

**Guangdong-Hong Kong-Macao  
Pearl River Delta  
Regional Air Quality Monitoring Network**

**April to June 2024**

**Statistical Summary of the Second quarter  
Monitoring Results**

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Delta Regional Air Quality Monitoring  
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## 1. Foreword

Since the Pearl River Delta (PRD) Regional Air Quality Monitoring Network came into operation on 30 November 2005, the PRD Regional Air Quality Index (RAQI) was reported to the public on a daily basis. Starting from 2006, half-yearly and annual air quality monitoring reports were also published every year. The network was subsequently enhanced and expanded in September 2014 and renamed to “Guangdong-Hong Kong-Macao Pearl River Delta Regional Air Quality Monitoring Network” (the “Network”).

To cope with the enhancement of the network, the update of the national ambient air quality standards as well as the need for improving the reporting frequency of monitoring results, starting from 2014, the real-time hourly monitoring data was reported on a new internet platform to replace the daily RAQI, the half-yearly report was also replaced by a quarterly report while the annual air quality monitoring report was maintained. The quarterly report is a brief statistical summary of the regional air quality monitoring results in a quarter. The annual report, in addition to the reporting of the monitoring data, provides a more detailed analysis and comparison of the air quality in the year. From the fourth quarter of 2014, the statistical results of carbon monoxide (CO) and fine suspended particulates (PM<sub>2.5</sub> or FSP) were added to the report in addition to those of respirable suspended particulates (PM<sub>10</sub> or RSP), sulfur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>), and ozone (O<sub>3</sub>).

This report is the statistical summary of the monitoring results of the PRD Regional Air Quality Monitoring Network in April to June, the second quarter of 2024. It is the forty-second report published in the form of a quarterly report and the thirty-ninth report with the statistical summaries of the six pollutants (i.e. PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>2</sub>, O<sub>3</sub> and CO).

## 2. Introduction to Guangdong-Hong Kong-Macao Pearl River Delta Regional Air Quality Monitoring Network

The PRD Regional Air Quality Monitoring Network was jointly established by the Former Guangdong Provincial Environmental Monitoring Centre<sup>1</sup> (GDEMC) and the Environmental Protection Department of the Hong Kong Special Administrative Region (HKEPD) from 2003 to 2005, and commenced its operation to report the Regional Air Quality Index (RAQI) on 30 November 2005.

With the growing concerns of air pollution control and economic development of the region, the GDEMC<sup>1</sup> and HKEPD had worked in collaboration with the environmental protection cum meteorological authorities of Macao to enhance the network by extending the coverage of monitoring area to Guangdong, Hong Kong and Macao in September 2014. The enhancements included the addition of monitoring stations from 16 to 23 to further improve the spatial distribution and the inclusion of two new monitoring parameters, i.e. carbon monoxide (CO) and fine suspended particulates (PM<sub>2.5</sub>), to enrich the air quality monitoring information. At the same time, the network was renamed to “Guangdong-Hong Kong-Macao Pearl River Delta Regional Air Quality Monitoring Network” (the “Network”) while the "Quality Management Committee of Guangdong-Hong Kong-Macao Pearl River Delta Regional Air Quality Monitoring Network",

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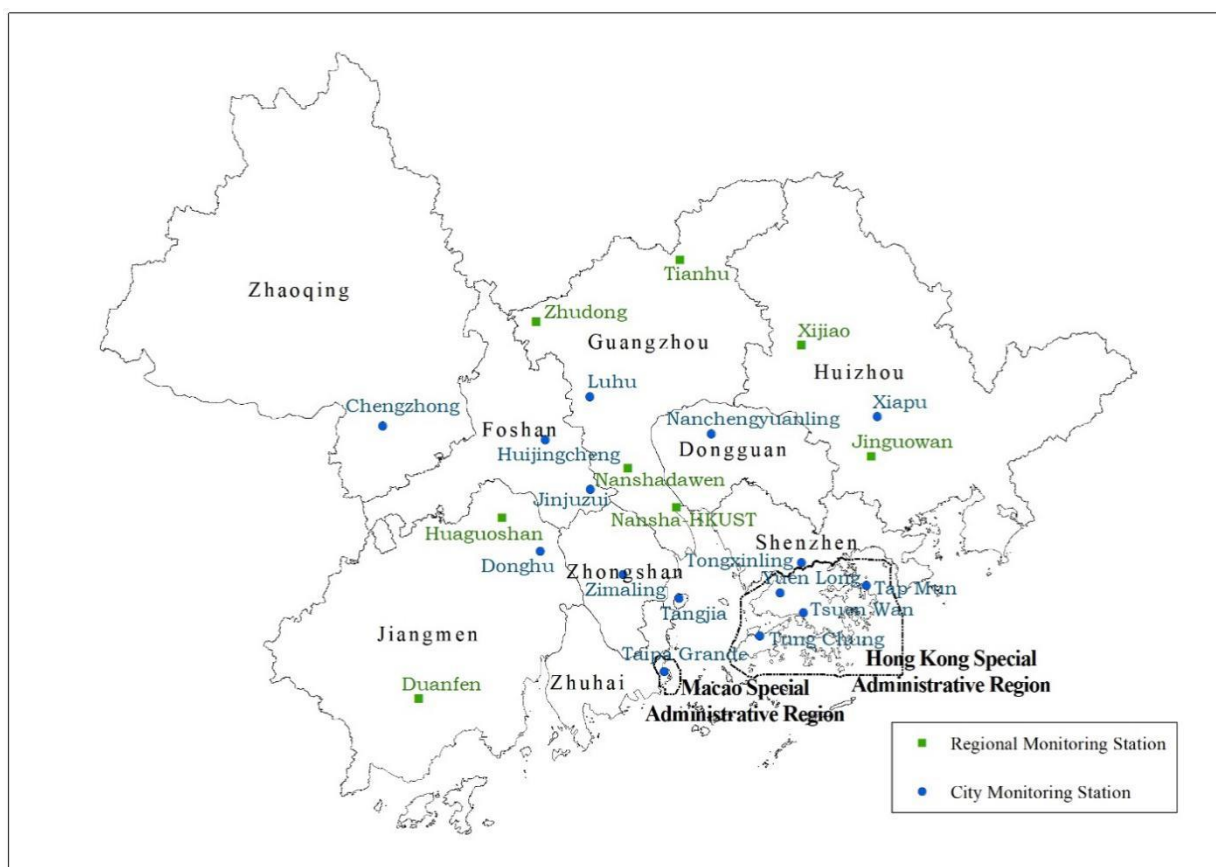
<sup>1</sup> In 2003, when the network was established, the unit was named Guangdong Provincial Environmental Protection Monitoring Centre, which was renamed as Guangdong Provincial Environmental Monitoring Centre in 2008, and was renamed again as Guangdong Ecological and Environmental Monitoring Centre in December 2020.

