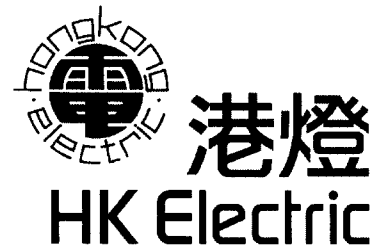


香港電燈有限公司  
The Hongkong Electric Co., Ltd.




**ENVIRONMENTAL IMPACT ASSESSMENT (EIA) ORDINANCE, CAP. 499**

**ENVIRONMENTAL PERMIT NO. EP-248/2006**

**LAMMA POWER STATION  
UNITS L4 & L5 FLUE GAS DESULPHURIZATION PLANT RETROFIT**

**ENVIRONMENTAL MONITORING & AUDIT PROGRAMME  
AT OPERATIONAL PHASE**

Report Title	Quarterly EM&A Report (July to September 2009)
Date	13 November 2009
Certified by	 (Mr. IP Tat-Yan, Environmental Team Leader)

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## EXECUTIVE SUMMARY

The operational phase of Lamma Unit L5 Flue Gas Desulphurization Plant (FGD) commenced in July 2009 following the completion of erection works and commissioning tests. This is the first quarterly Environmental Monitoring and Audit (EM&A) report for the Project “Lamma Power Station Units L4 & L5 Flue Gas Desulphurization Plant Retrofit” prepared by the Environmental Team (ET). This report presents the results of impact monitoring on air and water quality and environmental audit for the operation of the said project in the period from July to September 2009.

Environmental monitoring for air quality and water quality were carried out for the purpose of this EM&A program as well as for fulfilling the requirements stipulated in the relevant licences. The results were checked against the established Action/Limit (AL) levels. The implementation status of the environmental mitigation measures, Event/Action Plan and environmental complaint handling procedures were also checked.

### Plant Availability

Unit L5 was fully available in the reporting period.

### Malfunction/Outage Records of Pollution Control Equipment

Equipment	Period	Cause	Actions Taken
L5 FGD	19/07/2009 10:05 to 21/07/2009 19:40	Defect rectification	Informed EPD by letter dated 22/07/2009.
L5 FGD	03/08/2009 00:13 to 08/08/2009 17:25	Installation of equipment for commissioning test, GGH washing and defect rectification	Informed EPD by letter dated 10/08/2009.
L5 FGD	09/08/2009 16:40 to 17:13	Defect rectification	Informed EPD by letter dated 10/08/2009.
L5 FGD	16/08/2009 00:09 to 27/09/2009 23:38	Internal inspection and defect rectification	Informed EPD by letters dated 14/8/2009 and 28/09/2009

### Environmental Monitoring Works

Environmental monitoring works were performed during the operation of Unit L5 FGD Plant in the reporting period.

#### *Air Quality*

No exceedance of Action and Limit levels for air quality were recorded in the reporting period.

#### *Water Quality*

No exceedance of Action and Limit levels for water quality were recorded in the reporting period.

## Environmental Licensing and Permitting

Description	Permit / Licence No.	Valid Period		Issued To	Date of Issuance
		From	To		
Environmental Permit	EP-248/2006	25/04/2006	-	HK Electric	25/04/2006
Specified Processes Licence issued under APCO	L-7-002(7)	01/01/2009	31/12/2010	HK Electric	31/12/2008
WPCO discharge licence for Ash Lagoon	EP890/W2/XD018	16/04/2007	31/12/2011	HK Electric	16/04/2007

### Implementation Status of Environmental Mitigation Measures

Environmental mitigation measures were implemented in the reporting period.

### Environmental Complaints

No complaint against the Project was received in the reporting period.

### Future key issues

Key issues to be considered in the coming months include:

#### *Air Impact*

- To continuously carry out the air quality monitoring for Unit L5.

#### *Water Impact*

- To continuously carry out the water quality monitoring for FGD WWT plant.

### Concluding Remarks

The environmental performance of the project was generally satisfactory.

## 1. INTRODUCTION

The operational phase of Lamma L5 FGD Plant commenced in July 2009 following the completion of erection works and commissioning tests. The Environmental Team (hereinafter called the “ET”) was formed within The Hongkong Electric Co. Ltd (HK Electric) to undertake Environmental Monitoring and Audit for the “Operation of Lamma Power Station Units L4 & L5 Flue Gas Desulphurization Plant Retrofit Project” under the requirements of Clause 2.18 of Environmental Permit (EP) No. EP-248/2006.

This report summarizes the environmental monitoring and audit work for the Project for the period from July to September 2009.

### 1.1 Background

The Project involves retrofitting the two existing 350MW coal-fired generating Units L4 and L5 of Lamma Power Station with Flue Gas Desulphurisation (FGD) plant for reducing sulphur dioxide emissions in support of Government policy to improve the air quality of the Pearl River Delta.

The Project includes the installation and operation of FGD plants with flue gas desulphurization efficiency of 90% for the two 350MW coal-fired Units L4 & L5 to reduce the overall SO<sub>2</sub> emissions from Lamma Power Station. The process adopted for the FGD plants is “Wet Limestone-Gypsum”, a technology which has already been used in, and proved effective and reliable for the existing coal-fired units L6, L7 & L8. The flue gas from the boiler is directed to the FGD absorber inside which removal of SO<sub>2</sub> is take place by reaction with limestone slurry. After passing through the absorber, the treated flue gas is heated up by a gas-gas heater to over 80°C at boiler rated capacity and directed back to the existing chimney for discharge to the atmosphere. Figure 1.1, Figure 1.2 and Figure 1.3 show the location and schematic of the FGD plants.

Wastewater filtrated from the reacted limestone slurry, i.e. gypsum slurry, is produced and it is directed to the existing FGD wastewater treatment plant (WWTP). The FGD WWTP is designed to treat the effluent from FGD plants by alkalization, precipitation and neutralization processes. The schematic diagram of the FGD WWTP is illustrated in Figure 1.4.

The additional equipment for the FGD Plant retrofit project for Units L4 and L5 includes:

- Two sets of FGD absorbers and associated ductworks
- Two sets of booster fans
- Two sets of gas-gas heaters
- FGD Switchgear and Equipment Building
- Gypsum dewatering system comprising two sets of hydrocyclones and belt filters

## 1.2 Project Organisation

The management structure to oversee the Project includes the following:

- Environmental Protection Department (The Authority);
- General Manager (Corporate Development) (The official contact person between HK Electric and EPD);
- Environmental Team Leader (ET Leader);
- Environmental Team (ET).

The organization chart for the Operation EM&A programme is shown in Figure 1.5.

## 1.3 Plant Availability during the Reporting Period

Unit L5 was fully available in the reporting period.

## 1.4 Malfunction/Outage Records of Pollution Control Equipment

Equipment	Period	Cause	Actions Taken
L5 FGD	19/07/2009 10:05 to 21/07/2009 19:40	Defect rectification	Informed EPD by letter dated 22/07/2009.
L5 FGD	03/08/2009 00:13 to 08/08/2009 17:25	Installation of equipment for commissioning test, GGH washing and defect rectification	Informed EPD by letter dated 10/08/2009.
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L5 FGD	16/08/2009 00:09 to 27/09/2009 23:38	Internal inspection and defect rectification	Informed EPD by letters dated 14/8/2009 and 28/09/2009

## 1.5 Summary of EM&A Requirements

Environmental Monitoring and Audit (EM&A) requirements have been discussed in the Environmental Impact Assessment (EIA) Report for the Project. The assessment results indicate that environmental monitoring work required for the EM&A programmes of this Project is already in place or would be implemented under Lamma Power Station Extension Environmental Permit or environmental licenses for the operation of the existing Lamma Power Station. Such monitoring works are considered adequate for this Project and no additional EM&A activities are required. Hence, environmental monitoring for air quality and water quality are carried out for the purpose of this

EM&A program as well as for fulfilling the requirements stipulated in the relevant licences.

The EM&A monitoring work for air and water quality are described in Section 2 and Section 3 respectively.

The following environmental audits are summarized in Section 4 of the report:

- Environmental monitoring results;
- The status of environmental licensing and permits for the Project;
- The implementation status of environmental protection and pollution control / mitigation measures.

The future key issues for the Project will be reported in Section 5 of this report.

