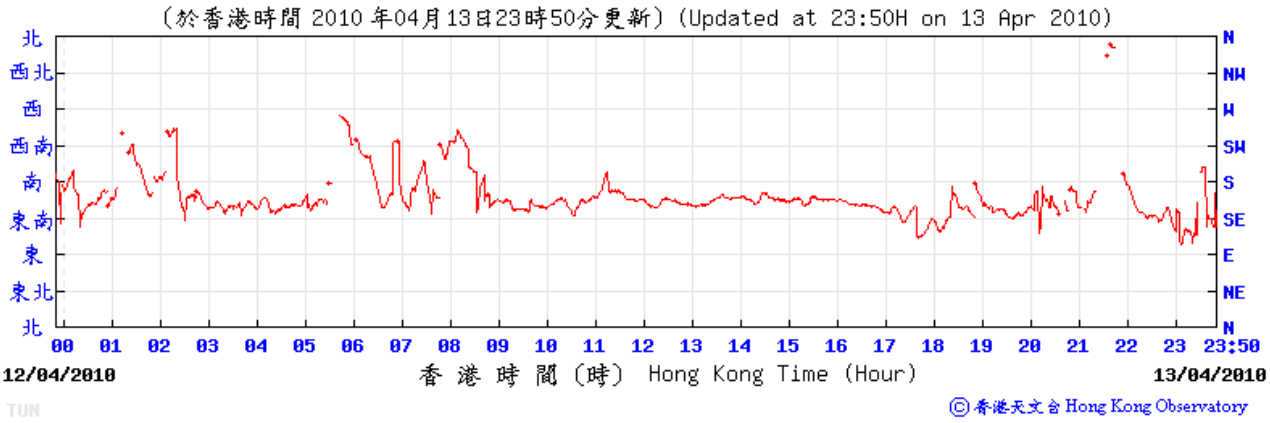

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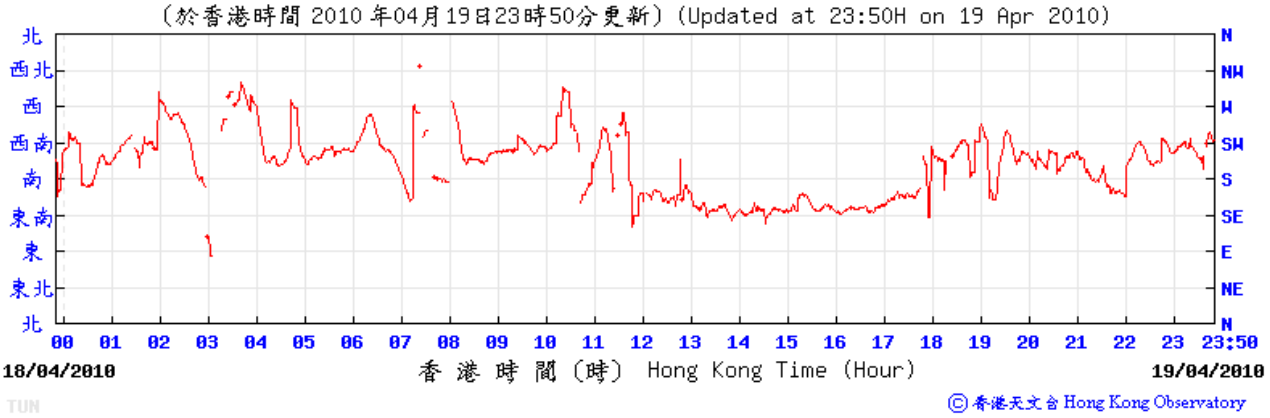

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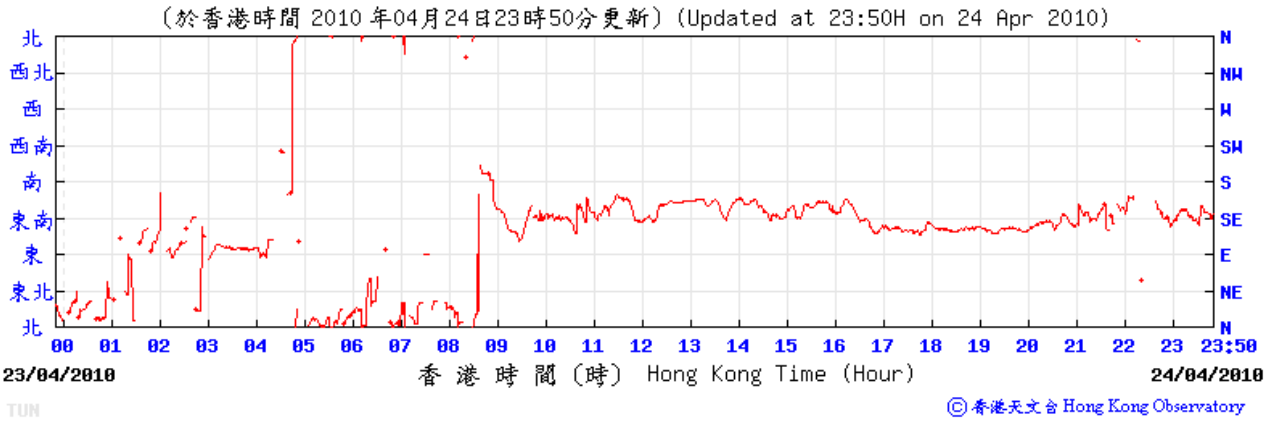