which was jointly established by the Ecological and Environmental Monitoring Centre of Guangdong (GDEEMC), HKEPD, Environmental Protection Bureau of Macau SARG and the Meteorological and Geophysical Bureau of Macao SARG, was responsible for quality management of the Network and dissemination of information.

The Network comprises 23 automatic air quality monitoring stations (see Figure 2.1) across the Guangdong-Hong Kong-Macao PRD region. Among these, eighteen stations are in the PRD, four stations in Hong Kong and one station in Macau.

All stations are installed with monitoring equipment to measure the ambient concentrations of PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>2</sub>, O<sub>3</sub> and CO.

Annexes A and B show the site information of the monitoring stations in the Network and the methods used for measuring air pollutant concentrations respectively.



**Figure 2.1: Spatial Distribution of Monitoring Stations in the Network<sup>2</sup>**

<sup>2</sup> The map was drawn with reference to the China National Standard Map "Map of the Pearl River Delta Region" (approval number: 粵S (2021) No. 169), and was re-submitted and approved for release. The approval number is GS 粵 (2022) No. 378.

### **3. Operation of the Network**

The overall operation of the Network was smooth in the second quarter of 2024. The average data capture rate of hourly air pollutant monitoring data measured at all monitoring stations was 97.4% in the second quarter.

### **4. Statistical Results of Pollutant Concentrations**

Tables 4.1a to 4.6b list the detailed statistical results of the six air pollutants (SO<sub>2</sub>, NO<sub>2</sub>, O<sub>3</sub>, CO, PM<sub>10</sub> and PM<sub>2.5</sub>) from April to June 2024. Per the amended *GB 3095-2012: Ambient Air Quality Standards*, starting from 2019, the concentrations of gaseous pollutants are calculated at a reference temperature of 298.15K and a pressure of 101.325 kPa, while the concentrations of PM<sub>10</sub> and PM<sub>2.5</sub> are measured at real-time temperature and atmospheric pressure during monitoring.

**Table 4.1a: The monthly maxima and minima of hourly averages of SO<sub>2</sub><sup>3</sup>**

Monitoring Station	April 2024		May 2024		June 2024	
	Min	Max	Min	Max	Min	Max
Luhu (Guangzhou)	4	11	2	10	2	6
Nanshadawen (Guangzhou)	4	11	1	20	2	8
Nansha-HKUST (Guangzhou)	3	11	3	11	3	11
Tianhu (Guangzhou)	4	9	4	8	4	12
Zhudong (Guangzhou)	4	19	4	18	5	18
Tongxinling (Shenzhen)	1	14	4	8	4	7
Jinjuzui (Foshan)	1	14	2	10	2	8
Huijingcheng (Foshan)	2	8	2	14	2	13
Tangjia (Zhuhai)	5	10	1	9	1	7
Donghu (Jiangmen)	4	10	4	11	4	9
Duanfen (Jiangmen)	5	12	7	17	8	13
Huaguoshan (Jiangmen)	6	17	5	30	4	29
Chengzhong (Zhaoqing)	4	33	4	29	3	38
Xiapu (Huizhou)	4	12	4	13	5	18
Shixia (Huizhou)	1	20	5	14	5	16
Jinguowan (Huizhou)	3	11	3	9	4	9
Zimaling (Zhongshan)	3	10	3	9	4	9
Nanchengyuanling (Dongguan)	6	12	5	14	5	9
Tap Mun (Hong Kong)	1	4	1	5	1	3
Tsuen Wan (Hong Kong)	1	21	0	11	2	17
Yuen Long (Hong Kong)	0	8	1	7	1	7
Tung Chung (Hong Kong)	0	8	0	8	0	4
Taipa Grande (Macao)	2	9	1	6	2	6

<sup>3</sup> All pollutants, except for carbon monoxide, are measured in micrograms per cubic meter (µg/m<sup>3</sup>). The unit for carbon monoxide concentration is milligrams per cubic meter (mg/m<sup>3</sup>).

The above also applies to all the pollutant monitoring mentioned below.