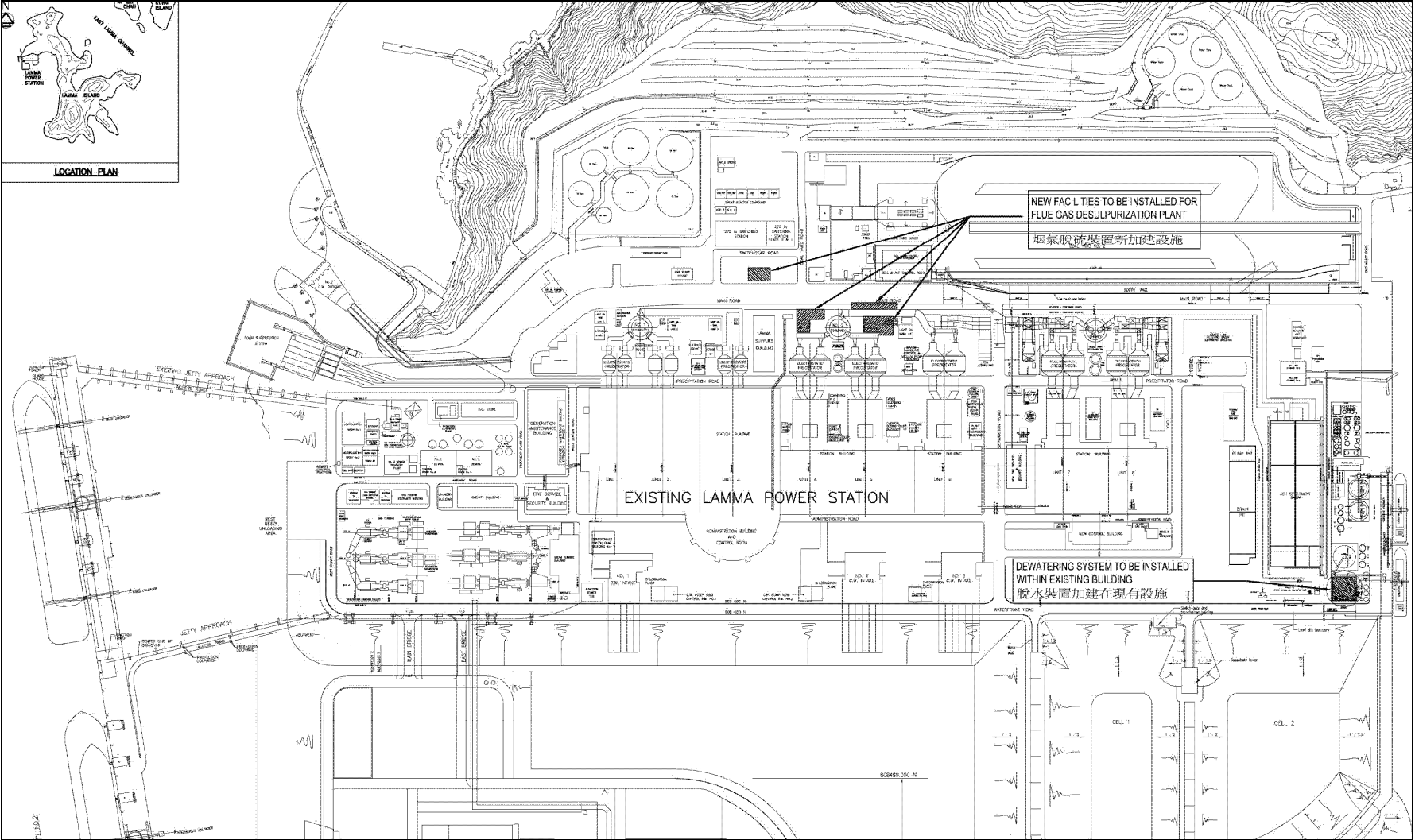


Figure 1.1 Location of New Facilities for L4 & L5 FGD Plant

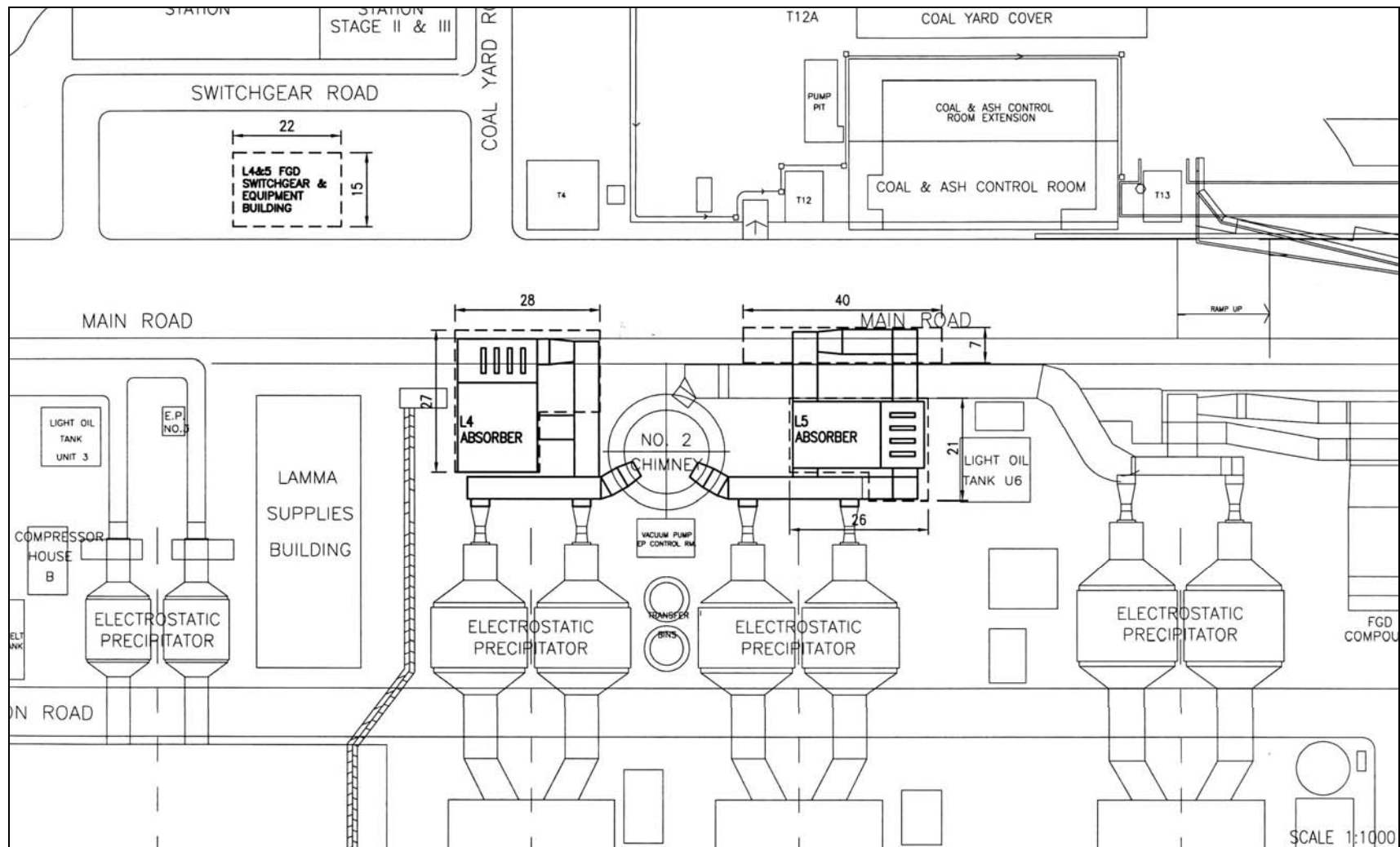


Figure 1.2 General Arrangement of L4 & L5 FGD Plant

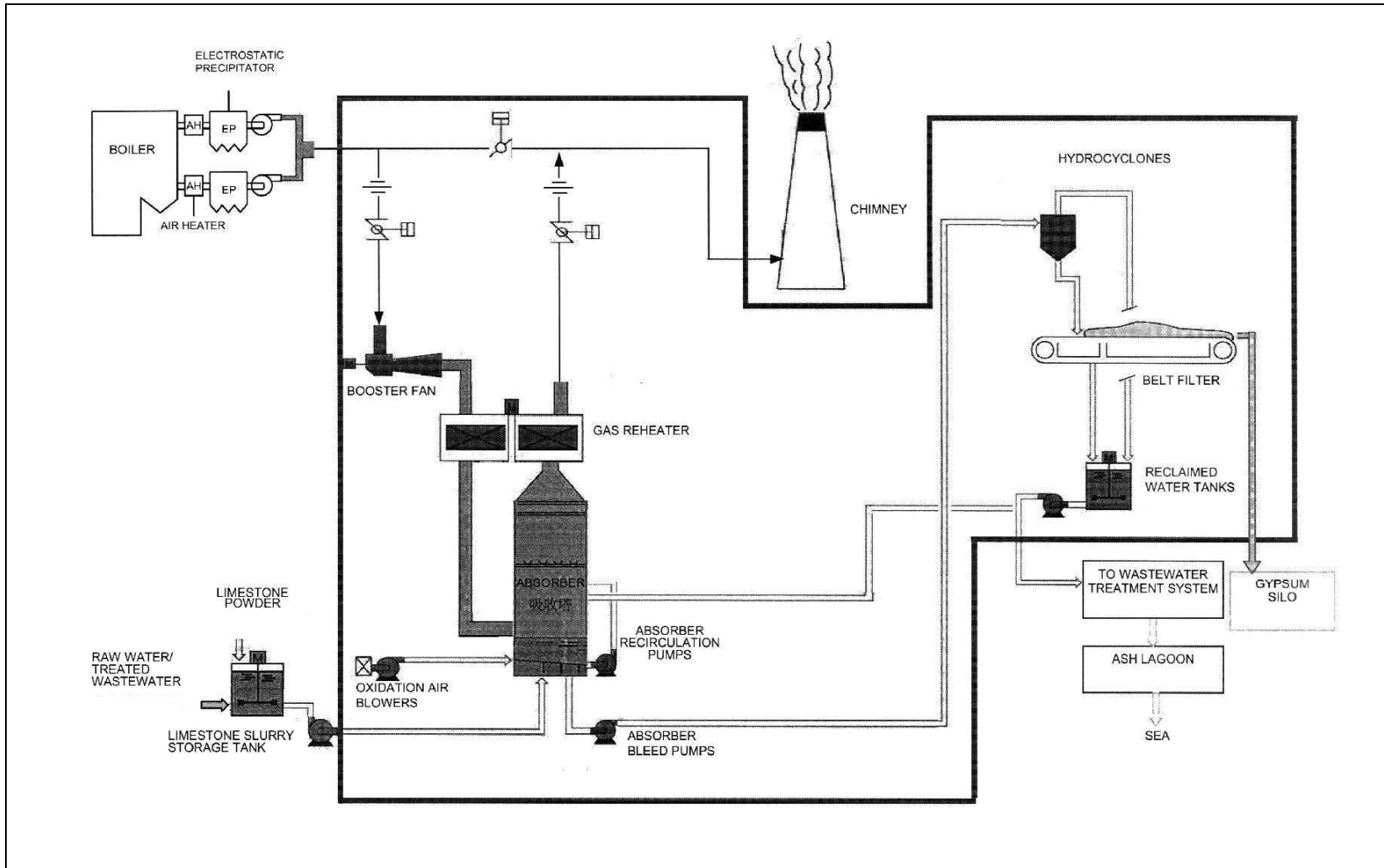


Figure 1.3 Schematic Diagram of the L4 & L5 FGD Plant

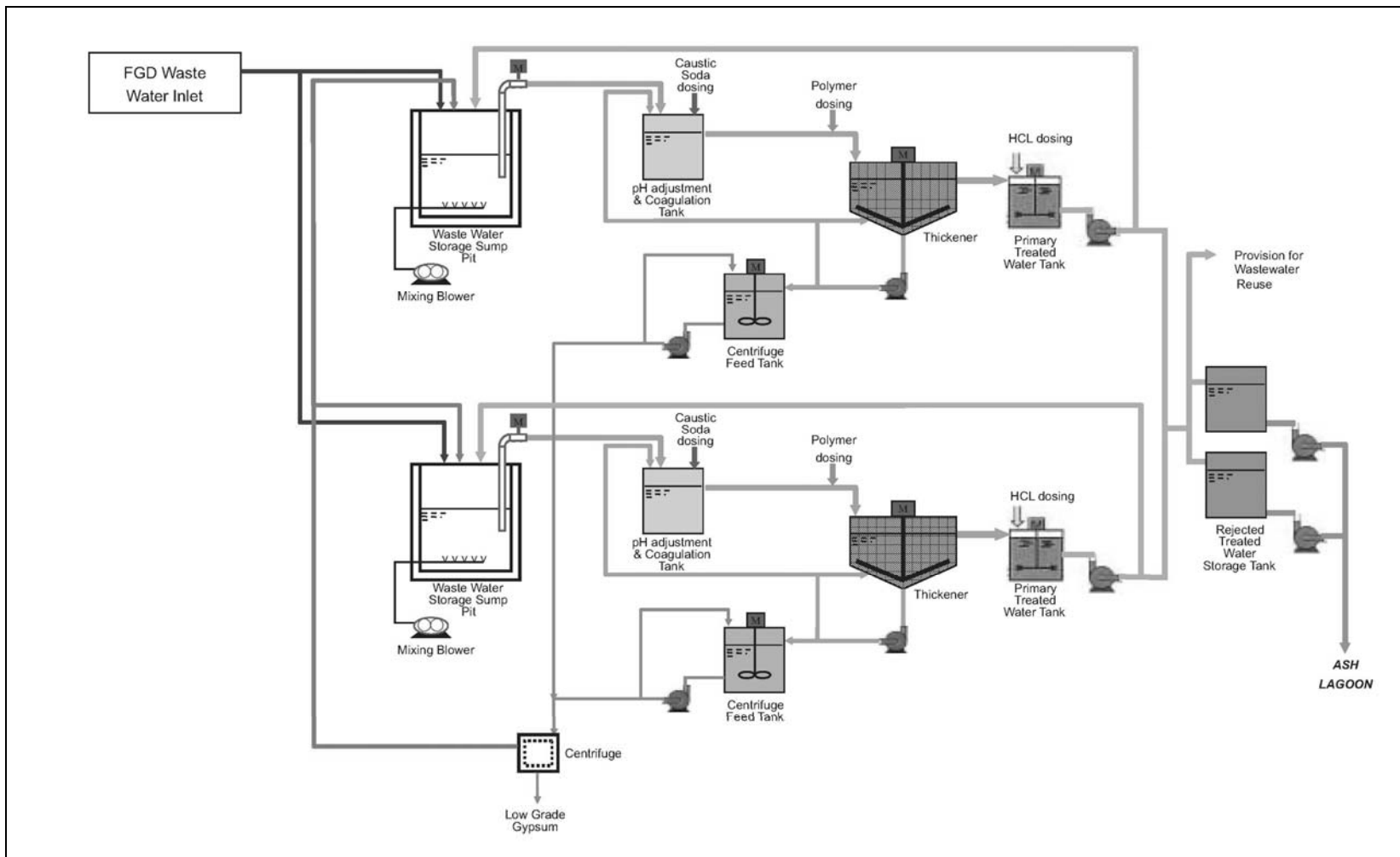


Figure 1.4 Simplified Schematic Diagram of FGD Wastewater Treatment Plant

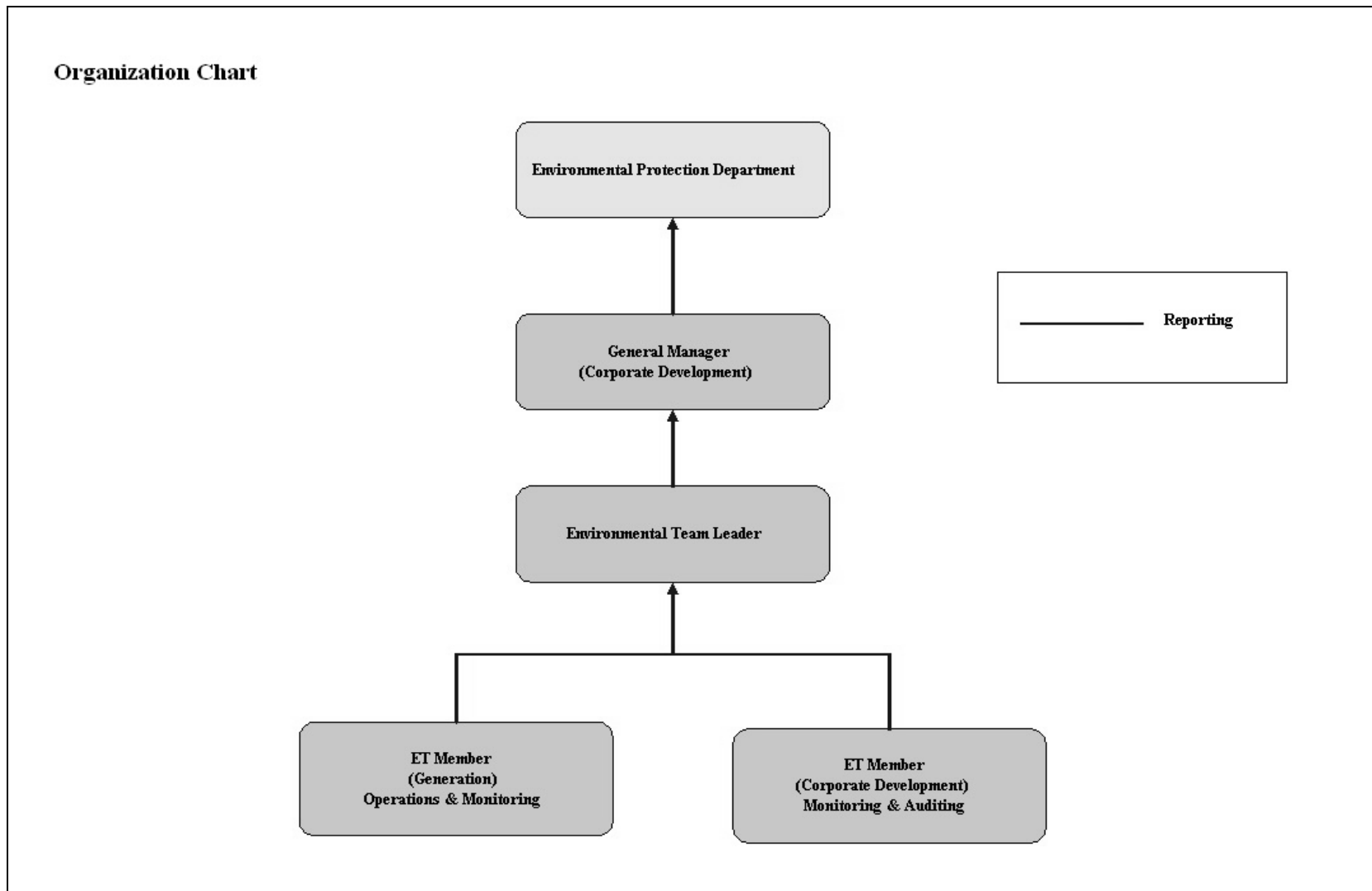


Figure 1.5 Organization Structure at Operational Phase of the Project

## 2. AIR QUALITY

### 2.1 Monitoring Requirements

Since the Project will bring a general air quality improvement, no additional EM&A activities are considered required, besides those already in place, such as those required by specific process licenses for the operation of the existing Lamma Power Station. In accordance with the requirements stipulated in the Specified Processes Licence issued under Air Pollution Control Ordinance, various operation parameters as stated in Table 2.1 were monitored and checked against the Action/Limit Levels shown in Appendix A.

Table 2.1 Air Quality Monitoring Parameters and Frequency

Sources of Emission	Parameter	Frequency
Steam boiler L5	Particulate	Once / year
	Particulate (Opacity)	Continuous
	SO <sub>2</sub>	Continuous
	NO <sub>x</sub> expressed as NO <sub>2</sub>	Continuous
Fugitive Dust (Coal, PFA, Limestone, gypsum)	Total Suspended Particulate	Once every six days
Chimney emissions	Ambient air	Continuous at existing ambient air monitoring stations
	SO <sub>2</sub>	
	NO <sub>2</sub>	

### 2.2 Summary of Results and Observations

Monitoring of various parameters as listed in Table 2.1 above were conducted during the operation of Unit L5 in the reporting period. A summary of monitoring data is shown in Appendix B.

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

### 3. WATER QUALITY

#### 3.1 Monitoring Requirements

According to the EIA Report for the Project, the current monitoring programme for the Lamma Power Station can cover the Project and no additional EM&A measures are required besides those already in place. Hence, the EM&A work on water quality should strictly follow the relevant monitoring requirements stipulated in the discharge licence for Ash Lagoon issued under the Water Pollution Control Ordinance (WPCO).

Water quality monitoring was carried out for FGD Waste Water Treatment Plant (WWTP) in the reporting period. The parameters stated in Table 3.1 were monitored and checked against the Action/Limit Levels as given in Appendix A.