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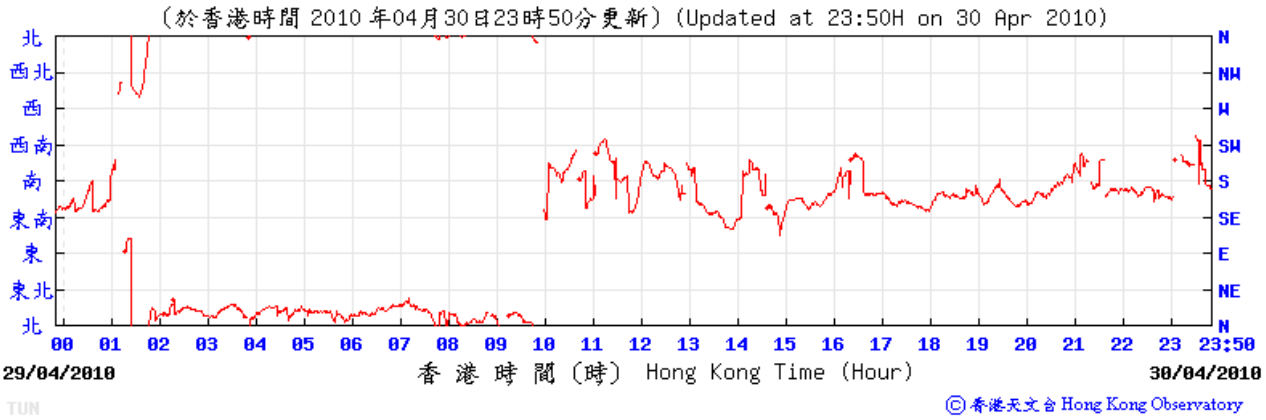
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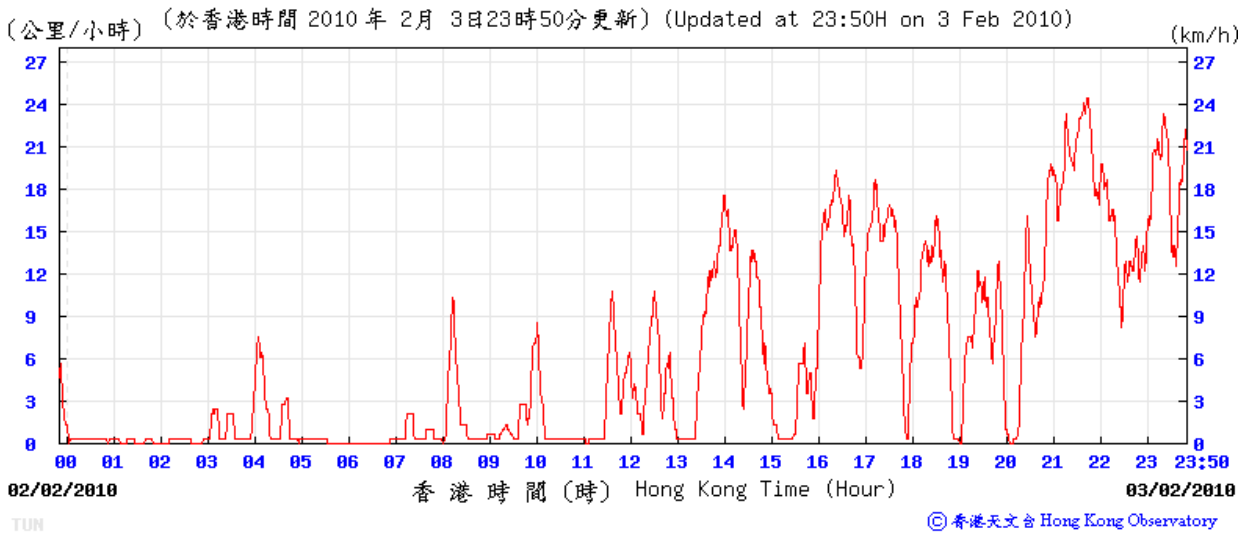
© 香港天文台 Hong Kong Observatory

Wind speed at Hong Kong Observatory (Tuen Mun Automatic Weather Station)

3/2/2010



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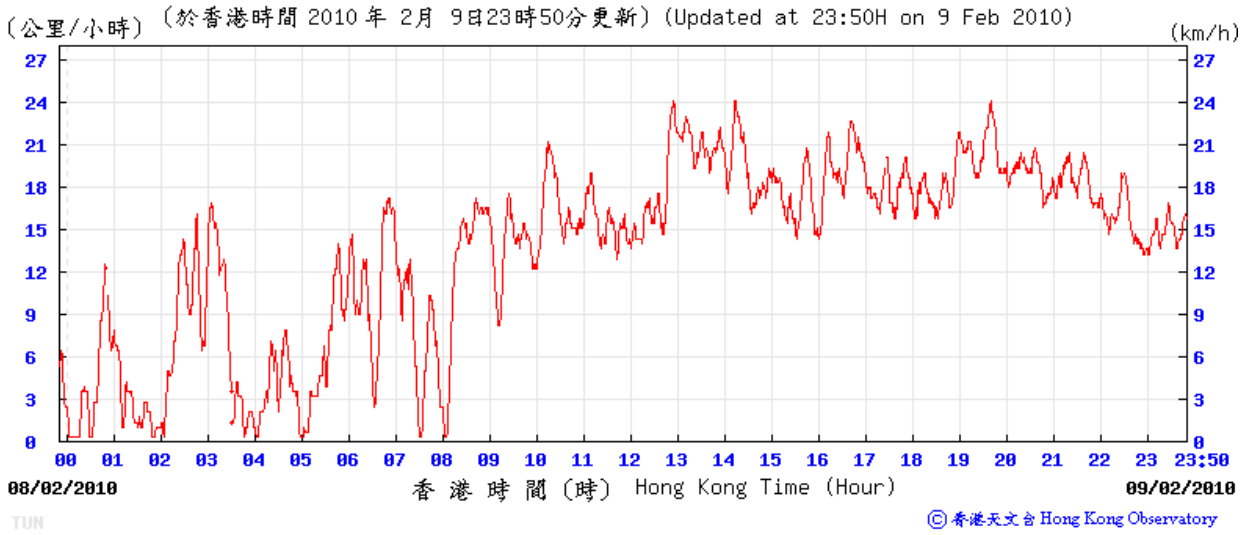