**Table 4.1b: The monthly maxima and minima of daily averages of SO<sub>2</sub>**

Monitoring Station	April 2024		May 2024		June 2024	
	Min	Max	Min	Max	Min	Max
Luhu (Guangzhou)	4	6	3	7	2	4
Nanshadawen (Guangzhou)	4	7	2	10	2	5
Nansha-HKUST (Guangzhou)	4	6	4	6	3	5
Tianhu (Guangzhou)	4	6	4	7	5	7
Zhudong (Guangzhou)	4	11	5	11	6	9
Tongxinling (Shenzhen)	3	9	4	6	4	6
Jinjuzui (Foshan)	1	6	3	5	3	5
Huijingcheng (Foshan)	2	5	2	6	2	6
Tangjia (Zhuhai)	5	7	1	8	2	6
Donghu (Jiangmen)	5	7	4	7	6	7
Duanfen (Jiangmen)	5	8	7	10	9	10
Huaguoshan (Jiangmen)	7	11	5	14	5	8
Chengzhong (Zhaoqing)	7	15	4	13	4	17
Xiapu (Huizhou)	5	7	6	9	5	8
Shixia (Huizhou)	1	11	5	11	6	9
Jinguowan (Huizhou)	4	7	4	7	4	7
Zimaling (Zhongshan)	3	8	4	6	5	7
Nanchengyuanling (Dongguan)	6	10	6	10	5	7
Tap Mun (Hong Kong)	1	2	1	4	1	3
Tsuen Wan (Hong Kong)	2	9	1	7	2	7
Yuen Long (Hong Kong)	1	4	1	3	1	4
Tung Chung (Hong Kong)	0	3	0	3	0	1
Taipa Grande (Macao)	3	7	2	4	3	4

**Table 4.1c : The monthly averages of SO<sub>2</sub><sup>4</sup>**

Monitoring Station	April 2024	May 2024	June 2024
Luhu (Guangzhou)	5	5	3
Nanshadawen (Guangzhou)	5	7	3
Nansha-HKUST (Guangzhou)	4	5	4
Tianhu (Guangzhou)	5	5	5
Zhudong (Guangzhou)	9	7	7
Tongxinling (Shenzhen)	5	5	5
Jinjuzui (Foshan)	3	4	4
Huijingcheng (Foshan)	3	4	3
Tangjia (Zhuhai)	6	6	4
Donghu (Jiangmen)	6	6	6
Duanfen (Jiangmen)	7	9	10
Huaguoshan (Jiangmen)	9	9	6
Chengzhong (Zhaoqing)	10	9	8
Xiapu (Huizhou)	6	7	6
Shixia (Huizhou)	8*	8	7
Jinguowan (Huizhou)	6*	5	5
Zimaling (Zhongshan)	5	5	6
Nanchengyuanling (Dongguan)	7	8	6
Tap Mun (Hong Kong)	1	2	2
Tsuen Wan (Hong Kong)	6	3	4
Yuen Long (Hong Kong)	2	2	2
Tung Chung (Hong Kong)	1	1	0
Taipa Grande (Macao)	5	3	3

<sup>4</sup> \* The capture rate of validated daily data per month is below 85%. Due to the frequent thunderstorm weather, Shixia (Huizhou) station experienced multiple power trips and outages within April, resulting in data deficiency. Jinguowan (Huizhou) station was affected by electrical circuit renovations, leading to power outages and data deficiency from March 29th to April 11th. The same applies to following.



**Table 4.2a: The monthly maxima and minima of hourly averages of NO<sub>2</sub>**

Monitoring Station	April 2024		May 2024		June 2024	
	Min	Max	Min	Max	Min	Max
Luhu (Guangzhou)	6	76	9	110	6	50
Nanshadawen (Guangzhou)	6	85	3	100	1	79
Nansha-HKUST (Guangzhou)	1	149	4	84	1	81
Tianhu (Guangzhou)	3	36	4	31	4	26
Zhudong (Guangzhou)	6	55	2	50	3	44
Tongxinling (Shenzhen)	2	65	2	59	1	32
Jinjuzui (Foshan)	1	66	1	78	1	55
Huijingcheng (Foshan)	2	74	1	80	1	66
Tangjia (Zhuhai)	2	65	3	61	2	67
Donghu (Jiangmen)	6	53	8	68	4	51
Duanfen (Jiangmen)	1	42	1	46	1	40
Huaguoshan (Jiangmen)	1	49	1	66	1	65
Chengzhong (Zhaoqing)	5	87	7	191	4	80
Xiapu (Huizhou)	3	37	3	43	2	38
Shixia (Huizhou)	1	38	4	42	2	33
Jinguowan (Huizhou)	7	34	6	30	1	34
Zimaling (Zhongshan)	3	66	4	61	2	60
Nanchengyuanling (Dongguan)	1	65	4	80	1	44
Tap Mun (Hong Kong)	0	33	0	39	0	27
Tsuen Wan (Hong Kong)	8	146	3	125	3	98
Yuen Long (Hong Kong)	4	123	3	97	4	83
Tung Chung (Hong Kong)	2	105	4	135	1	86
Taipa Grande (Macao)	3	74	3	62	2	60