Table 3.1 Water Quality Monitoring Parameters and Frequencies

Item	Parameters	Frequencies
1	pH	Daily
2	Suspended Solids	Daily
3	Iron	Monthly
4	Barium	Monthly
5	Mercury	Monthly
6	Cadmium	Monthly
7	Cyanide	Monthly
8	Total Phosphorus	Monthly
9	Total Nitrogen	Monthly

#### 3.2 Summary of Results and Observations

Monitoring of various parameters as listed in Table 3.1 above were carried out during the discharge of the WWTP in the reporting period. A summary of the data is shown in Appendix C.

The data recorded for the monitoring parameters were all below their corresponding Action/Limit Levels. No Action/Limit level exceedance was recorded in the reporting period. The effluent quality was generally satisfactory.

## 4. ENVIRONMENTAL AUDIT

### 4.1 Review of Environmental Monitoring Procedures

The environmental monitoring procedures were regularly reviewed by the Environmental Team. No modification to the existing monitoring procedures was recommended.

### 4.2 Assessment of Environmental Monitoring Results

#### *Monitoring results for Air Quality and Water Quality*

The environmental monitoring results for air quality, noise and water quality are presented in Sections 2, 3 and 4 respectively are summarized in Table 4.1.

Table 4.1 Summary of Action/Limit Level Exceedances on Monitoring Parameters

Item	Parameter Monitored	Monitoring Period	No. of Exceedances In		Event/Action Plan Implementation Status and Results
			Action Level	Limit Level	
Air					
1	Annual analysis of dust particulate emission rates at chimney stacks.	01/07/09-30/09/09	N.A.*	N.A.*	
2	Continuous monitoring of opacity, NOx, SO2 and CO2 in the flue gas at the chimney stacks	01/07/09-30/09/09	0	0	
3	TSP monitoring at Lamma Power Station Boundary (ie East Gate and Reservoir).	01/07/09-30/09/09	0	0	
4	Ambient SO2 & NOx monitoring at the Peak, Queen Mary Hospital, Victoria Road, Chung Hom Kok, Ap Lei Chau and	01/07/09-30/09/09	0	0	

Item	Parameter Monitored	Monitoring Period	No. of Exceedances In		Event/Action Plan Implementation Status and Results
			Action Level	Limit Level	
	Cheung Chau.				
Water					
1	pH in WWTP Effluent	01/07/09-30/09/09	0	0	
2	Suspended Solids in WWTP Effluent	01/07/09-30/09/09	0	0	
3	Iron in WWTP Effluent	01/07/09-30/09/09	0	0	
4	Barium in WWTP Effluent	01/07/09-30/09/09	0	0	
5	Mercury in WWTP Effluent	01/07/09-30/09/09	0	0	
6	Cadmium in WWTP Effluent	01/07/09-30/09/09	0	0	
7	Cyanide in WWTP Effluent	01/07/09-30/09/09	0	0	
8	Total Phosphorus in WWTP Effluent	01/07/09-30/09/09	0	0	
9	Total Nitrogen in WWTP Effluent	01/07/09-30/09/09	0	0	

Note: \* Monitoring was not scheduled in the reporting period.

#### *Waste Management Records*

The quantity of FGD gypsum and sludge collected for reuse by contractor in the reporting period are shown in Table 4.2.

Table 4.2 Amount of Gypsum and Sludge Collected for Reuse by Contractor

Period	Amount of Gypsum Collected	Amount of Sludge Collected
July 2009	10,194.2 MT	64.5 MT
August 2009	6,090.6 MT	68.3 MT
September 2009	6,178.8 MT	30.4 MT

#### 4.3 Status of Environmental Licensing and Permitting

All permits/licenses obtained as of September 2009 are summarised in Table 4.3.

Table 4.3 Summary of Environmental Licensing and Permit Status

Description	Permit / Licence No.	Valid Period		Status
		From	To	
Environmental Permit	EP-248/2006	25/04/2006	-	Valid
Specified Processes Licence issued under APCO	L-7-002(7)	01/01/2009	31/12/2010	Valid
WPCO discharge licence for Ash Lagoon	EP890/W2/XD018	16/04/2007	31/12/2011	Valid

#### 4.4 Implementation Status of Environmental Mitigation Measures

Mitigation measures detailed in the EIA Report and EP are required to be implemented. An updated summary of the Environmental Mitigation Implementation Schedule (EMIS) is presented in Appendix D.

#### 4.5 Implementation Status of Event/Action Plan

A list of specific actions in the event of exceedances of the various threshold levels for specific emission and discharge sources is given in Appendix A.

As no Action/Limit level exceedance was recorded, no action has been devised.

#### 4.6 Implementation Status of Environmental Complaint Handling Procedures

There was no complaint on environmental issues against the Project in the reporting period.

Table 4.4 Environmental Complaints / Enquiries Received

Case Reference / Date, Time Received / Date, Time Concerned	Descriptions / Actions Taken	Conclusion / Status
Nil	N/A	N/A

Table 4.4 Outstanding Environmental Complaints / Enquiries Carried Over

Case Reference / Date, Time Received / Date, Time Concerned	Descriptions / Actions Taken	Conclusion / Status
Nil	N/A	N/A

## **5. FUTURE KEY ISSUES**

### **5.1 Outage Plan for the coming 3 months**

No major outage planned for the next 3 months.

### **5.2 Key issues for the coming 3 months**

Key issues to be considered in the coming 3 months include:

#### *Air Impact*

- To continuously carry out the air quality monitoring for Unit L5.

#### *Water Impact*

- To continuously carry out the water quality monitoring for FGD Waste Water Treatment Plant.

## **6. CONCLUSION**

Environmental monitoring was performed as required in the reporting period from July to September 2009. All monitoring results were checked and reviewed.

No Action/Limit level exceedance on air quality parameters were recorded in the reporting period.

No Action/Limit level exceedance on water quality parameters were recorded in the reporting period.

Environmental mitigation measures recommended in the EIA Report and EP were implemented in the reporting period. No complaint against the Project was received in the reporting month. No prosecution was received for this Project in the reporting period.

The environmental performance of the Project was generally satisfactory.

## Appendix A Event/Action Plans in Response to Exceedance of AL Levels

### A.1 Air

Source of Emissions	Parameters to be Monitored	Frequency	Concentration Not to Be Exceeded	Action	Limit	Proposed Action
Steam boiler L5	Particulate	once/year	85 mg/Nm <sup>3</sup>	-	85	ET Leader informs Generation Division at action level. Maintenance initiated. Temporary load shift until pollution control equipment repaired and reinstated. Report to EPD.
	Particulate (Opacity)	continuous	40% (bihourly)	35	40	
	SO <sub>2</sub>	continuous	200 mg/Nm <sup>3</sup> (1h)	190	200	
	NO <sub>x</sub> expressed as NO <sub>2</sub>	continuous	615 mg/Nm <sup>3</sup> (1h)	585	615	
Fugitive dust (Coal, PFA, limestone, gypsum)	TSP	Once every six days.	260 (µg/m <sup>3</sup> ) (24 hours)	-	260	Investigation of sources and additional dust suppression to be employed at Limit level. Frequency of monitoring to be increased as necessary.
Chimney emissions	Ambient air SO <sub>2</sub>	Continuous at existing ambient air monitoring stations	800 (µg/m <sup>3</sup> ) (1h)	-	800	ET to review data on post-hoc basis and check for possible power station contribution.
	NO <sub>2</sub>		300 (µg/m <sup>3</sup> ) (1h)	-	300	

## A.2 Water

Source of Discharges	Parameters to be Monitored	Frequency	Concentration Not to Be Exceeded	Action	Limit	Proposed Action
FGD Wastewater Treatment Plant	pH	Daily	6-9	-	6-9	If pH exceeds limit level, consideration to be given to adjust chemical dosing. ET Leader inform Generation Division and investigation be initiated to identify and remedy cause.  For all other parameters except pH, Generation Division to be informed, frequency of monitoring to be increased, and investigations to be initiated to identify cause and remedy if concentration exceeds action level. If problem persists to exceed the limit level, ET Leader verbally informs EPD and ensures remedial actions implemented.
	Suspended Solids	Daily	30 mg/L	25	30	
	Iron	Monthly	4 mg/L	3.6	4	
	Barium	Monthly	1.5 mg/L	1.3	1.5	
	Mercury	Monthly	0.005 mg/L	0.0045	0.005	
	Cadmium	Monthly	0.005 mg/L	0.0045	0.005	
	Cyanide	Monthly	0.1 mg/L	0.09	0.1	
	Total Phosphorus	Monthly	8 mg/L	7.2	8	
	Total Nitrogen	Monthly	400 mg/L	360	400	

## Appendix B

### Air Quality Monitoring Results

#### B.1 Ambient Total Suspended Particulate Monitoring at Lamma Power Station

Date: Third Quarter of 2009 (July - September)

DATE	TSP CONCENTRATION ( $\mu\text{g}/\text{m}^3$ )		WEATHER INFORMATION (from Hong Kong Observatory)		
	Reservoir	East Gate	Mean Wind Speed (km/hr)	Prevailing Wind Dir. ( $^{\circ}$ )	Mean R.H. (%)
03/07/2009	67	78	32.6	220	76
09/07/2009	34	34	17.0	230	72
15/07/2009	19	(1)	25.8	090	83
17/07/2009	-	30	15.1	080	73
21/07/2009	32	26	12.0	110	83
27/07/2009	(1)	36	20.0	160	86
29/07/2009	34	-	20.0	130	82
02/08/2009	62	50	7.8	150	80
08/08/2009	85	83	29.8	260	78
14/08/2009	27	(1)	8.0	160	88
18/08/2009	-	23	9.9	110	85
20/08/2009	40	28	9.5	230	74
26/08/2009	24	23	12.0	110	79
01/09/2009	35	36	23.3	050	74
07/09/2009	35	35	17.0	090	74
13/09/2009	107	82	11.4	201	79
19/09/2009	73	(1)	17.3	220	77
22/09/2009	-	60	22.5	020	76
25/09/2009	37	34	28.6	090	73

Remark: (1) Breakdown of High Volume Air Sampler

	TSP ( $\mu\text{g}/\text{m}^3$ )
Action Level	-
Limit Level	260

Calibration: Calibration at site as per attached

Equipment used: Reservoir & East Gate : High Volume Air Sampler

## B.2 Unit L5 Stack Monitoring at Lamma Power Station

### Monthly Summary of Stack NO<sub>x</sub> and SO<sub>2</sub>

Date	Daily Maximum		
	SO <sub>2</sub> concentration (mg/Nm <sup>3</sup> )*	NO <sub>x</sub> concentration (mg/Nm <sup>3</sup> )*	Opacity (%)
1/7/2009	12	460	20
2/7/2009	22	489	25
3/7/2009	48	487	27
4/7/2009	35	467	25
5/7/2009	16	469	18
6/7/2009	36	420	24
7/7/2009	37	437	22
8/7/2009	49	475	33
9/7/2009	23	491	28
10/7/2009	30	448	26
11/7/2009	25	485	25
12/7/2009	30	382	15
13/7/2009	19	437	16
14/7/2009	10	485	17
15/7/2009	23	529	19
16/7/2009	13	475	18
17/7/2009	26	419	17
18/7/2009	54	384	17
19/7/2009	103	427	14
20/7/2009	133	427	16
21/7/2009	126	395	15
22/7/2009	28	402	17
23/7/2009	38	399	19
24/7/2009	20	508	17
25/7/2009	18	494	15
26/7/2009	15	427	16
27/7/2009	36	518	17
28/7/2009	29	476	18
29/7/2009	29	460	16
30/7/2009	24	435	15
31/7/2009	26	446	15

Date	Daily Maximum		
	SO <sub>2</sub> concentration (mg/Nm <sup>3</sup> )*	NO <sub>x</sub> concentration (mg/Nm <sup>3</sup> )*	Opacity (%)
1/8/2009	21	493	14
2/8/2009	35	498	24
3/8/2009	FGD Plant Outage	498	18
4/8/2009	FGD Plant Outage	403	27
5/8/2009	FGD Plant Outage	425	20
6/8/2009	FGD Plant Outage	326	26
7/8/2009	FGD Plant Outage	440	29
8/8/2009	9	384	23
9/8/2009	33	321	15
10/8/2009	57	345	14
11/8/2009	67	325	14
12/8/2009	64	416	14
13/8/2009	69	379	14
14/8/2009	64	420	14
15/8/2009	29	435	14
16/8/2009	FGD Plant Outage	447	23
17/8/2009	FGD Plant Outage	478	20
18/8/2009	FGD Plant Outage	451	23
19/8/2009	FGD Plant Outage	478	25
20/8/2009	FGD Plant Outage	485	21
21/8/2009	FGD Plant Outage	487	21
22/8/2009	FGD Plant Outage	417	27
23/8/2009	FGD Plant Outage	354	21
24/8/2009	FGD Plant Outage	399	25
25/8/2009	FGD Plant Outage	442	21
26/8/2009	FGD Plant Outage	439	21
27/8/2009	FGD Plant Outage	440	22
28/8/2009	FGD Plant Outage	449	19
29/8/2009	FGD Plant Outage	482	23
30/8/2009	FGD Plant Outage	331	26
31/8/2009	FGD Plant Outage	313	22

Date	Daily Maximum		
	SO2 concentration (mg/Nm3)*	NOx concentration (mg/Nm3)*	Opacity (%)
1/9/2009	FGD Plant Outage	263	23
2/9/2009	FGD Plant Outage	287	18
3/9/2009	FGD Plant Outage	359	24
4/9/2009	FGD Plant Outage	394	25
5/9/2009	FGD Plant Outage	351	24
6/9/2009	FGD Plant Outage	420	27
7/9/2009	FGD Plant Outage	514	25
8/9/2009	FGD Plant Outage	449	22
9/9/2009	FGD Plant Outage	422	14
10/9/2009	FGD Plant Outage	418	16
11/9/2009	FGD Plant Outage	398	25
12/9/2009	FGD Plant Outage	417	25
13/9/2009	FGD Plant Outage	534	21
14/9/2009	FGD Plant Outage	502	19
15/9/2009	FGD Plant Outage	480	17
16/9/2009	FGD Plant Outage	539	20
17/9/2009	FGD Plant Outage	519	19
18/9/2009	FGD Plant Outage	552	17
19/9/2009	FGD Plant Outage	504	19
20/9/2009	FGD Plant Outage	444	18
21/9/2009	FGD Plant Outage	502	25
22/9/2009	FGD Plant Outage	409	22
23/9/2009	FGD Plant Outage	365	21
24/9/2009	FGD Plant Outage	532	22
25/9/2009	FGD Plant Outage	370	25
26/9/2009	FGD Plant Outage	406	24
27/9/2009	FGD Plant Outage	464	25
28/9/2009	50	497	21
29/9/2009	47	421	30
30/9/2009	33	440	24

Note: \* - Hourly average value. Expressed as at 0°C, 101.325kPa, dry and corrected to 12% CO<sub>2</sub> condition.