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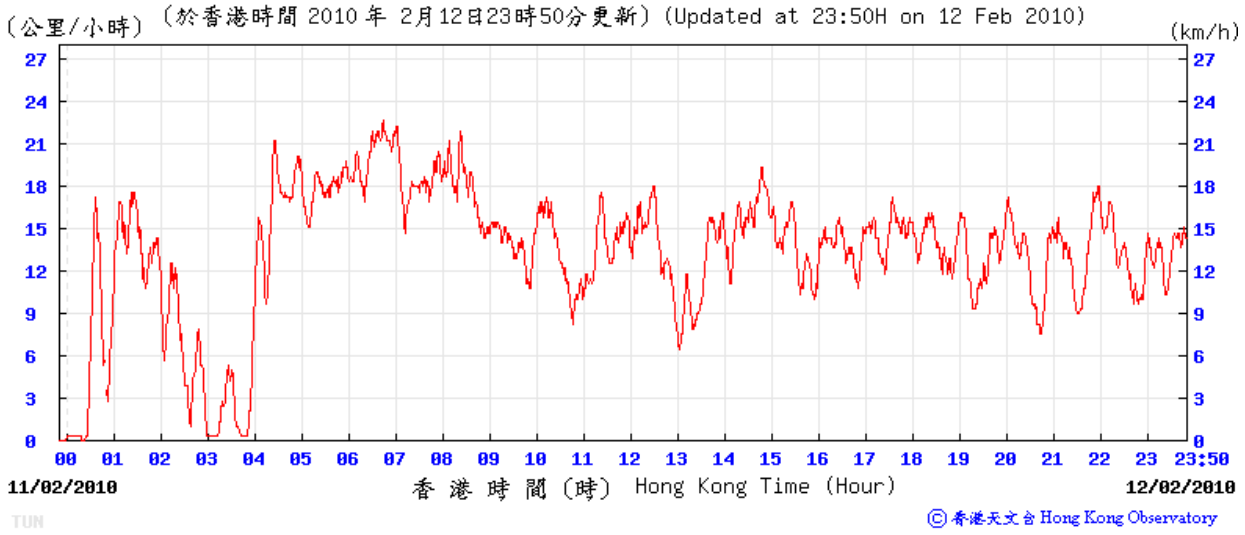

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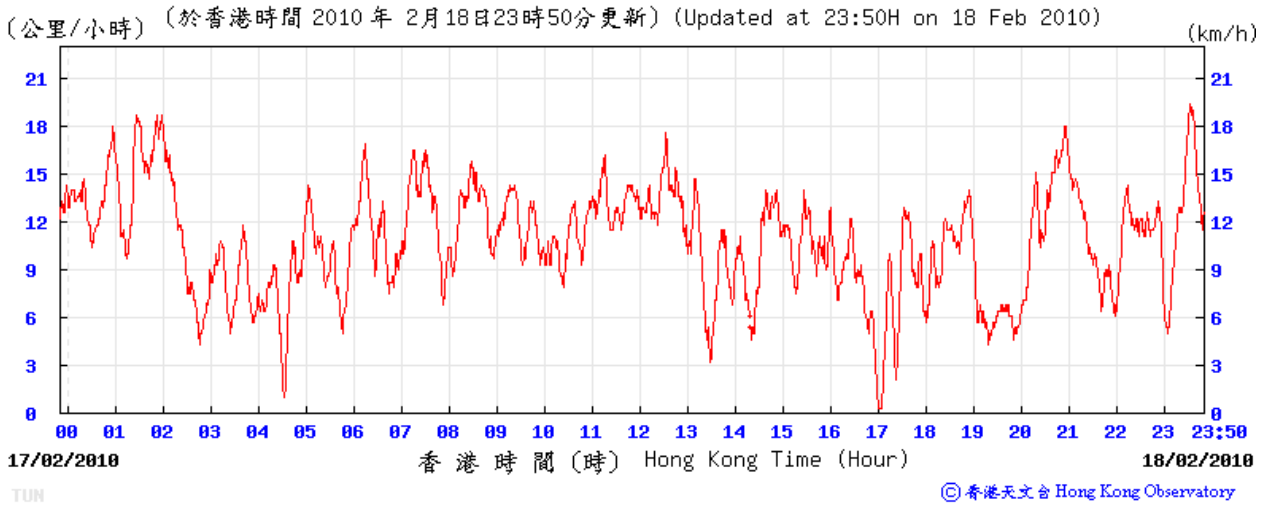

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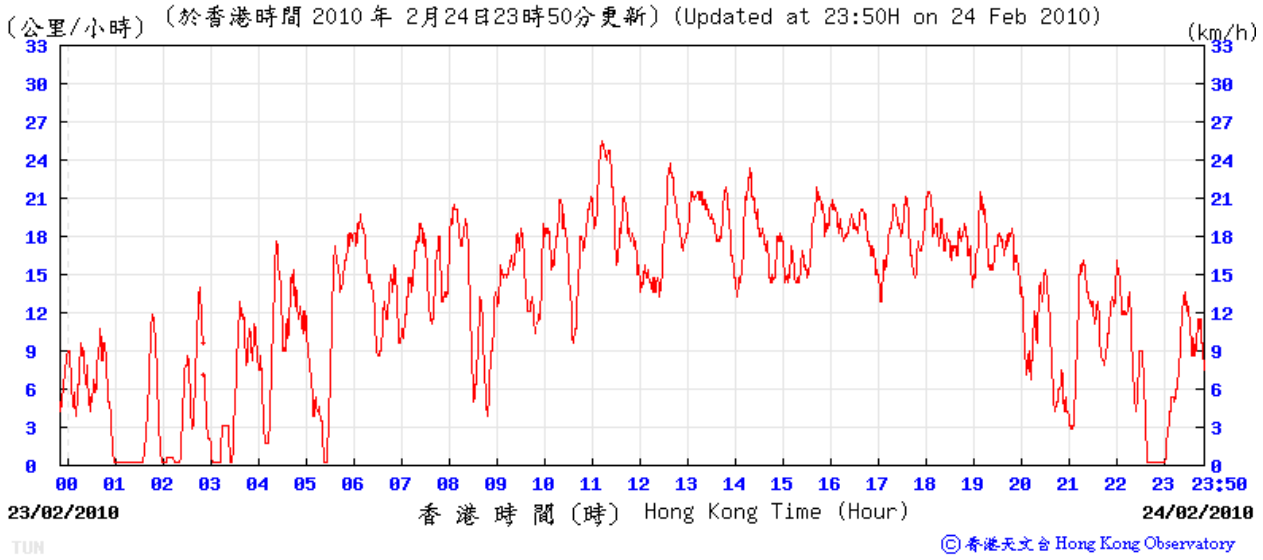