**Table 4.2b: The monthly maxima and minima of daily averages of NO<sub>2</sub>**

Monitoring Station	April 2024		May 2024		June 2024	
	Min	Max	Min	Max	Min	Max
Luhu (Guangzhou)	14	52	21	48	12	33
Nanshadawen (Guangzhou)	17	60	18	46	9	42
Nansha-HKUST (Guangzhou)	13	61	19	44	8	43
Tianhu (Guangzhou)	6	18	5	16	5	14
Zhudong (Guangzhou)	15	33	11	33	9	27
Tongxinling (Shenzhen)	6	38	6	21	5	16
Jinjuzui (Foshan)	7	47	11	45	4	33
Huijingcheng (Foshan)	16	41	12	36	7	34
Tangjia (Zhuhai)	5	34	8	33	3	28
Donghu (Jiangmen)	9	37	12	45	7	37
Duanfen (Jiangmen)	3	32	3	25	2	22
Huaguoshan (Jiangmen)	4	31	3	32	3	37
Chengzhong (Zhaoqing)	11	47	17	59	8	38
Xiapu (Huizhou)	8	23	7	20	7	17
Shixia (Huizhou)	6	23	7	20	8	22
Jinguowan (Huizhou)	12	23	12	17	4	17
Zimaling (Zhongshan)	6	47	7	37	4	39
Nanchengyuanling (Dongguan)	6	39	12	38	4	24
Tap Mun (Hong Kong)	3	12	2	9	1	9
Tsuen Wan (Hong Kong)	27	68	21	60	21	48
Yuen Long (Hong Kong)	16	51	14	48	13	39
Tung Chung (Hong Kong)	5	63	10	68	7	55
Taipa Grande (Macao)	9	39	9	37	5	31

**Table 4.2c: The monthly averages of NO<sub>2</sub>**

Monitoring Station	April 2024	May 2024	June 2024
Luhu (Guangzhou)	29	31	21
Nanshadawen (Guangzhou)	32	31	22
Nansha-HKUST (Guangzhou)	27	31	26
Tianhu (Guangzhou)	10	8	9
Zhudong (Guangzhou)	24	21	16
Tongxinling (Shenzhen)	16	13	9
Jinjuzui (Foshan)	23	23	14
Huijingcheng (Foshan)	29	24	19
Tangjia (Zhuhai)	15	20	10
Donghu (Jiangmen)	19	24	14
Duanfen (Jiangmen)	9	10	7
Huaguoshan (Jiangmen)	16	17	10
Chengzhong (Zhaoqing)	27	34	21
Xiapu (Huizhou)	14	12	10
Shixia (Huizhou)	13*	13	12
Jinguowan (Huizhou)	16*	14	10
Zimaling (Zhongshan)	16	22	11
Nanchengyuanling (Dongguan)	21	21	15
Tap Mun (Hong Kong)	7	5	4
Tsuen Wan (Hong Kong)	42	37	33
Yuen Long (Hong Kong)	30	30	25
Tung Chung (Hong Kong)	21	32	16
Taipa Grande (Macao)	17	22	12

**Table 4.3a: The monthly maxima and minima of hourly averages of O<sub>3</sub>**

Monitoring Station	April 2024		May 2024		June 2024	
	Min	Max	Min	Max	Min	Max
Luhu (Guangzhou)	1	225	1	247	1	164
Nanshadawen (Guangzhou)	2	209	2	307	2	181
Nansha-HKUST (Guangzhou)	1	203	1	299	1	164
Tianhu (Guangzhou)	16	167	12	173	9	140
Zhudong (Guangzhou)	2	273	2	275	3	166
Tongxinling (Shenzhen)	1	142	1	195	1	184
Jinjuzui (Foshan)	2	130	2	220	2	117
Huijingcheng (Foshan)	2	232	2	320	2	177
Tangjia (Zhuhai)	2	162	1	256	2	139
Donghu (Jiangmen)	2	172	2	245	3	158
Duanfen (Jiangmen)	1	157	1	204	3	105
Huaguoshan (Jiangmen)	1	137	1	218	5	94
Chengzhong (Zhaoqing)	7	181	1	278	1	126
Xiapu (Huizhou)	3	237	5	209	7	174
Shixia (Huizhou)	1	202	1	162	1	147
Jinguowan (Huizhou)	1	196	3	168	1	188
Zimaling (Zhongshan)	2	148	2	268	3	145
Nanchengyuanling (Dongguan)	2	238	2	289	2	209
Tap Mun (Hong Kong)	9	184	16	231	10	139
Tsuen Wan (Hong Kong)	3	151	0	187	2	109
Yuen Long (Hong Kong)	6	140	5	207	3	181
Tung Chung (Hong Kong)	0	126	0	199	0	109
Taipa Grande (Macao)	0	156	2	225	1	155

**Table 4.3b: Daily maximum 8-hour averages of O<sub>3</sub> (the monthly maxima, minima and the 90<sup>th</sup> percentile)**