### **B.3 Ambient SO<sub>2</sub> and NO<sub>2</sub> monitoring Data at Southern District and Cheung Chau during the period from July to September 2009**



THE HONGKONG ELECTRIC COMPANY, LTD.  
AIR QUALITY DATA MONTHLY TIME SERIES REPORT

STATION : VICTORIA PEAK MONTH: JULY YEAR : 2009  
POLLUTANT : NITROGEN DIOXIDE UNIT : MICROGRAMS/CUBIC METER

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	1	2	1	0	1	1	0	2	6	18	19	5	2	3	3	18	8	9	13	15	10	6	****	3	6
2	2	2	10	2	0	2	3	6	7	2	3	3	4	6	3	20	25	20	24	12	8	8	****	8	8
3	2	1	1	0	1	6	3	3	5	22	27	9	5	12	5	12	32	27	19	13	15	13	****	5	10
4	5	1	0	0	3	0	1	6	10	10	17	17	11	21	16	17	20	16	15	14	15	11	****	11	10
5	3	3	22	0	0	1	6	9	8	11	13	16	16	10	10	13	15	16	16	13	8	9	****	26	11
6	6	1	0	0	0	3	3	10	10	6	21	18	19	8	10	16	14	19	24	30	26	24	****	11	12
7	10	5	1	2	0	10	5	10	4	4	5	14	26	18	37	33	36	44	38	24	28	26	****	17	17
8	10	2	0	0	0	5	5	9	12	9	29	30	20	28	22	16	18	13	16	19	18	18	****	7	13
9	7	6	5	7	0	1	4	6	4	6	8	14	11	16	13	10	9	10	9	16	28	29	****	4	10
10	4	2	1	3	2	6	13	17	21	24	29	42	50	58	37	38	48	66	73	67	77	104	****	15	35
11	5	2	2	0	0	1	3	11	9	11	12	13	7	8	6	4	1	0	0	0	0	0	****	0	4
12	0	0	0	0	0	0	0	0	0	0	3	1	1	0	1	0	0	1	4	10	8	5	****	4	2
13	3	0	0	1	3	3	10	14	25	32	31	23	25	27	24	27	32	52	40	39	21	13	****	8	20
14	7	5	1	1	0	0	0	6	6	5	8	6	23	31	37	43	34	34	28	15	11	9	****	2	13
15	0	0	0	0	0	1	0	1	1	1	2	4	2	1	3	3	2	3	1	0	0	0	****	1	1
16	0	0	0	0	0	0	0	0	0	2	1	0	0	1	2	1	0	0	0	0	0	0	****	0	0
17	0	0	0	0	0	0	1	2	2	5	15	9	M	19	12	23	11	10	17	16	11	12	****	33	9
18	32	33	39	24	13	31	29	60	72	68	75	75	80	67	51	48	31	43	69	29	25	26	****	16	45
19	26	18	12	11	14	4	8	15	15	15	16	18	17	16	20	19	19	17	10	6	5	3	****	2	13
20	0	1	0	1	7	4	10	13	11	13	10	11	9	8	11	6	11	12	11	9	7	11	****	8	8
21	8	2	0	0	4	0	2	4	5	5	8	8	18	12	14	11	10	11	7	9	4	2	****	6	7
22	9	12	2	5	5	1	7	10	16	20	20	15	11	10	13	13	15	17	15	27	24	22	****	18	13
23	15	12	14	13	11	7	9	6	12	16	21	27	15	9	8	13	21	18	23	20	13	13	****	8	14
24	2	1	1	0	0	1	2	5	15	15	5	6	15	15	21	34	23	25	15	10	12	8	****	8	10
25	6	1	1	0	2	0	17	16	9	12	32	31	13	19	15	19	25	24	22	21	18	19	****	9	14
26	5	4	2	0	0	2	2	6	3	7	10	14	17	19	12	25	16	19	20	24	22	16	****	14	11
27	12	7	6	7	0	1	6	14	31	31	14	12	13	19	21	19	23	26	30	22	25	21	****	15	16
28	15	9	7	6	4	1	4	5	10	17	16	20	16	18	21	14	15	23	22	23	27	20	****	11	14
29	10	7	2	3	1	5	9	16	13	15	16	15	11	12	12	12	13	13	9	12	7	7	****	3	10
30	0	0	0	0	0	0	1	2	1	6	6	3	1	2	5	4	5	3	2	2	2	0	****	0	2
31	0	0	0	0	0	0	0	3	7	8	5	5	2	2	1	3	9	6	9	9	6	3	****	6	4

MONTHLY STATISTICS:

GEOM	ARITH	PERCENTILE					RANGE			STD GEOM	PERCENT	NO. OF TIMES ABOVE OBJECTIVE	
MEAN	MEDIAN	50	90	95	98	99	1-HR	24-HR	DEVIATION	VALID DATA	1-HR	24-HR	
6	9	9	26	33	52	69	0 - 104	0 - 45	5	96	0	0	

NOTES:

1. FLAGS FOR INVALID DATA :
  - \*\*\*\* : DAILY ZERO/SPAN CHECK
  - D : DYNAMIC CALIBRATION
  - T : TELEMETRY/DATALOGGR/ANALYZER FAULT
  - M : MAINTENANCE OR MACHINE SHUTDOWN
  - P : POWER FAILURE
2. BRACKETED READINGS EXCEED 1-HR OBJECTIVE 300 OR 24-HR OBJECTIVE 150

THE HONGKONG ELECTRIC COMPANY, LTD.  
AIR QUALITY DATA MONTHLY TIME SERIES REPORT

STATION : VICTORIA PEAK  
 POLLUTANT : SULPHUR DIOXIDE  
 MONTH: AUGUST  
 YEAR : 2009  
 UNIT : MICROGRAMS/CUBIC METER

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	
1	2	0	0	0	0	0	0	0	0	3	4	3	2	1	0	0	0	10	13	18	24	14	****	5	4	
2	2	12	7	12	17	21	17	17	36	27	11	9	4	6	4	2	2	3	4	5	7	8	****	11	11	
3	8	3	2	2	1	1	2	1	1	1	0	1	2	1	0	0	0	0	0	0	0	0	****	2	1	
4	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1	0	0	****	3	1	
5	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	****	2	0	
6	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2	3	2	3	4	3	3	****	8	2	
7	2	1	1	1	22	11	7	5	4	27	16	57	41	19	3	1	1	2	2	2	2	2	****	6	10	
8	2	2	2	2	2	2	2	4	10	16	22	23	16	9	4	3	2	1	4	2	1	0	****	3	6	
9	1	2	2	2	2	2	9	14	16	17	18	16	15	17	7	4	3	4	7	8	6	2	****	5	8	
10	5	4	2	4	1	1	1	3	1	3	2	1	2	2	4	2	1	0	0	0	0	0	****	3	2	
11	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	****	1	0	
12	0	0	0	0	0	0	0	0	0	0	0	6	2	0	17	31	0	1	0	0	0	0	****	2	3	
13	0	2	1	0	2	0	0	0	1	0	10	1	1	0	0	6	10	1	5	10	1	1	****	2	2	
14	1	0	2	2	2	1	1	1	6	2	3	2	3	3	0	0	1	1	2	1	1	1	****	4	2	
15	1	1	1	1	1	1	1	1	1	1	5	1	8	11	10	2	0	1	0	0	1	1	****	3	2	
16	1	0	0	0	0	0	0	0	0	0	0	0	0	13	15	1	0	1	1	1	2	2	****	5	2	
17	3	3	1	2	2	2	2	2	2	1	0	0	0	0	2	12	2	2	4	4	4	2	****	4	2	
18	1	2	1	1	1	1	2	17	10	15	13	16	6	1	1	1	1	1	1	1	1	1	****	4	4	
19	2	1	1	2	2	1	1	1	1	5	7	7	12	13	6	2	4	3	2	2	2	2	4	****	3	4
20	2	2	1	2	1	1	0	0	1	2	2	9	11	5	6	68	55	21	11	6	2	3	****	4	9	
21	7	11	3	2	1	2	1	1	2	2	2	6	10	20	31	32	43	20	6	3	9	19	****	5	10	
22	5	3	2	3	2	1	1	1	2	2	1	3	0	0	0	0	0	0	0	1	2	4	****	5	2	
23	7	3	3	2	1	1	1	1	4	64	24	16	10	7	9	4	0	2	1	1	4	7	****	9	8	
24	6	2	1	1	1	1	2	4	6	12	30	34	30	12	2	1	2	1	1	1	0	1	****	5	7	
25	2	2	4	8	6	5	5	6	4	3	3	3	3	3	2	2	3	2	3	2	1	3	****	5	4	
26	3	3	3	3	3	3	2	2	0	1	1	1	1	2	0	0	0	0	0	0	1	1	****	3	2	
27	1	1	1	1	1	2	2	1	1	4	6	2	1	1	0	1	4	1	1	2	0	1	****	3	2	
28	0	0	1	2	2	2	2	1	0	0	1	0	0	0	6	3	2	1	0	0	0	1	****	1	1	
29	0	0	0	0	0	0	0	3	10	12	14	6	6	3	1	2	4	0	0	0	0	0	****	2	3	
30	0	0	0	0	1	0	0	0	0	0	0	0	5	1	0	0	0	0	0	0	1	10	****	7	1	
31	9	19	14	20	17	14	16	25	14	4	1	1	0	0	1	1	0	0	0	1	1	1	****	3	7	

MONTHLY STATISTICS:

GEOM	ARITH	-----PERCENTILE-----					-----RANGE-----			STD GEOM	PERCENT	NO. OF TIMES	
MEAN	MEDIAN	MEAN	50	90	95	98	99	1-HR	24-HR	DEVIATION	VALID DATA	1-HR	24-HR
1	1	4	1	11	17	26	33	0	- 68	6	96	0	0

NOTES:

1. FLAGS FOR INVALID DATA :
  - \*\*\*\* : DAILY ZERO/SPAN CHECK
  - D : DYNAMIC CALIBRATION
  - T : TELEMETRY/DATALOGGR/ANALYZER FAULT
  - M : MAINTENANCE OR MACHINE SHUTDOWN
  - P : POWER FAILURE
2. BRACKETED READINGS EXCEED 1-HR OBJECTIVE 800 OR 24-HR OBJECTIVE 350



THE HONGKONG ELECTRIC COMPANY, LTD.  
AIR QUALITY DATA MONTHLY TIME SERIES REPORT

STATION : VICTORIA PEAK  
 POLLUTANT : SULPHUR DIOXIDE  
 MONTH: SEPTEMBER  
 YEAR : 2009  
 UNIT : MICROGRAMS/CUBIC METER

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	2	2	1	2	2	3	3	2	7	5	6	5	4	2	2	1	1	1	2	2	3	3	****	6	3
2	3	3	3	4	3	4	6	7	7	4	5	4	2	3	3	4	4	3	3	3	3	3	****	5	4
3	3	3	2	2	1	2	3	3	6	4	3	3	3	2	1	1	2	2	2	2	2	****	6	3	
4	2	2	2	2	2	1	2	3	2	2	4	16	13	5	6	5	8	2	1	1	3	2	****	3	4
5	1	1	1	1	1	1	2	1	3	3	3	3	3	2	0	1	1	3	1	1	2	1	****	6	2
6	4	1	2	5	5	5	5	5	4	4	4	3	1	2	2	2	1	1	2	2	1	2	****	3	3
7	1	2	2	1	1	1	2	1	2	1	0	0	0	0	0	0	0	1	0	1	0	2	****	1	1
8	0	0	0	1	2	2	2	2	2	1	1	2	1	1	1	1	2	2	3	3	1	4	****	6	2
9	5	4	3	3	4	3	4	5	6	5	5	4	5	5	5	3	3	3	3	2	3	3	****	5	4
10	3	3	4	3	3	4	4	5	5	5	6	5	5	4	5	4	4	3	3	3	3	3	****	5	4
11	3	3	3	3	3	2	2	4	3	3	3	2	2	3	2	2	2	1	1	1	1	1	****	3	2
12	3	2	1	2	1	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	****	3	1
13	3	2	1	1	1	2	2	7	5	9	11	10	10	19	19	48	41	32	23	1	1	0	****	2	11
14	0	0	1	1	4	2	1	1	3	2	1	1	0	1	1	0	0	0	0	2	1	2	****	5	1
15	2	2	1	4	2	2	0	0	0	0	1	0	0	0	1	1	1	0	1	1	1	1	****	2	1
16	1	2	2	0	0	2	4	4	5	5	6	6	6	6	7	7	8	9	9	9	8	7	****	9	5
17	6	5	5	5	5	5	5	4	5	5	4	5	6	5	4	22	41	78	37	30	44	20	****	25	16
18	48	11	6	6	4	3	1	1	50	43	33	23	42	39	92	122	4	2	2	3	2	3	****	3	24
19	1	1	0	0	0	2	2	2	16	17	13	14	18	30	50	2	1	2	2	17	13	9	****	3	9
20	2	2	2	3	3	4	5	4	3	4	3	2	28	4	58	25	2	1	0	0	0	0	****	2	7
21	0	1	1	1	1	1	1	1	1	1	2	8	5	5	7	4	5	2	5	7	4	7	****	9	3
22	16	7	3	2	2	1	2	2	10	3	3	3	3	3	6	2	2	3	6	7	5	3	****	4	4
23	2	3	2	3	4	3	4	5	6	6	5	5	4	2	2	2	2	2	2	2	2	2	****	4	3
24	2	2	3	3	3	4	4	4	6	6	6	6	3	3	2	2	2	2	2	3	2	2	****	4	3
25	2	3	3	2	2	3	4	4	4	4	4	3	2	3	2	2	1	2	3	2	3	2	****	4	3
26	3	3	4	4	3	3	3	2	5	7	6	4	2	1	1	2	1	2	2	2	2	1	****	3	3
27	3	3	2	2	3	6	6	7	7	6	7	8	5	4	3	3	4	4	4	6	4	3	****	6	5
28	5	4	5	6	6	7	6	6	5	5	4	5	3	4	3	2	2	2	2	3	3	1	****	1	4
29	1	1	1	1	2	3	2	2	2	3	4	4	4	1	2	1	1	1	1	1	1	3	****	4	2
30	4	2	2	2	2	3	3	4	3	4	4	4	4	4	1	2	1	1	1	1	1	3	****	5	3

MONTHLY STATISTICS:

GEOM	ARITH	<-----PERCENTILE----->						<-----RANGE----->				STD GEOM	PERCENT	NO. OF TIMES ABOVE OBJECTIVE	
MEAN	MEDIAN	50	90	95	98	99	1-HR	24-HR	24-HR	DEVIATION	VALID DATA	1-HR	24-HR		
2	3	3	7	14	38	48	0	- 122	1 - 24	3	95	0	0		