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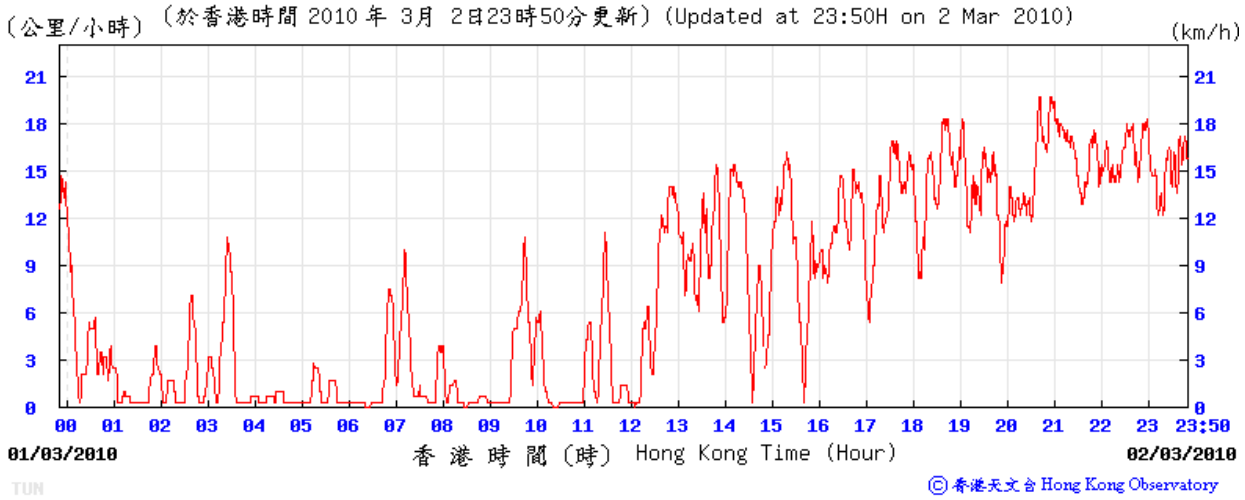

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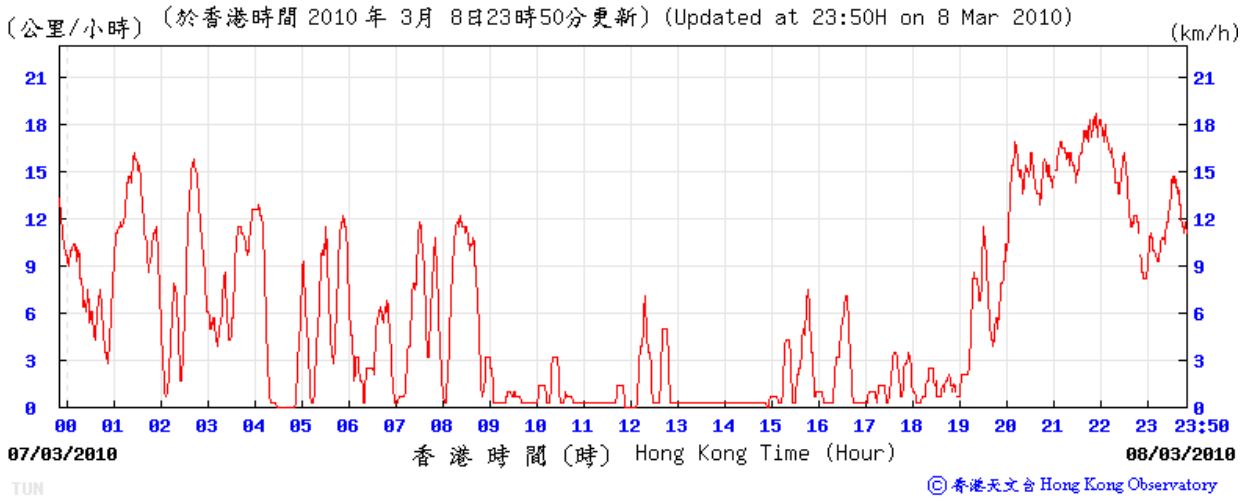

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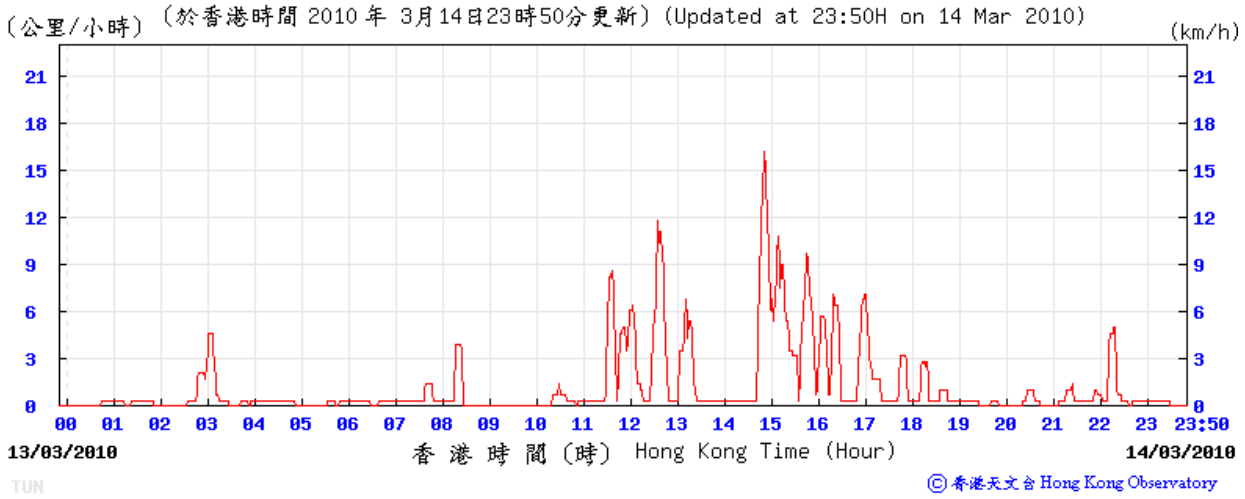