Monitoring Station	April 2024			May 2024			June 2024		
	Min	Max	90 <sup>th</sup> per	Min	Max	90 <sup>th</sup> per	Min	Max	90 <sup>th</sup> per
Luhu (Guangzhou)	4	173	135	21	218	185	41	133	103
Nanshadawen (Guangzhou)	10	163	129	26	284	221	40	160	96
Nansha-HKUST (Guangzhou)	3	133	86	21	253	191	37	136	92
Tianhu (Guangzhou)	45	150	130	51	154	132	46	121	110
Zhudong (Guangzhou)	13	224	122	10	250	181	47	146	123
Tongxinling (Shenzhen)	30	138	96	38	183	142	31	150	87
Jinjuzui (Foshan)	7	106	96	24	206	180	32	112	75
Huijingcheng (Foshan)	4	179	134	8	290	202	47	146	102
Tangjia (Zhuhai)	17	135	102	41	205	172	38	115	91
Donghu (Jiangmen)	11	149	110	18	228	198	43	115	81
Duanfen (Jiangmen)	20	149	94	21	188	158	36	99	86
Huaguoshan (Jiangmen)	4	117	86	13	190	146	25	78	65
Chengzhong (Zhaoqing)	22	140	113	20	253	207	47	97	93
Xiapu (Huizhou)	38	209	137	44	179	151	44	159	90
Shixia (Huizhou)	16	173	121	44	144	135	32	125	85
Jinguowan (Huizhou)	43	153	94	29	154	121	35	146	75
Zimaling (Zhongshan)	6	127	110	26	214	177	40	128	81
Nanchengyuanling (Dongguan)	12	179	128	43	223	191	39	179	93
Tap Mun (Hong Kong)	52	172	129	44	213	173	42	135	113
Tsuen Wan (Hong Kong)	27	136	102	17	178	134	20	99	78
Yuen Long (Hong Kong)	23	128	93	29	195	142	29	136	91
Tung Chung (Hong Kong)	20	118	89	31	193	134	29	106	82
Taipa Grande (Macao)	31	143	83	37	185	167	38	122	99

**Table 4.3c: The monthly averages of O<sub>3</sub>**

Monitoring Station	April 2024	May 2024	June 2024
Luhu (Guangzhou)	40	61	42
Nanshadawen (Guangzhou)	40	72	41
Nansha-HKUST (Guangzhou)	35	67	38
Tianhu (Guangzhou)	68	75	57
Zhudong (Guangzhou)	49	66	51
Tongxinling (Shenzhen)	48	76	47
Jinjuzui (Foshan)	35	59	38
Huijingcheng (Foshan)	47	79	47
Tangjia (Zhuhai)	51	74	47
Donghu (Jiangmen)	48	75	47
Duanfen (Jiangmen)	51	72	46
Huaguoshan (Jiangmen)	38	56	36
Chengzhong (Zhaoqing)	51	72	48
Xiapu (Huizhou)	62	79	50
Shixia (Huizhou)	44*	63	38
Jinguowan (Huizhou)	47*	57	40
Zimaling (Zhongshan)	50	72	49
Nanchengyuanling (Dongguan)	50	79	45
Tap Mun (Hong Kong)	67	98	57
Tsuen Wan (Hong Kong)	50	74	32
Yuen Long (Hong Kong)	44	74	43
Tung Chung (Hong Kong)	45	67	39
Taipa Grande (Macao)	50	76	50

**Table 4.4a: The monthly maxima and minima of hourly averages of CO**

Monitoring Station	April 2024		May 2024		June 2024	
	Min	Max	Min	Max	Min	Max
Luhu (Guangzhou)	0.4	1.1	0.4	1.3	0.1	1.5
Nanshadawen (Guangzhou)	0.3	1.1	0.3	1.1	0.4	1.0
Nansha-HKUST (Guangzhou)	0.2	0.9	0.2	0.9	0.2	0.8
Tianhu (Guangzhou)	0.1	1.0	0.3	0.8	0.4	1.0
Zhudong (Guangzhou)	0.4	1.0	0.2	1.2	0.2	1.1
Tongxinling (Shenzhen)	0.2	1.1	0.5	1.0	0.2	1.0
Jinjuzui (Foshan)	0.2	1.2	0.4	1.3	0.3	0.9
Huijingcheng (Foshan)	0.2	1.1	0.4	1.6	0.3	1.2
Tangjia (Zhuhai)	0.1	0.8	0.2	0.7	0.2	0.8
Donghu (Jiangmen)	0.3	1.2	0.3	1.1	0.3	1.1
Duanfen (Jiangmen)	0.4	1.1	0.4	1.1	0.4	1.0
Huaguoshan (Jiangmen)	0.4	1.2	0.5	1.2	0.2	1.0
Chengzhong (Zhaoqing)	0.3	1.1	0.0	1.2	0.1	0.8
Xiapu (Huizhou)	0.4	1.0	0.5	1.4	0.4	0.9
Shixia (Huizhou)	0.4	1.1	0.3	1.0	0.1	1.0
Jinguowan (Huizhou)	0.4	0.8	0.4	0.8	0.3	1.1
Zimaling (Zhongshan)	0.1	1.1	0.2	0.8	0.1	0.8
Nanchengyuanling (Dongguan)	0.5	1.2	0.5	1.3	0.5	1.1
Tap Mun (Hong Kong)	0.2	0.5	0.2	0.6	0.2	0.6
Tsuen Wan (Hong Kong)	0.2	1.1	0.2	0.8	0.0	0.8
Yuen Long (Hong Kong)	0.4	1.1	0.2	0.9	0.2	0.7
Tung Chung (Hong Kong)	0.2	0.9	0.3	0.8	0.2	0.7
Taipa Grande (Macao)	0.4	1.2	0.3	1.2	0.4	0.9