- NOTES:
1. FLAGS FOR INVALID DATA :
    - \*\*\*\* : DAILY ZERO/SPAN CHECK
    - D : DYNAMIC CALIBRATION
    - T : TELEMETRY/DATALOGGR/ANALYZER FAULT
    - M : MAINTENANCE OR MACHINE SHUTDOWN
    - P : POWER FAILURE
  2. BRACKETED READINGS EXCEED 1-HR OBJECTIVE 800 OR 24-HR OBJECTIVE 350

THE HONGKONG ELECTRIC COMPANY, LTD.  
AIR QUALITY DATA MONTHLY TIME SERIES REPORT

STATION : VICTORIA PEAK MONTH: SEPTEMBER YEAR : 2009  
 POLLUTANT : NITROGEN DIOXIDE UNIT : MICROGRAMS/CUBIC METER

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	6	3	4	6	4	9	10	35	47	29	26	25	19	17	6	3	4	6	2	2	4	1	****	18	12
2	16	11	4	1	0	0	5	20	27	27	21	22	19	16	13	9	8	8	5	9	6	4	****	7	11
3	3	5	0	0	0	3	9	23	38	35	30	27	13	11	8	9	11	9	16	8	6	6	****	13	12
4	4	2	2	0	0	0	5	13	16	25	37	47	42	29	32	29	41	27	24	16	13	9	****	6	18
5	8	8	8	2	5	3	5	8	6	6	9	19	8	7	7	12	15	13	11	9	10	****	9	9	
6	4	1	6	4	7	4	4	13	15	14	16	8	11	8	11	2	3	6	15	14	5	7	****	8	8
7	5	2	5	0	0	1	5	8	15	24	13	24	22	22	18	17	8	4	7	11	10	15	****	10	11
8	22	15	8	3	7	11	15	24	29	34	32	29	21	18	20	11	9	15	15	6	13	18	****	13	17
9	2	0	3	1	0	2	3	11	32	30	24	14	14	15	9	12	10	8	6	7	13	13	****	20	11
10	7	5	1	0	0	3	7	19	23	25	26	17	12	12	19	15	9	5	5	7	4	0	****	5	10
11	0	0	0	0	0	0	1	7	16	20	18	18	12	9	11	16	13	14	10	10	6	4	****	10	8
12	5	2	0	0	1	1	1	6	6	2	5	3	4	5	5	5	2	2	4	13	15	13	****	38	6
13	31	12	17	18	23	14	5	18	24	44	55	50	63	78	66	125	107	84	73	31	5	1	****	2	41
14	10	11	8	10	15	8	11	28	33	31	30	26	27	34	33	21	15	11	9	5	1	0	****	5	17
15	7	4	8	10	4	7	5	6	5	6	7	6	3	3	1	7	12	7	8	11	9	8	****	6	6
16	0	0	0	0	0	0	0	4	5	8	8	5	8	7	6	8	12	14	15	12	11	11	****	5	6
17	6	3	0	0	0	3	1	3	8	14	15	16	13	13	7	38	35	43	32	37	43	36	****	33	17
18	31	13	11	11	5	7	8	6	21	25	30	36	36	37	48	55	13	18	22	25	22	19	****	8	22
19	9	8	12	22	19	29	21	20	35	43	44	38	46	39	32	18	20	24	49	69	60	48	****	34	32
20	30	15	12	11	13	9	15	15	17	29	34	32	38	22	53	37	27	31	30	20	14	12	****	6	23
21	10	3	0	0	0	3	1	23	31	37	43	52	47	54	47	45	65	81	130	119	83	121	****	90	47
22	90	54	20	10	8	13	16	39	54	36	52	42	33	39	61	37	34	59	87	73	66	38	****	40	43
23	40	37	28	28	23	14	21	40	39	29	26	15	19	20	21	27	19	18	18	13	12	11	****	10	23
24	3	3	3	0	1	1	5	13	20	19	19	17	10	7	11	12	9	4	5	6	5	6	****	9	8
25	1	2	2	0	0	1	4	14	15	22	20	16	12	14	7	6	7	8	8	9	7	1	****	2	8
26	4	1	3	9	9	11	24	41	48	50	48	34	23	23	31	12	9	11	34	25	33	12	****	18	22
27	26	19	14	15	20	21	21	29	31	36	40	51	33	22	27	35	35	35	40	35	32	23	****	18	29
28	15	9	6	7	9	7	13	21	28	30	41	30	26	37	46	44	39	37	33	33	32	24	****	25	26
29	18	14	9	6	7	7	9	16	18	20	22	19	18	20	21	25	23	23	23	23	21	23	****	27	18
30	16	12	6	3	4	6	10	17	24	23	24	<----- D ----->	27	13	9	31	50	27	****	32	19				

MONTHLY STATISTICS:

GEOM	ARITH	<-----PERCENTILE----->					<-----RANGE----->			STD GEOM	PERCENT	NO. OF TIMES			
MEAN	MEDIAN	MEAN	50	90	95	98	99	1-HR	24-HR	DEVIATION	VALID DATA	1-HR	24-HR		
11	13	18	13	38	49	71	89	0	- 130	6	- 47	4	95	0	0

- NOTES: 1. FLAGS FOR INVALID DATA :  
 \*\*\*\* : DAILY ZERO/SPAN CHECK  
 D : DYNAMIC CALIBRATION  
 T : TELEMETRY/DATALOGGR/ANALYZER FAULT  
 M : MAINTENANCE OR MACHINE SHUTDOWN  
 P : POWER FAILURE
2. BRACKETED READINGS EXCEED 1-HR OBJECTIVE 300 OR 24-HR OBJECTIVE 150

THE HONGKONG ELECTRIC COMPANY, LTD.  
AIR QUALITY DATA MONTHLY TIME SERIES REPORT

STATION : CHUNG HOM KOK ZONE SUBSTATION      MONTH: JULY      YEAR : 2009  
 POLLUTANT : SULPHUR DIOXIDE      UNIT : MICROGRAMS/CUBIC METER

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	5	8	9	7	5	4	6	9	8	9	4	6	5	7	4	7	7	9	7	9	8	8	****	12	7
2	9	8	7	7	7	8	10	8	9	12	7	8	13	8	8	11	10	7	7	10	12	14	****	17	9
3	13	15	9	7	9	9	9	9	8	13	12	12	15	11	12	13	10	11	13	13	8	18	****	14	11
4	8	10	5	6	12	11	13	11	10	7	8	8	20	10	9	8	9	7	12	8	13	9	****	10	10
5	6	8	5	4	5	7	7	7	9	7	8	5	7	5	5	7	5	5	5	7	5	4	****	11	6
6	7	6	5	5	6	7	8	6	9	7	8	8	5	6	8	9	8	8	11	13	11	8	****	11	8
7	11	13	14	14	12	12	8	8	8	11	11	23	11	10	11	10	8	6	7	11	7	12	****	20	11
8	15	14	18	17	27	22	28	21	15	13	23	19	13	11	10	13	11	13	15	20	13	19	****	26	17
9	17	14	13	14	11	14	14	16	16	11	7	9	11	18	13	13	14	11	8	4	9	14	****	16	12
10	12	14	10	6	6	10	7	7	32	24	18	55	76	41	42	48	52	39	36	30	34	22	****	25	28
11	9	5	5	6	7	4	5	4	4	5	5	5	4	6	4	5	4	5	4	6	5	5	****	11	5
12	6	4	4	5	6	4	5	4	5	6	5	5	3	4	3	3	4	4	6	5	5	5	****	13	5
13	6	5	4	5	7	4	4	5	9	34	19	5	6	29	11	14	21	17	10	9	16	13	****	20	12
14	17	11	10	10	7	5	14	16	25	16	16	10	9	7	5	6	9	13	8	6	7	8	****	11	11
15	7	4	7	4	5	5	5	7	5	3	5	5	8	5	6	5	5	6	5	6	5	5	****	10	6
16	5	5	7	4	5	5	6	5	4	4	3	4	4	3	4	4	6	3	5	7	5	7	****	11	5
17	6	6	7	5	5	6	7	8	6	5	6	8	5	18	22	20	14	11	15	20	21	20	****	21	11
18	27	14	13	20	29	34	38	44	52	59	58	58	65	72	36	14	7	8	10	9	8	10	****	16	30
19	21	19	11	9	8	10	7	5	5	5	6	5	5	5	8	6	6	6	4	6	6	4	****	11	8
20	6	6	5	5	7	7	8	6	6	6	8	6	9	6	7	7	7	6	7	8	9	8	****	15	7
21	10	9	8	8	8	9	7	8	8	7	7	5	5	5	7	8	7	7	8	9	7	7	****	13	8
22	10	8	6	7	8	8	9	8	10	11	14	11	10	8	9	10	8	7	9	6	5	8	****	18	9
23	9	8	7	6	9	11	9	5	5	9	20	18	12	12	8	9	8	11	8	6	5	8	****	20	10
24	6	7	11	12	11	10	8	13	16	8	7	11	10	9	7	9	8	11	10	9	7	7	****	14	10
25	12	12	16	14	13	12	12	9	12	10	9	9	11	7	17	13	13	11	12	12	11	9	****	20	12
26	14	16	11	14	13	13	11	11	8	11	12	10	10	8	9	9	8	8	11	11	14	11	****	18	11
27	14	14	12	7	8	10	13	14	12	7	12	10	6	10	12	10	8	7	7	9	8	7	****	15	10
28	9	11	9	7	6	7	7	6	6	9	8	7	7	7	7	7	8	8	6	8	6	5	****	14	8
29	9	9	6	8	10	10	8	7	7	7	11	4	<-----D----->	5	4	2	4	5	2	3	****	2	6		
30	1	2	1	2	4	1	3	3	1	3	1	1	2	2	2	1	3	2	3	2	2	1	****	3	2
31	2	4	2	2	2	1	1	1	2	2	1	0	1	1	0	0	1	1	1	1	0	1	****	3	1

MONTHLY STATISTICS:

GEOM		ARITH	<-----PERCENTILE----->					<-----RANGE----->			STD GEOM	PERCENT	NO. OF TIMES				
MEAN	MEDIAN	MEAN	50	90	95	98	99	1-HR		24-HR		DEVIATION	VALID DATA	1-HR	24-HR		
8	8	10	8	16	22	37	52	0	-	76	1	-	30	2	95	0	0

NOTES:

1. FLAGS FOR INVALID DATA :
  - \*\*\*\* : DAILY ZERO/SPAN CHECK
  - D : DYNAMIC CALIBRATION
  - T : TELEMETRY/DATALOGGR/ANALYZER FAULT
  - M : MAINTENANCE OR MACHINE SHUTDOWN
  - P : POWER FAILURE
2. BRACKETED READINGS EXCEED 1-HR OBJECTIVE 800 OR 24-HR OBJECTIVE 350



THE HONGKONG ELECTRIC COMPANY, LTD.  
AIR QUALITY DATA MONTHLY TIME SERIES REPORT

STATION : CHUNG HOM KOK ZONE SUBSTATION MONTH: AUGUST YEAR : 2009  
 POLLUTANT : SULPHUR DIOXIDE UNIT : MICROGRAMS/CUBIC METER

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	0	0	0	0	0	0	0	0	3	29	21	1	11	23	16	18	25	35	27	34	31	16	****	1	13
2	0	0	7	6	7	0	6	2	2	1	5	9	18	23	18	12	14	7	4	5	12	7	****	12	8
3	9	9	7	1	0	0	0	0	0	0	0	1	1	2	2	M	3	2	3	4	5	5	****	15	3
4	7	7	5	5	6	5	6	5	3	4	4	5	3	4	3	4	5	4	3	4	5	5	****	13	5
5	6	6	6	5	4	4	5	4	4	4	5	5	5	4	5	6	4	6	3	3	4	****	14	5	
6	7	7	9	7	5	6	7	7	6	7	5	6	5	6	7	8	9	8	9	10	15	20	****	27	9
7	27	25	25	60	34	19	30	16	17	37	44	28	38	25	17	18	15	11	15	12	17	17	****	23	25
8	12	14	15	13	9	10	10	14	18	28	45	45	40	34	36	34	36	22	15	14	11	8	****	20	22
9	15	13	12	11	15	15	27	44	51	43	71	84	59	20	15	12	8	7	8	9	7	5	****	22	25
10	11	8	11	13	13	15	14	9	11	10	9	12	12	20	25	19	13	11	10	7	7	7	****	19	12
11	9	8	8	9	14	7	6	4	4	5	3	4	16	6	6	6	5	4	6	4	4	4	****	20	7
12	7	6	9	7	7	4	6	6	6	6	9	6	7	8	12	6	12	10	6	8	7	7	****	20	8
13	11	8	6	7	8	8	9	8	7	9	13	8	8	8	11	7	7	6	8	14	11	9	****	35	10
14	19	17	17	16	10	12	11	8	5	8	10	18	18	7	9	10	15	12	13	14	9	9	****	22	13
15	18	12	11	10	9	14	20	21	22	27	32	24	11	12	10	7	10	8	9	7	9	7	****	20	14
16	8	7	7	7	7	8	13	12	14	13	10	11	10	9	9	6	6	11	7	11	12	11	****	21	10
17	8	11	16	11	11	13	16	25	23	26	22	20	23	24	17	15	13	14	15	16	16	20	****	25	17
18	16	16	11	11	13	14	10	7	7	24	16	5	5	4	8	9	10	7	4	5	4	3	****	12	10
19	6	6	6	6	6	9	9	11	12	9	12	18	10	12	12	12	11	10	9	9	8	10	****	20	10
20	10	11	11	22	18	10	9	8	9	24	29	16	15	15	12	12	11	12	13	14	12	18	****	29	15
21	25	25	14	17	13	16	10	14	8	27	20	14	13	18	16	17	19	13	11	13	22	18	****	25	17
22	13	21	17	13	24	21	16	9	9	29	30	26	9	13	14	16	10	17	11	13	17	23	****	29	18
23	34	22	19	23	18	12	11	7	16	35	50	35	26	24	28	25	17	16	15	23	20	30	****	32	23
24	15	14	12	12	15	16	16	14	15	27	12	12	13	14	9	7	7	9	6	10	11	****	21	13	
25	9	7	8	17	11	8	10	9	8	6	5	7	5	9	6	6	6	8	7	7	6	9	****	21	8
26	8	8	6	8	6	7	7	9	13	11	9	8	7	5	6	8	9	8	11	14	13	13	****	23	10
27	11	9	9	7	9	10	9	9	9	14	14	11	7	10	10	13	14	17	10	11	11	11	****	27	11
28	18	14	17	10	9	14	10	11	8	13	33	14	12	17	22	19	24	17	16	15	14	17	****	33	16
29	13	9	11	15	15	10	7	9	11	14	15	19	19	17	15	19	15	14	13	13	13	13	****	27	14
30	12	13	9	8	5	5	6	5	5	7	10	10	19	11	8	9	9	11	10	9	13	17	****	33	11
31	15	37	29	18	48	31	20	21	16	15	12	10	9	8	8	9	11	8	8	15	15	11	****	26	17