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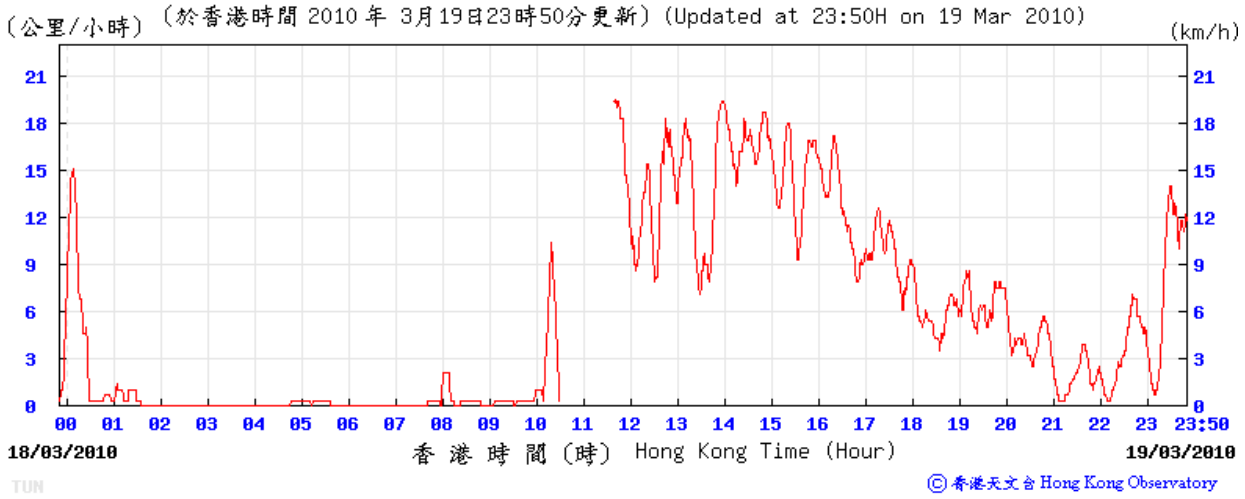

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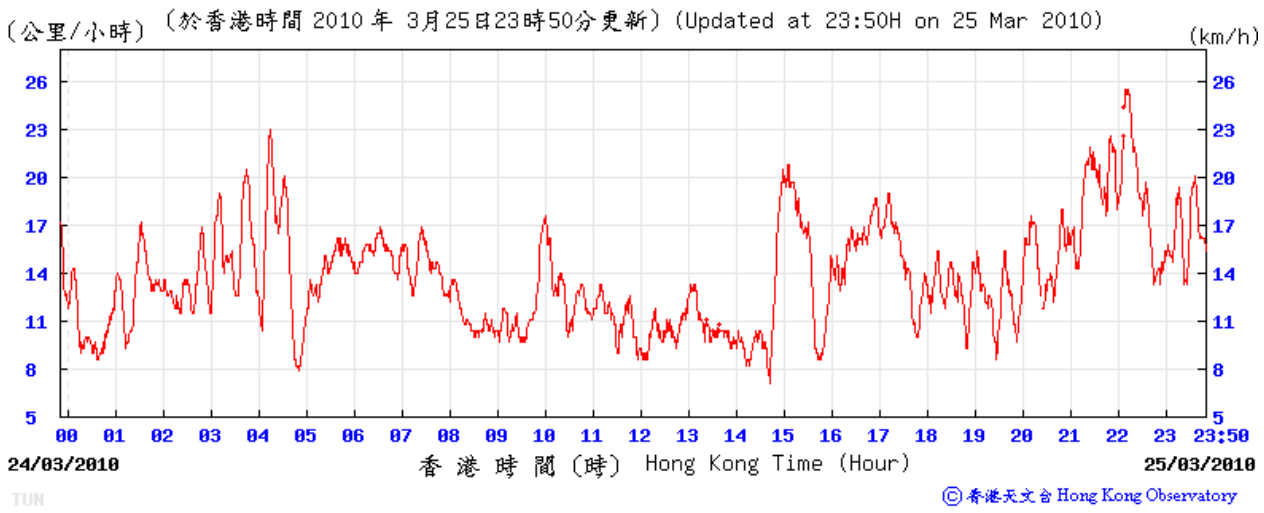

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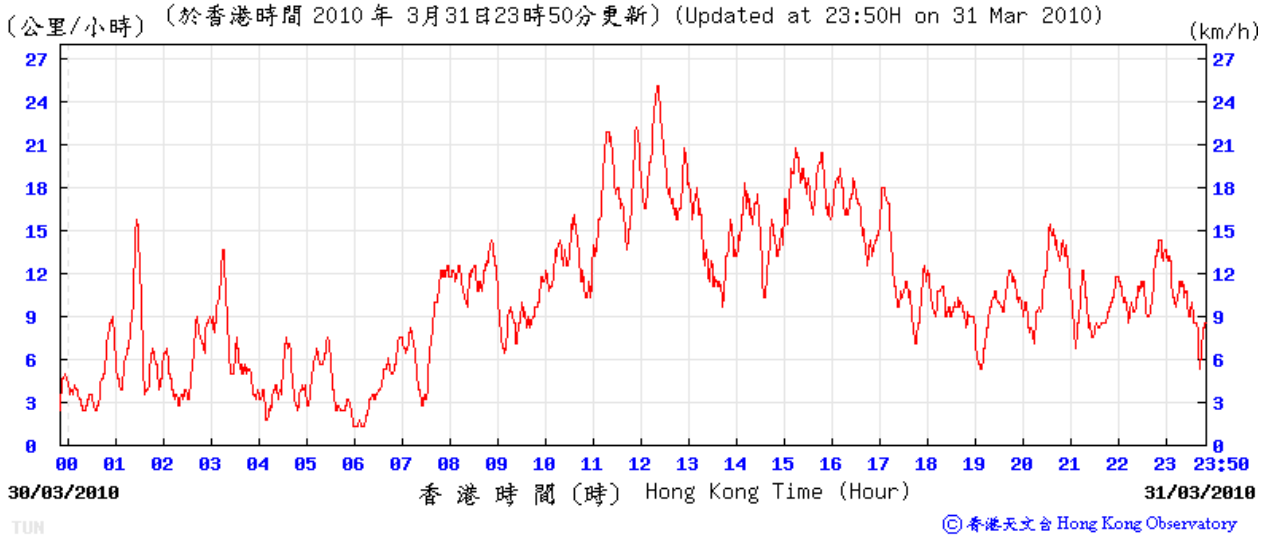