**Table 4.4b: Daily averages of CO (the monthly maxima, minima and the 95<sup>th</sup> percentile)**

Monitoring Station	April 2024			May 2024			June 2024		
	Min	Max	95 <sup>th</sup> per	Min	Max	95 <sup>th</sup> per	Min	Max	95 <sup>th</sup> per
Luhu (Guangzhou)	0.4	0.9	0.9	0.5	0.8	0.8	0.2	1.1	0.9
Nanshadawen (Guangzhou)	0.3	0.8	0.7	0.4	0.9	0.9	0.4	0.8	0.7
Nansha-HKUST (Guangzhou)	0.3	0.8	0.7	0.3	0.8	0.7	0.3	0.6	0.6
Tianhu (Guangzhou)	0.3	0.7	0.7	0.4	0.7	0.7	0.5	0.9	0.8
Zhudong (Guangzhou)	0.4	0.9	0.8	0.5	1.0	0.8	0.3	1.0	1.0
Tongxinling (Shenzhen)	0.3	0.8	0.8	0.5	0.8	0.8	0.2	0.8	0.8
Jinjuzui (Foshan)	0.2	1.0	0.8	0.5	0.9	0.8	0.3	0.7	0.7
Huijingcheng (Foshan)	0.3	1.0	1.0	0.5	1.3	1.1	0.3	1.1	1.0
Tangjia (Zhuhai)	0.2	0.5	0.5	0.2	0.6	0.5	0.2	0.5	0.5
Donghu (Jiangmen)	0.3	0.8	0.7	0.4	0.9	0.7	0.4	0.7	0.6
Duanfen (Jiangmen)	0.4	0.9	0.8	0.6	1.0	0.9	0.5	0.9	0.8
Huaguoshan (Jiangmen)	0.5	1.0	0.9	0.6	0.8	0.8	0.3	0.9	0.8
Chengzhong (Zhaoqing)	0.4	0.8	0.8	0.2	0.9	0.8	0.2	0.7	0.6
Xiapu (Huizhou)	0.5	0.8	0.8	0.5	0.8	0.7	0.4	0.8	0.7
Shixia (Huizhou)	0.5	0.9	0.9	0.4	0.9	0.8	0.3	0.8	0.7
Jinguowan (Huizhou)	0.5	0.8	0.8	0.5	0.7	0.7	0.3	0.9	0.8
Zimaling (Zhongshan)	0.2	0.8	0.7	0.2	0.6	0.5	0.1	0.6	0.5
Nanchengyuanling (Dongguan)	0.6	1.0	1.0	0.6	1.0	0.9	0.5	1.0	0.8
Tap Mun (Hong Kong)	0.2	0.5	0.4	0.2	0.5	0.5	0.2	0.5	0.5
Tsuen Wan (Hong Kong)	0.3	0.9	0.8	0.3	0.6	0.6	0.1	0.6	0.5
Yuen Long (Hong Kong)	0.4	0.8	0.8	0.3	0.7	0.7	0.3	0.5	0.5
Tung Chung (Hong Kong)	0.2	0.6	0.6	0.3	0.7	0.6	0.3	0.6	0.5
Taipa Grande (Macao)	0.4	0.8	0.7	0.4	0.7	0.7	0.4	0.6	0.6



**Table 4.4c: The monthly averages of CO**

Monitoring Station	April 2024	May 2024	June 2024
Luhu (Guangzhou)	0.7	0.6	0.5
Nanshadawen (Guangzhou)	0.6	0.7	0.6
Nansha-HKUST (Guangzhou)	0.5	0.5	0.5
Tianhu (Guangzhou)	0.5	0.6	0.6
Zhudong (Guangzhou)	0.6	0.7	0.6
Tongxinling (Shenzhen)	0.5	0.7	0.6
Jinjuzui (Foshan)	0.5	0.6	0.5
Huijingcheng (Foshan)	0.7	0.8	0.6
Tangjia (Zhuhai)	0.3	0.4	0.3
Donghu (Jiangmen)	0.5	0.6	0.5
Duanfen (Jiangmen)	0.6	0.7	0.6
Huaguoshan (Jiangmen)	0.7	0.7	0.5
Chengzhong (Zhaoqing)	0.6	0.5	0.5
Xiapu (Huizhou)	0.7	0.6	0.6
Shixia (Huizhou)	0.8*	0.6	0.6
Jinguowan (Huizhou)	0.7*	0.6	0.5
Zimaling (Zhongshan)	0.4	0.4	0.3
Nanchengyuanling (Dongguan)	0.8	0.8	0.7
Tap Mun (Hong Kong)	0.3	0.4	0.4
Tsuen Wan (Hong Kong)	0.5	0.5	0.4
Yuen Long (Hong Kong)	0.6	0.5	0.4
Tung Chung (Hong Kong)	0.4	0.4	0.3
Taipa Grande (Macao)	0.6	0.5	0.4