MONTHLY STATISTICS:

GEOM		ARITH	-----PERCENTILE-----					-----RANGE-----					STD GEOM	PERCENT	NO. OF TIMES		
MEAN	MEDIAN	MEAN	50	90	95	98	99	1-HR		24-HR			DEVIATION	VALID DATA	1-HR	24-HR	
10	11	13	11	24	30	37	45	0	-	84	3	-	25	2	96	0	0

NOTES:

1. FLAGS FOR INVALID DATA :
  - \*\*\*\* : DAILY ZERO/SPAN CHECK
  - D : DYNAMIC CALIBRATION
  - T : TELEMETRY/DATALOGGR/ANALYZER FAULT
  - M : MAINTENANCE OR MACHINE SHUTDOWN
  - P : POWER FAILURE
2. BRACKETED READINGS EXCEED 1-HR OBJECTIVE 800 OR 24-HR OBJECTIVE 350

THE HONGKONG ELECTRIC COMPANY, LTD.  
AIR QUALITY DATA MONTHLY TIME SERIES REPORT

STATION : CHUNG HOM KOK ZONE SUBSTATION      MONTH: AUGUST      YEAR : 2009  
 POLLUTANT : NITROGEN DIOXIDE      UNIT : MICROGRAMS/CUBIC METER

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	12	12	8	9	10	8	9	11	17	31	28	20	26	28	28	47	61	85	60	62	77	40	****	23	31
2	26	14	34	30	45	13	26	20	20	18	25	30	45	54	47	36	47	39	30	46	37	34	****	34	33
3	22	12	8	0	0	0	5	5	6	8	4	7	6	10	9	7	5	2	5	5	2	2	****	8	6
4	2	0	0	1	3	1	1	1	2	1	2	2	2	1	4	4	6	6	7	6	7	5	****	10	3
5	3	1	3	1	0	1	4	8	10	8	9	6	8	8	12	14	13	15	19	9	2	5	****	10	7
6	5	4	9	8	6	7	10	15	10	11	10	11	12	10	8	10	10	14	25	13	27	28	****	35	13
7	44	31	31	45	27	24	39	26	33	44	44	32	42	30	23	27	20	14	20	17	22	23	****	22	30
8	12	17	21	15	10	12	14	19	21	32	49	42	37	32	46	52	62	49	30	21	12	9	****	16	27
9	15	12	11	10	14	16	29	39	43	34	54	62	51	27	31	22	19	29	29	31	15	17	****	18	27
10	9	3	9	9	9	19	21	16	16	13	12	12	17	36	36	27	22	34	27	15	8	9	****	12	17
11	6	8	9	9	21	8	7	12	12	15	15	23	42	20	19	18	19	14	14	17	8	13	****	18	15
12	11	6	14	6	2	2	7	15	20	9	21	13	6	19	18	18	25	26	13	22	12	13	****	18	14
13	9	7	13	7	3	7	16	14	10	15	22	12	20	10	14	17	14	19	23	23	27	23	****	42	16
14	23	31	24	20	11	16	16	17	9	10	13	21	18	9	6	10	15	17	24	22	18	17	****	23	17
15	23	11	12	10	6	16	20	16	18	20	22	18	12	14	11	10	13	16	24	26	24	19	****	21	16
16	12	8	9	8	10	13	16	13	14	14	13	16	15	12	14	12	15	16	19	22	24	19	****	18	14
17	12	14	14	9	9	12	18	17	16	23	20	19	18	23	14	13	18	19	25	23	15	21	****	24	17
18	16	15	9	13	15	15	9	11	17	24	17	8	8	9	11	9	15	14	16	15	15	11	****	9	13
19	6	6	9	8	8	9	11	13	14	12	10	15	11	9	9	10	10	10	12	14	10	17	****	16	11
20	13	8	9	20	22	14	11	11	12	17	19	13	11	11	10	13	16	15	21	19	12	16	****	18	14
21	20	18	8	18	13	15	9	9	4	13	15	14	14	20	17	23	23	19	20	20	19	14	****	15	16
22	11	22	22	17	27	25	16	15	15	20	21	15	11	20	21	23	15	24	27	29	24	24	****	21	20
23	26	23	19	23	16	13	12	12	20	26	30	31	29	31	35	34	35	31	24	27	28	35	****	10	25
24	8	9	4	3	3	4	5	17	28	34	15	16	12	18	15	14	17	14	12	13	18	9	****	6	13
25	5	4	5	4	5	5	6	7	6	7	7	5	9	8	9	9	10	11	10	11	11	11	****	9	7
26	6	5	2	2	2	4	10	13	12	10	8	7	3	9	8	11	12	18	27	24	23	20	****	11	11
27	7	2	4	1	3	5	3	10	12	12	11	9	6	11	11	11	13	23	22	17	11	12	****	18	10
28	21	13	18	10	11	17	12	10	6	11	25	16	16	22	22	30	39	31	18	20	20	26	****	17	19
29	10	7	10	15	12	10	11	14	23	26	25	24	18	16	11	12	16	28	25	12	12	5	****	6	15
30	3	4	4	2	3	0	3	7	9	11	17	20	16	13	13	14	12	18	26	12	5	29	****	25	12
31	11	65	28	21	72	35	10	23	15	10	15	13	12	11	12	11	15	15	19	16	9	7	****	6	20

MONTHLY STATISTICS:

GEOM		ARITH	-----PERCENTILE-----					-----RANGE-----					STD GEOM	PERCENT	NO. OF TIMES		
MEAN	MEDIAN	MEAN	50	90	95	98	99	1-HR			24-HR	DEVIATION	VALID DATA	1-HR	24-HR		
13	14	16	14	30	38	48	61	0	-	85	3	-	33	2	96	0	0

NOTES:

1. FLAGS FOR INVALID DATA :
  - \*\*\*\* : DAILY ZERO/SPAN CHECK
  - D : DYNAMIC CALIBRATION
  - T : TELEMETRY/DATALOGGR/ANALYZER FAULT
  - M : MAINTENANCE OR MACHINE SHUTDOWN
  - P : POWER FAILURE
2. BRACKETED READINGS EXCEED 1-HR OBJECTIVE 300 OR 24-HR OBJECTIVE 150

THE HONGKONG ELECTRIC COMPANY, LTD.  
AIR QUALITY DATA MONTHLY TIME SERIES REPORT

STATION : CHUNG HOM KOK ZONE SUBSTATION      MONTH: SEPTEMBER      YEAR : 2009  
 POLLUTANT : SULPHUR DIOXIDE      UNIT : MICROGRAMS/CUBIC METER

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	11	10	9	9	9	10	11	10	9	8	10	12	7	6	6	8	9	7	7	9	8	7	****	26	9
2	10	12	8	7	6	7	9	7	8	7	8	7	6	5	4	6	6	6	4	4	5	3	****	21	7
3	7	7	5	5	6	8	9	8	8	8	9	7	6	5	6	7	6	7	5	7	6	7	****	27	8
4	11	9	9	8	9	8	8	12	9	9	8	9	10	13	17	13	15	10	11	11	11	13	****	29	11
5	11	10	8	8	8	7	8	6	7	7	6	6	6	9	8	8	13	13	9	8	5	8	****	25	9
6	8	7	6	8	8	7	5	6	7	4	4	4	5	5	6	6	6	7	9	8	6	6	****	25	7
7	8	7	9	7	6	7	7	7	7	5	5	6	7	6	6	6	7	11	10	11	9	14	****	30	9
8	12	10	11	9	10	8	10	11	8	8	8	9	8	7	9	9	10	9	13	11	9	11	****	34	11
9	11	10	10	7	8	8	9	8	6	6	5	6	5	5	6	8	8	7	6	6	8	6	****	45	9
10	10	13	11	10	9	9	12	10	10	10	10	11	9	9	10	9	7	7	6	7	7	7	****	65	12
11	11	10	8	7	7	7	8	6	6	5	6	8	6	6	6	6	7	5	5	6	6	7	****	75	10
12	10	8	8	6	6	6	7	7	6	6	6	8	6	6	6	6	9	7	9	9	11	11	****	115	12
13	19	15	13	11	9	8	10	9	9	11	18	29	28	31	28	30	36	30	23	19	16	12	****	194	26
14	26	15	10	7	6	6	4	1	1	0	0	0	0	0	0	4	6	5	3	0	0	0	****	10	5
15	5	5	3	3	2	3	3	1	1	1	1	2	1	1	1	<-----D----->							****	0	2
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	3	****	0	0
17	0	0	0	0	0	0	0	0	0	0	0	1	6	7	1	0	0	0	1	5	11	3	****	11	2
18	6	0	0	1	6	0	0	0	10	33	63	75	189	249	285	17	2	7	10	7	2	0	****	8	42
19	1	0	0	8	5	6	11	9	42	61	43	116	112	37	12	1	2	0	1	7	0	4	****	8	21
20	12	1	4	1	6	3	4	1	8	12	9	2	18	23	0	0	2	0	0	0	0	0	****	0	5
21	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	3	11	3	1	0	0	0	****	0	1
22	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	****	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	****	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	****	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	****	0	0
26	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	1	1	0	0	0	****	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	****	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	****	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	****	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	****	0	0

MONTHLY STATISTICS:

GEOM	ARITH	<-----PERCENTILE----->							<-----RANGE----->				STD GEOM	PERCENT	NO. OF TIMES ABOVE OBJECTIVE	
MEAN	MEDIAN	MEAN	50	90	95	98	99	1-HR	24-HR	24-HR	DEVIATION	VALID DATA	1-HR	24-HR		
7	5	7	5	11	20	43	94	0	-	285	3	95	0	0		

- NOTES:
1. FLAGS FOR INVALID DATA :
    - \*\*\*\* : DAILY ZERO/SPAN CHECK
    - D : DYNAMIC CALIBRATION
    - T : TELEMETRY/DATALOGGR/ANALYZER FAULT
    - M : MAINTENANCE OR MACHINE SHUTDOWN
    - P : POWER FAILURE
  2. BRACKETED READINGS EXCEED 1-HR OBJECTIVE 800 OR 24-HR OBJECTIVE 350



THE HONGKONG ELECTRIC COMPANY, LTD.  
AIR QUALITY DATA MONTHLY TIME SERIES REPORT

STATION : VICTORIA ROAD SUBSTATION  
POLLUTANT : SULPHUR DIOXIDE

MONTH: JULY

YEAR : 2009  
UNIT : MICROGRAMS/CUBIC METER

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	
1	18	15	13	10	9	13	13	9	15	23	22	13	12	18	15	24	16	18	22	23	20	17	****	40	17	
2	27	21	21	18	19	15	17	12	15	16	13	14	11	13	15	18	20	15	18	15	11	12	****	43	17	
3	23	19	17	14	15	19	18	17	21	19	19	<-----M----->					18	19	18	15	****	35				
4	18	15	13	13	17	14	13	15	14	10	9	7	8	10	8	8	9	9	10	9	9	9	****	41	12	
5	14	13	15	8	9	10	10	9	8	8	7	8	9	8	7	7	7	8	7	7	6	5	****	45	10	
6	17	10	9	6	6	6	4	4	3	2	1	0	0	0	0	0	1	1	2	3	2	1	****	35	5	
7	9	6	6	4	2	3	0	1	0	0	3	8	1	0	2	7	5	6	4	3	1	3	****	56	6	
8	19	7	2	1	1	0	0	1	2	2	14	16	4	0	1	1	0	1	0	0	0	0	****	33	5	
9	5	0	0	0	0	0	0	0	0	0	<-----M----->					21	30	25	20	17	16	****	53			
10	23	17	15	17	17	21	19	24	32	53	67	37	47	27	30	40	51	33	28	23	22	23	****	57	31	
11	21	15	13	10	8	5	5	4	3	3	2	2	1	1	0	0	0	0	0	0	0	0	****	0	4	
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	****	16	1	
13	0	0	0	0	2	0	0	14	105	46	4	5	3	2	0	6	1	2	0	0	0	0	****	22	9	
14	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	****	15	1	
15	0	0	0	0	0	0	0	0	0	0	<-----D----->					0	0	0	0	0	0	0	****	1	0	
16	0	0	0	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	3	****	4	1	
17	3	3	3	3	3	3	3	3	3	8	3	19	32	32	11	9	8	10	8	7	9	10	****	10	9	
18	15	10	20	21	16	20	23	34	61	68	68	64	74	77	28	15	3	6	7	4	8	12	****	6	29	
19	13	8	5	15	10	4	9	10	3	3	3	3	4	4	8	4	4	3	3	2	2	3	****	3	5	
20	2	2	1	4	7	5	7	8	6	4	3	3	5	3	3	3	2	3	3	3	1	3	****	3	4	
21	3	3	2	3	4	3	3	3	3	3	4	3	3	3	3	3	3	3	3	3	3	3	****	4	3	
22	6	11	6	6	3	4	6	11	6	9	11	8	9	6	3	5	14	7	4	4	3	5	****	6	7	
23	4	5	9	10	10	11	10	4	4	7	16	26	5	3	4	6	10	10	10	9	12	12	****	9	9	
24	4	5	8	5	5	4	4	5	19	6	3	9	26	9	13	55	7	52	5	3	8	8	****	13	12	
25	4	7	9	7	4	4	5	10	3	T	30	33	19	32	11	13	17	8	6	8	3	3	****	10	11	
26	6	10	3	4	3	3	6	6	4	2	4	8	6	3	4	6	6	6	6	11	12	6	****	9	6	
27	11	9	7	4	2	2	4	7	15	16	16	10	8	10	6	6	5	7	8	11	15	9	****	9	8	
28	7	6	11	14	8	5	5	3	4	6	4	6	9	4	5	5	3	4	4	6	3	1	****	2	6	
29	2	1	1	3	2	4	3	5	4	4	2	2	4	2	4	4	2	2	3	3	3	3	****	5	3	
30	3	2	2	2	2	2	2	2	1	1	1	1	1	1	1	0	0	0	0	0	0	0	****	1	1	
31	0	0	0	0	0	0	1	1	1	1	1	1	1	2	2	2	2	2	2	3	3	3	****	6	1	

MONTHLY STATISTICS:

GEOM		ARITH	-----PERCENTILE-----					-----RANGE-----					STD GEOM	PERCENT	NO. OF TIMES		
MEAN	MEDIAN	MEAN	50	90	95	98	99	1-HR			24-HR		DEVIATION	VALID DATA	1-HR	24-HR	
5	4	8	4	19	30	52	63	0	-	105	0	-	31	4	93	0	0

NOTES:

1. FLAGS FOR INVALID DATA :
  - \*\*\*\* : DAILY ZERO/SPAN CHECK
  - D : DYNAMIC CALIBRATION
  - T : TELEMETRY/DATALOGGR/ANALYZER FAULT
  - M : MAINTENANCE OR MACHINE SHUTDOWN
  - P : POWER FAILURE
2. BRACKETED READINGS EXCEED 1-HR OBJECTIVE 800 OR 24-HR OBJECTIVE 350