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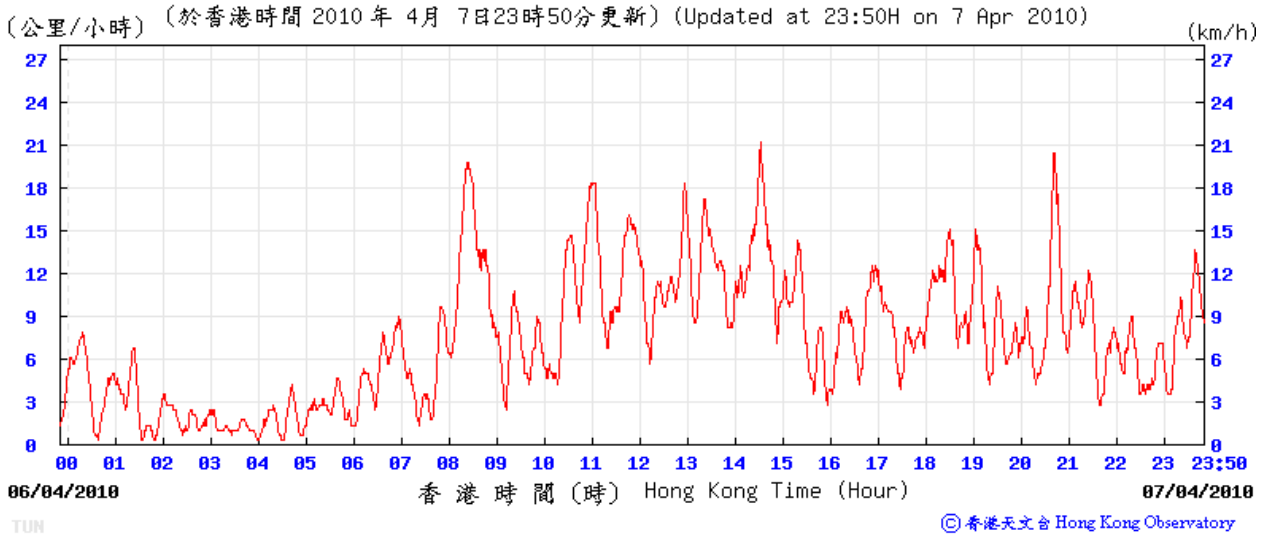

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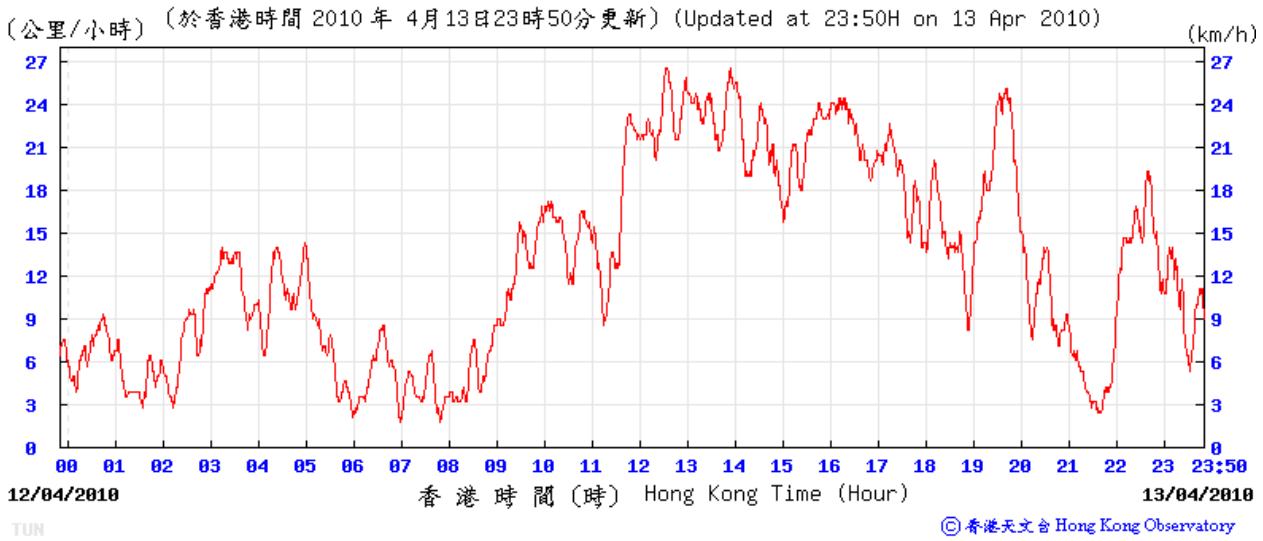

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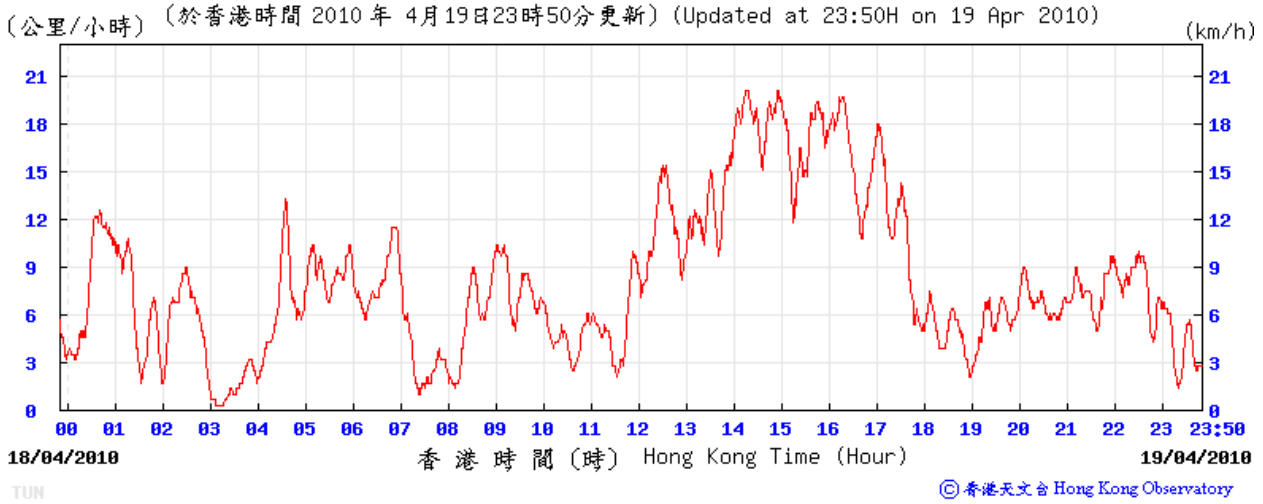