**Table 4.5a: The monthly maxima and minima of daily averages of PM<sub>10</sub>**

Monitoring Station	April 2024		May 2024		June 2024	
	Min	Max	Min	Max	Min	Max
Luhu (Guangzhou)	16	56	8	61	12	31
Nanshadawen (Guangzhou)	17	60	17	60	9	43
Nansha-HKUST (Guangzhou)	18	68	21	67	4	57
Tianhu (Guangzhou)	5	48	4	55	7	31
Zhudong (Guangzhou)	12	63	12	69	9	34
Tongxinling (Shenzhen)	11	44	10	41	9	27
Jinjuzui (Foshan)	16	59	12	58	8	37
Huijingcheng (Foshan)	16	62	10	65	11	37
Tangjia (Zhuhai)	18	57	12	51	9	44
Donghu (Jiangmen)	15	58	17	63	7	46
Duanfen (Jiangmen)	13	40	6	35	4	23
Huaguoshan (Jiangmen)	19	52	13	62	10	41
Chengzhong (Zhaoqing)	19	59	7	72	7	60
Xiapu (Huizhou)	12	67	10	52	9	30
Shixia (Huizhou)	11	73	7	51	12	32
Jinguowan (Huizhou)	9	43	7	44	11	30
Zimaling (Zhongshan)	11	53	10	41	7	40
Nanchengyuanling (Dongguan)	15	58	12	70	9	44
Tap Mun (Hong Kong)	5	28	4	38	5	20
Tsuen Wan (Hong Kong)	11	33	8	33	7	20
Yuen Long (Hong Kong)	8	37	6	31	5	18
Tung Chung (Hong Kong)	10	32	8	31	4	19
Taipa Grande (Macao)	19	50	13	50	13	33

**Table 4.5b: The monthly averages of PM<sub>10</sub>**

Monitoring Station	April 2024	May 2024	June 2024
Luhu (Guangzhou)	34	32	23
Nanshadawen (Guangzhou)	35	34	24
Nansha-HKUST (Guangzhou)	38	41	21
Tianhu (Guangzhou)	22	21	16
Zhudong (Guangzhou)	33	32	24
Tongxinling (Shenzhen)	26	24	16
Jinjuzui (Foshan)	32	32	20
Huijingcheng (Foshan)	35	37	23
Tangjia (Zhuhai)	30	30	17
Donghu (Jiangmen)	34	35	21
Duanfen (Jiangmen)	23	20	12
Huaguoshan (Jiangmen)	33	36	22
Chengzhong (Zhaoqing)	36	39	22
Xiapu (Huizhou)	32	28	19
Shixia (Huizhou)	30*	26	22
Jinguowan (Huizhou)	24*	23	18
Zimaling (Zhongshan)	28	27	18
Nanchengyuanling (Dongguan)	31	33	22
Tap Mun (Hong Kong)	15	19	10
Tsuen Wan (Hong Kong)	20	19	12
Yuen Long (Hong Kong)	20	19	11
Tung Chung (Hong Kong)	18	19	10
Taipa Grande (Macao)	31	31	21

**Table 4.6a: The monthly maxima and minima of daily averages of PM<sub>2.5</sub>**

Monitoring Station	April 2024		May 2024		June 2024	
	Min	Max	Min	Max	Min	Max
Luhu (Guangzhou)	10	35	5	34	6	20
Nanshadawen (Guangzhou)	13	36	13	39	7	34
Nansha-HKUST (Guangzhou)	5	32	6	32	4	26
Tianhu (Guangzhou)	3	41	4	24	4	10
Zhudong (Guangzhou)	7	37	8	39	6	20
Tongxinling (Shenzhen)	4	35	5	25	3	19
Jinjuzui (Foshan)	10	28	7	27	4	20
Huijingcheng (Foshan)	10	31	5	34	4	25
Tangjia (Zhuhai)	5	34	4	22	3	21
Donghu (Jiangmen)	8	31	9	32	4	23
Duanfen (Jiangmen)	7	27	4	22	2	20
Huaguoshan (Jiangmen)	11	34	9	35	6	28
Chengzhong (Zhaoqing)	12	41	5	50	4	44
Xiapu (Huizhou)	7	39	7	28	5	20
Shixia (Huizhou)	8	42	4	30	7	16
Jinguowan (Huizhou)	7	29	3	25	7	20
Zimaling (Zhongshan)	8	33	5	31	2	29
Nanchengyuanling (Dongguan)	8	34	9	37	4	24
Tap Mun (Hong Kong)	3	19	2	18	1	10
Tsuen Wan (Hong Kong)	7	28	6	25	4	15
Yuen Long (Hong Kong)	5	26	6	24	3	14
Tung Chung (Hong Kong)	5	28	8	23	3	17
Taipa Grande (Macao)	5	33	3	19	2	18

**Table 4.6b: The monthly averages of PM<sub>2.5</sub>**

Monitoring Station	April 2024	May 2024	June 2024
Luhu (Guangzhou)	20	19	13
Nanshadawen (Guangzhou)	22	22	14
Nansha-HKUST (Guangzhou)	16	16	10
Tianhu (Guangzhou)	13	12	6
Zhudong (Guangzhou)	19	19	13
Tongxinling (Shenzhen)	17	13	8
Jinjuzui (Foshan)	16	16	9
Huijingcheng (Foshan)	19	19	11
Tangjia (Zhuhai)	16	13	9
Donghu (Jiangmen)	18	18	11
Duanfen (Jiangmen)	15	12	8
Huaguoshan (Jiangmen)	21	21	14
Chengzhong (Zhaoqing)	25	23	13
Xiapu (Huizhou)	19	16	10
Shixia (Huizhou)	19*	16	11
Jinguowan (Huizhou)	15*	15	11
Zimaling (Zhongshan)	18	16	9
Nanchengyuanling (Dongguan)	19	19	11
Tap Mun (Hong Kong)	9	9	5
Tsuen Wan (Hong Kong)	14	12	7
Yuen Long (Hong Kong)	14	13	7
Tung Chung (Hong Kong)	13	13	7
Taipa Grande (Macao)	13	11	6