THE HONGKONG ELECTRIC COMPANY, LTD.  
AIR QUALITY DATA MONTHLY TIME SERIES REPORT

STATION : VICTORIA ROAD SUBSTATION  
POLLUTANT : NITROGEN DIOXIDE

MONTH: JULY

YEAR : 2009  
UNIT : MICROGRAMS/CUBIC METER

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	11	14	7	8	9	9	13	9	11	15	11	4	4	4	6	13	6	11	13	17	11	9	****	9	10
2	8	12	5	3	4	10	7	9	13	12	9	8	8	7	8	12	13	13	17	15	15	14	****	16	10
3	11	7	9	6	14	19	14	15	18	13	11	M	12	16	10	12	17	24	22	25	27	23	****	14	15
4	11	6	5	5	17	10	17	24	18	30	29	30	31	23	18	17	15	22	21	21	25	30	****	23	20
5	16	15	32	15	9	10	15	14	11	18	15	24	37	20	18	18	16	23	25	32	17	19	****	43	20
6	28	7	18	20	11	13	20	23	24	19	16	10	9	8	7	8	13	23	38	42	36	22	****	25	19
7	23	17	18	14	14	18	20	26	24	17	17	18	9	7	12	15	14	12	16	20	26	30	****	34	18
8	25	16	6	6	12	22	25	22	12	8	18	20	10	5	11	11	9	18	14	14	25	23	****	26	16
9	17	16	9	11	9	12	18	20	21	18	19	17	15	18	21	19	25	19	23	22	22	27	****	19	18
10	17	14	14	16	16	24	22	25	25	31	35	55	74	48	52	53	49	73	86	39	40	37	****	17	37
11	7	4	3	2	2	4	8	13	12	13	13	12	11	11	9	8	6	9	8	10	9	6	****	5	8
12	3	2	2	3	2	4	10	12	14	16	14	13	13	9	10	8	9	11	19	21	18	15	****	15	11
13	11	2	1	6	30	21	26	30	40	32	22	22	20	19	19	22	16	24	18	17	23	24	****	24	20
14	18	15	9	8	7	7	22	23	24	22	13	16	9	12	15	8	14	13	21	24	24	21	****	14	16
15	6	3	3	1	3	9	13	13	15	11	12	9	7	8	8	8	10	11	8	7	8	8	****	13	8
16	5	2	1	0	1	5	11	13	15	16	17	10	12	11	11	12	10	7	8	11	11	8	****	10	9
17	6	2	1	1	3	7	12	12	11	14	6	15	25	19	10	10	12	15	19	22	28	21	****	24	13
18	31	24	46	35	27	31	36	51	63	67	73	80	85	94	58	60	27	49	58	41	34	36	****	21	49
19	30	15	8	21	12	2	12	12	4	6	12	21	19	21	24	20	21	22	11	9	8	8	****	8	14
20	3	3	3	13	23	21	27	30	28	22	16	12	16	13	13	15	16	17	21	21	18	17	****	20	17
21	17	8	4	5	11	6	14	22	25	15	11	8	9	6	6	10	15	20	23	19	19	15	****	23	14
22	26	25	13	15	8	12	19	22	14	15	16	10	11	9	16	11	20	16	29	28	21	25	****	23	17
23	19	16	20	18	16	21	28	25	32	25	17	21	11	7	9	14	19	21	21	27	29	27	****	19	20
24	12	12	15	8	9	11	16	20	25	13	12	15	20	13	15	23	15	28	16	19	18	17	****	30	17
25	16	18	22	14	9	11	12	18	12	T	25	24	18	22	15	15	16	21	21	25	25	23	****	25	19
26	21	19	16	17	13	14	25	22	16	9	13	15	15	6	13	23	19	29	32	40	34	26	****	22	20
27	25	14	7	4	2	4	20	30	44	33	23	14	17	17	13	11	14	23	30	38	40	31	****	29	21
28	20	14	18	22	12	18	19	19	22	17	15	19	19	13	13	12	12	11	22	31	29	20	****	26	18
29	16	9	4	6	4	12	19	27	26	22	18	13	16	12	13	15	18	17	21	21	14	15	****	15	15
30	5	1	0	1	0	1	10	13	14	16	16	12	11	8	11	7	13	11	14	10	12	6	****	8	9
31	2	2	0	0	0	0	6	12	21	21	15	15	11	11	11	9	5	6	6	7	7	4	****	17	8

MONTHLY STATISTICS:

GEOM	ARITH	-----PERCENTILE-----					-----RANGE-----				STD GEOM	PERCENT	NO. OF TIMES	
MEAN	MEDIAN	MEAN	50	90	95	98	99	1-HR		24-HR	DEVIATION	VALID DATA	1-HR	24-HR
13	15	17	15	28	36	52	65	0	-	94	2	96	0	0

NOTES:

1. FLAGS FOR INVALID DATA :
  - \*\*\*\* : DAILY ZERO/SPAN CHECK
  - D : DYNAMIC CALIBRATION
  - T : TELEMETRY/DATALOGGR/ANALYZER FAULT
  - M : MAINTENANCE OR MACHINE SHUTDOWN
  - P : POWER FAILURE
2. BRACKETED READINGS EXCEED 1-HR OBJECTIVE 300 OR 24-HR OBJECTIVE 150





THE HONGKONG ELECTRIC COMPANY, LTD.  
AIR QUALITY DATA MONTHLY TIME SERIES REPORT

STATION : VICTORIA ROAD SUBSTATION  
POLLUTANT : SULPHUR DIOXIDE

MONTH: SEPTEMBER

YEAR : 2009  
UNIT : MICROGRAMS/CUBIC METER

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	5	3	2	3	3	5	3	5	8	5	6	5	3	2	0	1	2	2	2	3	2	2	****	4	3
2	3	3	3	2	0	0	3	4	5	3	3	3	3	3	3	3	3	3	3	3	3	3	****	4	3
3	3	3	3	3	3	3	3	5	8	6	3	3	3	1	2	3	3	3	2	2	1	3	****	4	3
4	3	3	3	1	1	3	3	3	3	9	27	30	18	22	21	28	22	5	6	6	5	7	****	4	10
5	3	3	3	2	1	3	3	2	3	3	3	3	3	4	5	4	8	10	6	4	4	6	****	6	4
6	4	3	3	3	4	3	3	3	3	3	3	2	0	1	3	3	3	3	4	5	3	3	****	3	3
7	3	3	4	2	1	3	3	3	3	3	1	2	2	3	3	3	3	2	6	5	6	6	****	4	3
8	2	3	3	4	5	7	8	5	4	3	3	3	3	3	3	3	3	3	8	5	5	3	****	6	4
9	3	3	3	3	3	2	2	2	3	1	0	0	0	0	1	3	3	3	3	3	5	3	****	3	2
10	3	3	2	3	2	3	3	3	3	3	3	3	3	3	3	3	0	0	0	0	0	0	****	2	2
11	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	****	1	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	****	9	1
13	10	2	3	6	14	24	21	29	33	52	54	65	77	81	107	127	124	80	41	10	12	9	****	4	43
14	3	3	17	15	25	6	5	3	7	6	5	5	3	3	2	1	0	0	0	0	0	0	****	1	5
15	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	3	5	2	2	4	4	5	****	2	1
16	0	2	0	0	2	2	1	2	2	3	0	3	2	1	3	7	5	5	5	4	3	7	****	4	3
17	3	1	0	2	1	5	3	3	5	8	9	20	18	23	17	12	9	6	4	6	18	12	****	10	8
18	5	6	13	14	14	13	11	13	25	36	64	119	135	235	227	34	10	8	7	9	11	9	****	12	45
19	10	6	5	4	4	7	5	15	34	43	44	75	71	19	12	13	10	8	7	5	13	6	****	10	19
20	9	9	16	26	8	13	26	20	36	20	10	15	11	16	18	16	12	3	3	4	3	3	****	4	13
21	5	2	2	1	1	3	3	1	3	25	34	30	35	22	33	25	19	15	16	18	15	34	****	45	17
22	37	11	7	5	3	3	3	3	5	6	5	8	6	10	7	19	14	9	5	7	5	3	****	8	8
23	4	3	3	3	3	3	4	9	9	6	5	4	3	2	1	1	3	3	3	3	3	3	****	3	3
24	0	1	2	0	2	3	3	4	5	5	6	4	3	3	4	4	3	0	2	3	1	3	****	4	3
25	1	1	2	1	1	1	3	3	3	3	3	3	3	3	3	3	2	5	3	3	3	2	****	3	2
26	3	3	3	3	5	5	6	5	13	20	16	12	7	6	5	4	7	8	6	3	3	3	****	5	6
27	3	3	3	3	7	9	8	7	9	7	7	9	8	7	7	7	7	8	7	8	7	3	****	10	7
28	8	8	8	9	7	8	8	8	7	6	5	4	4	4	4	3	2	1	0	1	3	3	****	2	5
29	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	****	4	0
30	3	0	0	0	0	0	0	1	3	3	3	2	0	0	0	0	1	0	0	0	3	0	****	3	1

MONTHLY STATISTICS:

GEOM	ARITH	<-----PERCENTILE----->					<-----RANGE----->				STD GEOM	PERCENT	NO. OF TIMES	
MEAN	MEDIAN	MEAN	50	90	95	98	99	1-HR	24-HR	24-HR	DEVIATION	VALID DATA	1-HR	24-HR
4	3	8	3	15	27	59	94	0	-	235	3	96	0	0

- NOTES: 1. FLAGS FOR INVALID DATA :  
 \*\*\*\* : DAILY ZERO/SPAN CHECK  
 D : DYNAMIC CALIBRATION  
 T : TELEMETRY/DATALOGGR/ANALYZER FAULT  
 M : MAINTENANCE OR MACHINE SHUTDOWN  
 P : POWER FAILURE
2. BRACKETED READINGS EXCEED 1-HR OBJECTIVE 800 OR 24-HR OBJECTIVE 350



THE HONGKONG ELECTRIC COMPANY, LTD.  
AIR QUALITY DATA MONTHLY TIME SERIES REPORT

STATION : QUEEN MARY HOSPITAL  
POLLUTANT : SULPHUR DIOXIDE

MONTH: JULY

YEAR : 2009  
UNIT : MICROGRAMS/CUBIC METER

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	5	7	6	13	9	10	8	20	14	7	4	1	0	1	0	1	6	1	3	4	9	3	****	3	6
2	12	10	6	7	6	10	7	6	8	9	9	6	3	4	0	2	0	0	1	1	10	4	****	6	5
3	6	30	40	39	36	19	12	27	20	9	8	8	6	12	5	1	3	5	15	6	8	9	****	6	14
4	5	5	3	4	7	6	4	7	6	3	8	5	6	8	4	3	3	5	5	5	4	4	****	4	5
5	2	3	43	22	3	3	3	4	3	3	3	2	3	3	3	4	3	4	2	3	2	2	****	21	6
6	8	3	3	3	4	4	3	3	2	1	0	0	0	0	0	0	0	0	0	6	5	3	****	6	2
7	9	7	8	10	6	8	8	8	6	3	1	5	2	0	0	7	1	1	1	4	1	4	****	12	5
8	13	11	8	6	8	12	13	13	8	9	13	38	0	1	2	1	5	3	0	0	0	0	****	1	7
9	4	6	4	4	3	5	6	13	6	1	0	3	1	5	1	3	0	0	0	0	2	4	****	4	3
10	2	4	4	6	5	7	8	18	20	10	8	31	37	24	21	21	19	18	9	15	3	8	****	11	13
11	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	****	0	0
12	0	0	0	1	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	****	0	0
13	0	0	0	0	1	1	10	18	78	45	12	7	12	19	1	1	0	2	6	0	0	0	****	2	9
14	4	4	3	6	16	8	7	3	6	6	5	3	0	0	0	0	0	0	0	0	0	T	****	0	3
15	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	1	0	****	1	0
16	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	****	1	1
17	1	1	1	1	2	3	2	2	3	12	3	8	10	5	3	0	0	3	1	1	3	6	****	6	3
18	12	13	18	19	16	18	21	33	59	62	68	62	76	66	21	9	0	4	5	3	6	8	****	3	26
19	11	8	5	3	3	3	6	7	3	4	2	3	2	3	6	2	2	1	1	0	1	1	****	1	3
20	1	1	1	3	5	4	6	7	4	2	1	1	2	0	0	0	0	0	0	1	1	2	****	2	2
21	2	2	2	3	4	2	2	3	3	1	3	1	0	0	0	0	0	0	0	1	1	2	****	3	2
22	6	7	4	6	3	4	6	6	4	T	4	3	7	1	0	2	<-- T-->	3	3	2	5	****	5	4	
23	4	6	9	8	10	9	8	5	6	11	T	28	10	24	5	2	8	7	7	4	8	7	****	7	9
24	4	4	6	5	11	8	8	11	11	3	8	8	17	10	5	1	32	12	8	3	3	4	****	7	8
25	4	4	6	5	4	10	4	7	5	5	T	3	11	18	6	3	6	4	4	4	3	4	****	9	6
26	6	11	11	11	6	5	7	6	7	8	4	18	4	4	15	33	8	3	5	9	8	6	****	7	9
27	9	7	5	7	4	4	10	7	3	66	22	8	7	9	5	4	4	6	10	10	13	6	****	6	10
28	6	6	9	12	6	5	3	3	3	8	5	5	6	3	4	3	2	2	3	5	3	2	****	2	5
29	3	3	3	5	3	4	6	6	3	3	2	1	2	2	2	2	1	0	0	2	2	2	****	2	3
30	2	2	1	2	1	2	2	2	1	0	0	0	1	0	0	0	0	0	0	0	1	0	****	0	1
31	0	1	1	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1	1	0	****	1	1

MONTHLY STATISTICS:

GEOM	ARITH	-----PERCENTILE-----					-----RANGE-----				STD GEOM	PERCENT	NO. OF TIMES	
MEAN	MEDIAN	50	90	95	98	99	1-HR		24-HR	DEVIATION	VALID DATA	1-HR	24-HR	
3	3	3	12	19	35	52	0	-	78	5	95	0	0	

NOTES:

1. FLAGS FOR INVALID DATA :
  - \*\*\*\* : DAILY ZERO/SPAN CHECK
  - D : DYNAMIC CALIBRATION
  - T : TELEMETRY/DATALOGGR/ANALYZER FAULT
  - M : MAINTENANCE OR MACHINE SHUTDOWN
  - P : POWER FAILURE
2. BRACKETED READINGS EXCEED 1-HR OBJECTIVE 800 OR 24-HR OBJECTIVE 350