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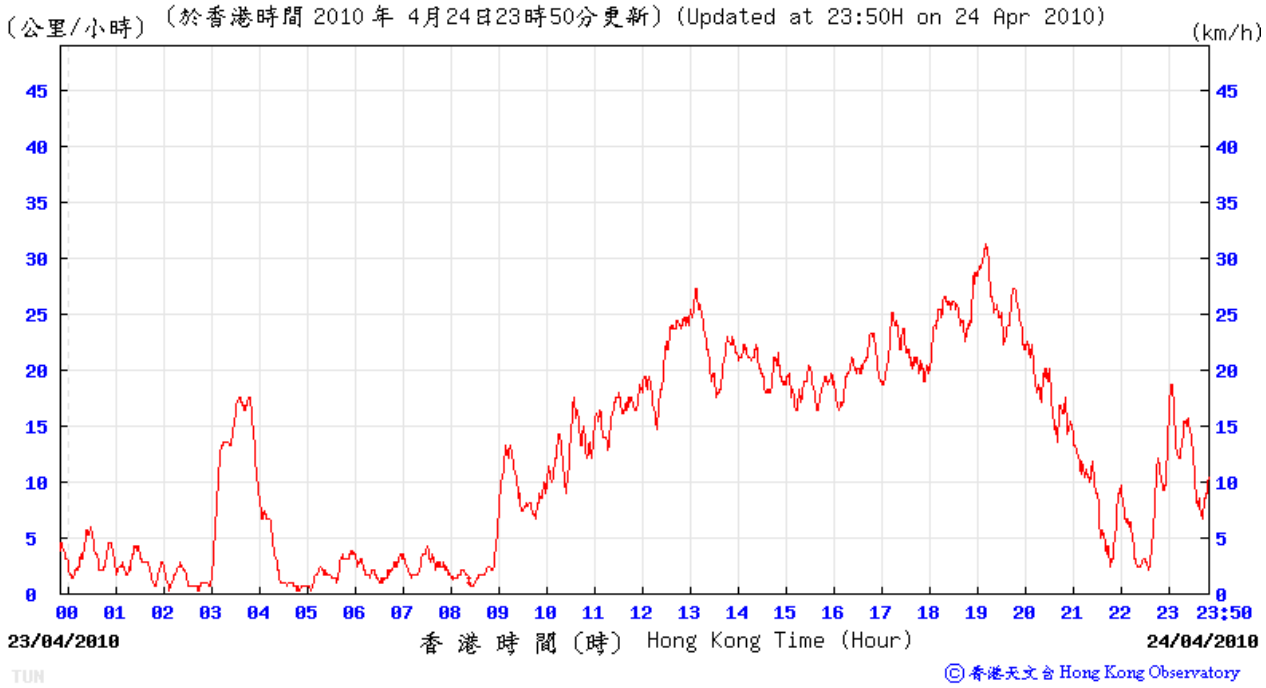

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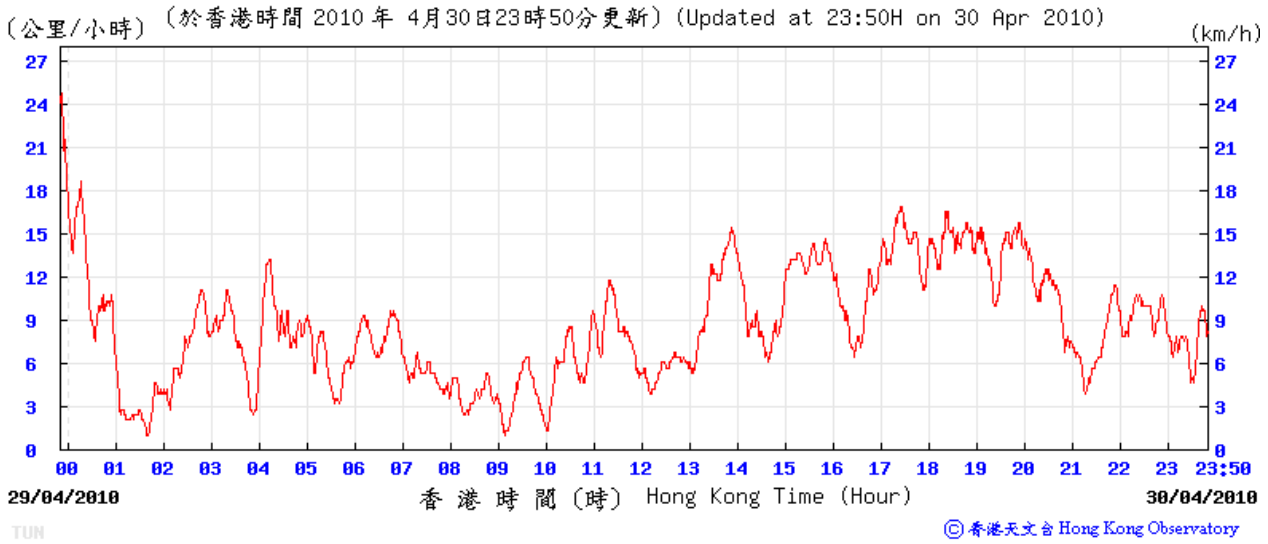
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Appendix H

Mitigation Measures Implementation Schedule for Construction Stage

EIA Ref. Section	EM&A Ref. Section	Environmental Protection Measures	Status
4.7	2.8	**Air Quality** • Hoarding of not less than 2.4m high shall be provided along the site boundary section adjoins a road, street, service land or other area accessible to the public • Spray water to where excavation to be taken place immediately prior to, during and after excavation • Any stockpile of dusty material shall be either: (a) covered entirely by impervious sheeting; (b) placed in an area sheltered on the top and the three sides; or (c) sprayed with water or a dust suppression chemical so as to maintain the entire surface wet • Cement bags or any other dusty materials collected during the work should be disposed of in totally enclosed containers • All dusty materials should be sprayed with water immediately prior to any loading, unloading or transfer operation so as to minimise the dusty materials wet • Any dusty material remaining after a stockpile of cement or other materials is removed should be wetted and removed from the surface of roads • Where a vehicle leaving the construction site is carrying a load of dusty materials, the load shall be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle • Conveyor belts shall be fitted with windboards, and conveyor transfer points and hopper discharge areas shall be enclosed and fitted with belt cleaners • Skip hoist for the transport of construction wastes should be properly enclosed • Vehicle washing facilities including a high pressure water jet shall be provided at the designated vehicle exit point and every vehicle immediately before leaving the construction site shall be washed to remove any dusty materials from its body and wheels • Every main haul road, vehicle washing areas and the section of road between the washing facilities and the exit point shall be paved with concrete, bituminous materials, hardcore or metal plates and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet • Debris from the construction of the WFM shall be covered entirely by impervious sheeting or stored in a sheltered debris collection area	^ ^ ^ * ^ ^ ^ N/A N/A ^ * N/A

Remarks: ^ Compliance of mitigation measure; X Non-compliance of mitigation measure;
N/A Not Applicable at this stage; * Not satisfactory but rectified by the contractor.