## Annex A: Site Information of Monitoring Stations

Monitoring Stations	Address	Area Type	Sampling Height (Above)	Above Ground	Date Commenced Operation
Luhu (Guangzhou)	Jufong Garden of Luhu Park (Big yard, No. 11 Luhu Park)	City	30m	9m	Jan 1993
Nanshadawen <sup>5</sup> (Guangzhou)	Shinan Road, Dongchong Town, Nansha District	City	23m	10m	Jan 2021
Nansha-HKUST <sup>6</sup> (Guangzhou)	HKUST Fok Ying Tung Research Institute, Nansha District	Mixed educational/commercial and residential/industrial	54m	28m	Oct 2004
Tianhu (Guangzhou)	Tianhu Park, Conghua District	Background : rural	251m	13m	Oct 2004
Zhudong (Guangzhou)	Zhudong Village Committee, Chini Town, Huadu District	Rural	19m	10m	Dec 2011
Tongxinling <sup>7</sup> (Shenzhen)	Shennan Zhong Road, Futian District	City	38m	12m	Sep 1997
Jinjuzui (Foshan)	Foshan City Communist Party School, Jinjuzui, Shunde District	Tourist and cultural /educational	27m	17m	Oct 1999
Huijingcheng (Foshan)	No. 127, Fenjiang Nan Road, Chancheng District	Urban: mixed residential/commercial/ industrial	24m	14m	Feb 2000
Tangjia (Zhuhai)	Qiao Island Mangrove Monitoring Station, Tangjia Town	Touristl/ eco-protected	13m	13m	Jan 2010
Donghu (Jiangmen)	Donghu Park, Jiangmen	City	17.5m	5m	Nov 2001
Duanfen (Jiangmen)	Duanfen Middle School, Taishan	Rural	15m	12m	Dec 2011
Huaguoshan (Jiangmen)	Huaguoshan, Taoyuan, Heshan	Rural	25m	15m	Feb 2012
Chengzhong (Zhaoqing)	No. 63, Zhengdong Road, Duanzhou District	Urban: mixed residential/commercial	38m	16m	Jun 2001
Xiapu (Huizhou)	No. 4 Xiabuhengjiang Road No. 3, Huicheng District	Urban: commercial	49m	20m	Dec 1999
Shixia <sup>8</sup> (Huizhou)	Community Service Center, Shixiatun Village, Changning Town, Boluo County	Rural	44m	10m	Dec 2011
Jinguowan (Huizhou)	Jinguowan Ecological Farm, Huizhou	Residential	77m	8m	Oct 2004

<sup>5</sup> Modiesha (Guangzhou) station closed permanently owing to insufficient space after the extensive renovation work at station, whereas Nanshadawen (Guangzhou) station joined the network in the 1st quarter of 2021.

<sup>6</sup> Wanqingsha (Guangzhou) station was renamed as Nansha-HKUST (Guangzhou) station in the 1st quarter of 2019.

<sup>7</sup> Liyuan (Shenzhen) station was renamed as Tongxinling (Shenzhen) station in the 1st quarter of 2019.

<sup>8</sup> Xijiao (Huizhou) station was relocated to a monitoring station located in Shixiatun Village, Changning Town, Boluo County, Huizhou City in the 2nd quarter of 2023, and changed its name to " Shixia (Huizhou)"

Zimaling (Zhongshan)	Zimaling Park, Zhongshan	Mixed residential/commercial	45 m	7m	Aug 2002
Nancheng-yuanling <sup>9</sup> (Dongguan)	Dongguan Administration Center	Mixed residential/commercial/industrial	40 m	19m	May 2021
Tap Mun (Hong Kong)	Tap Mun Police Station	Background: rural	26m	11m	Apr 1998
Tsuen Wan (Hong Kong)	60 Tai Ho Road, Tsuen Wan	Urban: mixed residential/commercial/industrial	21m	17m	Aug 1988
Yuen Long (Hong Kong)	Yuen Long District Office, 269 Castle Peak Road, Yuen Long	New Town: residential	31m	25m	Jul 1995
Tung Chung (Hong Kong)	6 Fu Tung Street, Tung Chung	New Town: residential	34.5m	27.5m	Apr 1999
Taipa Grande (Macao)	Rampa do Observatorio, Taipa Grande	Rural	113.1m	3m (gaseous pollutants) <sup>10</sup> /5m	Mar 1999

<sup>9</sup> Nancheng-yuanling (Dongguan) station was relocated to Dongguan administration center in May 2021. The distance between the old and new sites is about 600 metres.

<sup>10</sup> Gaseous pollutants include Sulphur dioxide (SO<sub>2</sub>), Nitrogen dioxide (NO<sub>2</sub>), Ozone (O<sub>3</sub>) and Carbon monoxide (CO).

## Annex B: Measurement Methods of Air Pollutant Concentration

Pollutants	Measuring Principles
Sulphur dioxide (SO <sub>2</sub> )	UV fluorescence / Differential Optical Absorption Spectroscopy
Nitrogen dioxide (NO <sub>2</sub> )	Chemiluminescence / Differential Optical Absorption Spectroscopy
Ozone (O <sub>3</sub> )	UV absorption / Differential Optical Absorption Spectroscopy
Respirable suspended particulates (PM <sub>10</sub> )	Oscillating microbalance (TEOM) / Beta particulate monitor
Fine suspended particulates (PM <sub>2.5</sub> )	Oscillating microbalance (TEOM) / Beta particulate monitor / Hybrid nephelometric / radiometric particulate mass monitor
Carbon monoxide (CO)	Gas filter correlation infrared absorption method / Non-dispersive infrared absorption method