As updated on 17 May 2010

EIA Ref. Section	EM&A Ref. Section	Environmental Protection Measures	Status
5.7	3.7	**Noise**	
		• Use quiet construction equipment	^
		• Use silencers / mufflers, noise barriers / enclosure where practicable	^
		• The Contractor is required to determine the number and type of construction equipment taking into account the use of quiet plant while devising a feasible work programme	^
		• Only well-maintained plant shall be operated on-site and all equipment shall be routinely checked	^
		• Turn off or throttle down idle plant	^
		• Plants known to emit noise strongly shall be oriented away from NSRs	^
		• Mobile plants shall be sited as far away from NSRs as possible	^
		• Stockpiles and other structures shall be effectively utilised as practicable to screen noise from on-site construction activities	^
		• Obtain valid noise permits for construction work during restricted hours	^
6.7	4.1	**Water Quality**	
		• Site shall be kept clean and tidy to avoid construction materials and waste being washed off from site	^
		• Works shall be planned to avoid rainy season so as to minimize the runoff and reduce the amount of soil that can be carried offsite	^
		• Surface run-off from the construction site shall be directed to silt traps or sedimentation basin before reuse or discharge with help of channels, earth bunds or sand bag barriers for suspended solids removal prior to its being discharged to storm water drain. Silt trap design shall conform to the guidelines laid down in Appendix A1 of ProPECC PN 1/94	^
		• Wastewater likely to be contaminated with oil or grease should be passed through an oil separator or grease trap before entering the site drainage system	^
		• Hoarding gaps should be tightly sealed to avoid the seepage of wastewater to the nullah and outside the site	^
		• Perimeter channels shall be provide at site boundaries, where necessary, to intercept storm-water runoff from outside the site	N/A
		• Silt traps, sedimentation basins, channels and manholes shall be regularly cleaned to remove the deposited silt and grit	^
		• Temporarily exposed slope surfaces and construction material stockpiles shall be covered with tarpaulin or similar fabric to prevent erosion	^
		• Wastewater generated from bored-piling shall be re-circulated after sedimentation as practicable. The final discharge of the wastewater shall be via silt removal facilities.	^
		• All fuel tanks and chemical storage areas shall be surrounded by bunds with a capacity equal to 110% of the storage capacity	

Remarks: ^ Compliance of mitigation measure; X Non-compliance of mitigation measure;
N/A Not Applicable at this stage; * Not satisfactory but rectified by the contractor.

EIA Ref. Section	EM&A Ref. Section	Environmental Protection Measures	Status
		of the largest tank to prevent spilled oil, fuel and chemicals from reaching the receiving waters	^
		• Obtain valid discharge license for construction site discharges	^
		• Chemical toilets shall be provided on site	^
		• Monitor the quality of water discharge to ensure compliance of the license condition	^
		• Surface drainage channels of operational areas shall be easily cleaned and connected to foul sewerage	^
7.2	5.1	**Waste Management**	
		• Reuse of excavated soils for back-filling and landscaping purposes	^
		• All reusable and recyclable waste materials shall be segregated and stored in different containers, skips or stockpiled	^
		• Separate the inert and non-inert portions of construction material for disposal of public fill and landfill respectively	^
		• Employ approved licensed waste collectors to collect the inert construction materials to be disposed of at public fill	^
		• Provide a temporary storage areas for storing and stockpiling reusable and recyclable materials.	^
		• Contractor should register as chemical waste producer should chemical waste is produced.	^
		• Licensed waste collectors shall be employed for collecting chemical wastes for disposal.	^
		• Handling and Disposal of chemical waste shall be in accordance with the Code of Practice on the Practice on the Packaging, Labelling and Storage of Chemical Wastes issued under the Waste Disposal Ordinance..	^
		• Quantities of waste materials generated on site and disposal record (e.g. trip ticket) shall be kept on site for inspection	^
		• A Waste Management Plan (WMP) shall be prepared to set out waste handling and disposal strategy and submitted for the architect's approval	^
		• Material being temporary used for construction shall be recyclable as possible	^
		• Design and provide an area within the construction site to allow on-site sorting and segregation of waste materials	^
		• Training shall be provided to site staff on waste minimisation practices including waste reduction, reuse and recycling	^
		• Disposal of C&D material shall be monitored by Trip-Ticket System	^
		• In order to minimize the amount of waste disposal, durable and reusable containers should be used, where practicable, instead of plastic bags	^

Remarks: ^ Compliance of mitigation measure; X Non-compliance of mitigation measure;
N/A Not Applicable at this stage; * Not satisfactory but rectified by the contractor.

8.7	6.1	**Hazard to Life** • Cranes shall be located away from the LPG compound and its access as far as possible • Before excavation work is undertaken, the gas company should be contacted to obtain information (drawings, plans) of all gas pipes in the vicinity of the site. Suitable pipe locating devices must be used to locate underground pipes. Hand dug trial holes must then be used to confirm the position of underground pipes. Excavation must be carried out with extreme care following any advice given by the Gas Authority or Gas Company. • Sufficient guidance shall be given to all workers before carrying out excavation in the vicinity of pipelines • Manually operated warning siren shall be installed to instruct people to take timely shelter • Fire drill exercises shall be organized for the users of the WFM.	^ ^ ^ ^

Remarks: ^ Compliance of mitigation measure; X Non-compliance of mitigation measure;
N/A Not Applicable at this stage; * Not satisfactory but rectified by the contractor.