THE HONGKONG ELECTRIC COMPANY, LTD.  
AIR QUALITY DATA MONTHLY TIME SERIES REPORT

STATION : QUEEN MARY HOSPITAL  
POLLUTANT : NITROGEN DIOXIDE

MONTH: JULY

YEAR : 2009  
UNIT : MICROGRAMS/CUBIC METER

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	8	9	6	10	7	9	7	15	11	7	7	8	7	7	10	11	14	15	14	16	17	11	****	9	10
2	13	10	4	4	6	11	9	12	14	14	15	11	11	13	13	14	12	14	12	14	18	13	****	12	12
3	7	19	19	23	18	11	9	16	15	10	11	13	13	19	12	12	13	17	29	22	23	21	****	11	16
4	9	6	4	4	11	7	9	14	13	14	17	9	14	16	13	12	13	21	18	17	17	12	****	14	12
5	11	6	29	6	2	4	3	4	2	5	8	5	11	3	2	4	2	9	1	6	2	4	****	32	7
6	21	4	4	5	5	3	1	2	5	11	8	9	8	7	8	9	12	10	19	27	21	14	****	13	10
7	20	12	11	16	10	11	12	16	20	17	15	19	14	11	10	21	19	22	27	20	16	18	****	21	16
8	16	12	7	4	8	13	15	14	10	13	16	24	11	11	13	12	20	24	23	21	16	11	****	15	14
9	16	14	6	6	6	8	12	17	13	14	17	23	20	28	23	20	20	22	19	19	19	21	****	11	16
10	10	13	11	12	10	20	20	23	28	35	41	50	61	59	53	57	64	65	46	61	28	24	****	16	35
11	11	8	9	5	7	7	9	12	15	16	16	15	15	15	11	12	6	4	4	4	3	5	****	4	9
12	3	2	2	4	2	3	4	4	5	6	5	5	5	5	7	4	4	6	7	7	11	9	****	8	5
13	6	2	2	5	16	8	23	25	36	33	26	24	27	32	21	24	23	36	40	20	15	13	****	14	20
14	15	15	10	12	20	12	16	12	17	21	19	17	13	20	27	22	28	17	26	13	15	T	****	7	17
15	7	4	4	3	6	9	10	6	6	6	9	8	6	6	7	6	6	8	7	7	6	3	****	4	6
16	2	2	3	3	3	3	4	4	4	4	4	4	4	4	5	5	3	3	5	4	3	3	****	4	4
17	3	4	2	2	4	5	6	8	12	23	15	17	20	15	13	13	15	23	24	19	17	15	****	24	13
18	28	36	47	27	24	33	34	53	71	79	81	74	81	83	69	50	21	45	52	35	35	33	****	21	48
19	28	17	11	7	16	28	28	11	5	8	6	8	8	6	10	6	6	5	4	3	6	3	****	3	10
20	3	3	3	7	17	12	10	12	8	6	5	5	7	6	8	8	8	6	7	6	4	5	****	5	7
21	5	3	4	4	7	4	4	5	7	11	20	13	11	10	12	12	12	12	11	9	7	5	****	8	9
22	15	17	9	14	7	7	9	9	15	T	16	12	15	10	7	11	<-- T -->	11	15	12	16	****	12	12	
23	13	12	16	14	13	13	17	15	16	15	T	20	13	18	14	12	18	20	20	20	19	19	****	14	16
24	8	7	10	6	14	11	15	18	19	12	11	12	15	13	12	11	22	18	18	15	14	12	****	15	13
25	13	9	13	9	8	14	8	13	12	13	T	10	11	16	13	10	13	17	17	17	17	16	****	21	13
26	12	17	12	14	8	8	14	12	10	11	13	17	12	10	19	21	12	16	18	28	21	17	****	17	15
27	18	11	7	10	7	6	15	11	14	31	27	16	16	19	15	16	16	17	18	20	26	13	****	14	16
28	14	11	14	17	10	10	10	10	17	19	12	15	12	9	15	13	15	18	21	14	10	7	****	7	13
29	8	7	5	6	5	8	12	11	6	9	8	5	5	7	6	5	5	8	10	6	6	7	****	6	7
30	4	3	2	3	3	4	5	6	5	5	5	5	4	4	4	4	5	5	6	5	5	2	****	4	4
31	2	5	4	2	1	1	2	6	6	5	5	5	3	2	2	4	7	8	11	13	6	6	****	7	5

MONTHLY STATISTICS:

GEOM		ARITH	<-----PERCENTILE----->					<-----RANGE----->			STD GEOM	PERCENT	NO. OF TIMES				
MEAN	MEDIAN	MEAN	50	90	95	98	99	1-HR		24-HR		DEVIATION	VALID DATA	1-HR	24-HR		
10	11	13	11	23	30	53	65	1	-	83	4	-	48	2	95	0	0

NOTES:

1. FLAGS FOR INVALID DATA :
  - \*\*\*\* : DAILY ZERO/SPAN CHECK
  - D : DYNAMIC CALIBRATION
  - T : TELEMETRY/DATALOGGR/ANALYZER FAULT
  - M : MAINTENANCE OR MACHINE SHUTDOWN
  - P : POWER FAILURE
2. BRACKETED READINGS EXCEED 1-HR OBJECTIVE 300 OR 24-HR OBJECTIVE 150

THE HONGKONG ELECTRIC COMPANY, LTD.  
AIR QUALITY DATA MONTHLY TIME SERIES REPORT

STATION : QUEEN MARY HOSPITAL  
POLLUTANT : SULPHUR DIOXIDE

MONTH: AUGUST

YEAR : 2009  
UNIT : MICROGRAMS/CUBIC METER

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	2	1	1	2	1	1	2	4	T	21	15	20	23	15	18	28	45	63	68	64	39	19	****	8	21
2	6	7	15	35	34	40	31	66	44	31	29	58	46	51	46	39	41	47	32	28	26	31	****	31	35
3	27	10	8	7	6	6	7	4	4	5	5	13	10	5	5	3	1	0	1	2	2	1	****	2	6
4	1	0	0	1	1	1	1	1	1	1	1	0	0	1	0	0	0	0	0	0	1	1	****	1	1
5	1	1	2	1	1	1	1	2	1	5	6	3	4	2	4	4	3	4	5	1	1	1	****	3	2
6	4	4	5	7	5	11	3	3	3	3	3	3	3	6	12	44	7	10	40	16	5	3	****	3	9
7	5	4	21	26	70	8	19	5	21	40	43	32	43	26	9	12	9	6	5	3	4	3	****	4	18
8	4	6	5	7	6	6	9	21	30	61	88	82	59	48	30	36	20	34	19	9	3	5	****	5	26
9	6	8	13	11	13	32	46	52	50	53	62	74	70	29	8	9	4	6	3	2	3	2	****	7	25
10	3	2	2	1	1	1	5	8	16	14	9	6	15	30	23	19	14	7	5	5	3	4	****	4	9
11	6	6	4	11	8	3	3	1	1	15	13	3	6	12	19	7	4	2	2	1	1	1	****	3	6
12	4	7	9	4	2	4	11	2	4	3	4	6	3	3	66	48	9	7	5	2	4	5	****	5	9
13	2	5	8	5	4	6	5	10	12	4	11	7	6	6	4	7	6	4	15	21	20	6	****	2	8
14	1	2	4	6	7	3	3	2	11	8	3	5	13	12	7	2	5	13	8	8	4	4	****	5	6
15	7	5	4	4	3	6	5	4	4	30	11	13	21	12	6	4	4	6	4	8	3	7	****	5	8
16	4	4	3	4	2	7	16	14	6	7	7	5	7	42	14	6	6	13	6	17	16	9	****	18	10
17	20	12	9	11	11	11	23	27	16	7	7	8	9	14	17	10	17	17	11	19	29	16	****	11	14
18	9	10	6	5	6	9	17	48	43	43	31	30	18	7	10	21	24	6	4	2	2	2	****	3	16
19	2	5	7	6	5	3	6	11	19	11	25	21	26	22	21	15	20	14	12	13	15	11	****	8	13
20	11	11	11	12	7	4	4	6	10	10	19	13	17	23	6	4	5	4	6	3	3	4	****	5	9
21	7	4	5	7	4	3	3	6	7	7	8	14	12	23	13	13	17	9	6	4	6	10	****	5	8
22	4	5	11	5	4	2	3	3	6	6	16	20	24	11	8	19	14	10	5	6	5	6	****	12	9
23	9	8	7	5	2	3	4	12	30	44	24	44	35	32	26	18	16	8	8	11	17	15	****	26	18
24	22	20	23	17	25	17	26	40	43	76	58	61	36	28	11	4	3	3	3	3	6	7	****	5	23
25	4	3	4	11	6	5	5	5	3	2	2	2	2	2	2	1	1	2	1	1	2	1	****	3	3
26	1	2	1	1	1	2	2	3	3	9	19	6	3	1	2	5	4	2	3	6	9	9	****	5	4
27	4	5	5	3	4	9	7	7	44	60	23	7	12	13	13	19	16	11	8	4	8	5	****	8	13
28	9	6	6	8	14	7	3	4	5	11	18	14	17	20	26	22	16	22	12	8	11	9	****	12	12
29	4	5	3	11	5	5	7	28	33	39	35	27	36	25	23	29	33	16	10	9	10	11	****	9	18
30	6	5	5	11	30	6	21	13	10	11	22	59	28	25	5	4	8	9	8	7	21	51	****	20	17
31	55	44	42	49	38	34	39	42	23	17	7	8	17	23	14	5	4	4	2	4	2	3	****	5	21

MONTHLY STATISTICS:

GEOM		ARITH	-----PERCENTILE-----					-----RANGE-----			STD GEOM	PERCENT	NO. OF TIMES				
MEAN	MEDIAN	MEAN	50	90	95	98	99	1-HR		24-HR	DEVIATION	VALID DATA	1-HR	24-HR			
7	7	13	7	32	44	60	66	0	-	88	1	-	35	3	96	0	0

NOTES:

1. FLAGS FOR INVALID DATA :
  - \*\*\*\* : DAILY ZERO/SPAN CHECK
  - D : DYNAMIC CALIBRATION
  - T : TELEMETRY/DATALOGGR/ANALYZER FAULT
  - M : MAINTENANCE OR MACHINE SHUTDOWN
  - P : POWER FAILURE
2. BRACKETED READINGS EXCEED 1-HR OBJECTIVE 800 OR 24-HR OBJECTIVE 350

THE HONGKONG ELECTRIC COMPANY, LTD.  
AIR QUALITY DATA MONTHLY TIME SERIES REPORT

STATION : QUEEN MARY HOSPITAL  
POLLUTANT : NITROGEN DIOXIDE

MONTH: AUGUST

YEAR : 2009  
UNIT : MICROGRAMS/CUBIC METER

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	8	6	3	3	5	8	17	19	T	33	32	29	26	28	38	50	59	68	100	61	45	16	****	9	30
2	8	23	59	46	44	43	52	58	52	39	35	57	51	47	47	35	43	53	41	56	44	35	****	40	44
3	32	1	0	0	0	0	3	8	11	12	12	9	10	7	4	5	7	13	19	14	8	7	****	10	8
4	5	1	0	0	0	0	2	6	12	12	12	13	7	7	4	2	1	0	2	0	1	1	****	3	4
5	1	0	1	0	0	0	2	3	3	7	8	7	5	1	3	7	7	7	7	1	3	4	****	12	4
6	8	7	10	10	6	20	6	9	7	4	3	4	6	10	13	24	17	24	42	26	10	12	****	21	13
7	21	8	24	22	34	3	19	7	26	44	39	41	50	32	16	16	13	9	21	12	12	13	****	20	22
8	12	8	8	9	6	10	20	22	27	46	66	64	45	37	28	45	36	72	35	26	10	11	****	22	29
9	18	19	28	18	25	27	30	31	31	33	41	50	46	29	6	11	7	9	10	7	12	7	****	13	22
10	4	3	0	1	0	0	10	15	16	23	21	25	39	44	47	19	7	27	6	39	20	42	****	32	19
11	21	15	13	19	15	4	9	4	27	47	49	40	51	61	60	39	26	24	29	23	1	4	****	5	26
12	10	13	10	1	0	8	12	5	19	11	13	13	4	15	29	44	20	11	10	7	10	5	****	10	12
13	4	9	17	11	5	10	10	14	26	13	22	21	21	17	12	11	13	12	34	18	31	9	****	3	15
14	0	0	2	10	11	2	16	9	13	37	9	10	14	20	15	4	10	19	20	18	10	19	****	19	12
15	17	11	6	8	6	11	11	8	7	19	8	12	23	16	9	9	10	13	19	22	13	18	****	12	13
16	9	8	3	5	2	13	16	9	3	4	4	3	4	17	9	4	9	12	12	26	23	10	****	24	10
17	28	14	4	4	6	6	13	17	14	12	5	8	5	13	14	8	19	28	16	30	30	9	****	10	14
18	4	3	1	2	6	15	15	32	39	40	35	35	23	9	8	11	15	9	6	4	4	0	****	3	14
19	2	3	7	5	2	2	12	15	19	21	22	18	19	12	13	8	12	8	8	13	15	18	****	11	11
20	10	10	9	12	4	1	2	5	13	15	17	14	12	15	8	6	9	13	18	8	8	5	****	8	10
21	10	4	7	12	3	2	2	4	5	9	13	16	15	19	14	14	22	23	15	10	6	7	****	9	11
22	5	5	9	3	3	0	2	1	8	10	16	13	14	15	8	10	10	7	11	17	7	7	****	14	8
23	7	5	4	5	0	3	8	11	16	22	19	36	35	35	27	15	18	9	8	11	43	48	****	33	18
24	27	13	32	10	40	19	41	62	75	88	68	74	46	37	19	6	10	15	15	9	2	8	****	12	32
25	11	8	4	2	2	1	5	10	11	8	5	4	7	5	3	2	2	4	3	5	1	2	****	7	5
26	1	2	0	0	0	0	0	1	8	14	18	9	3	5	4	6	5	9	10	11	7	3	****	3	5
27	1	3	1	0	1	6	4	11	33	32	21	4	9	6	7	13	16	18	15	12	12	7	****	12	11
28	11	5	4	7	12	17	7	7	9	16	19	19	20	21	26	M	27	33	29	24	25	18	****	23	17
29	14	12	8	19	14	12	12	30	36	34	34	31	38	27	16	28	54	26	13	9	8	25	****	14	22
30	9	11	14	24	54	10	47	40	30	24	41	65	39	26	14	13	16	23	25	23	34	75	****	61	31
31	88	83	77	78	70	71	58	59	65	51	23	16	31	33	26	13	12	9	3	11	22	16	****	21	41

MONTHLY STATISTICS:

GEOM		ARITH	<-----PERCENTILE----->					<-----RANGE----->			STD GEOM	PERCENT	NO. OF TIMES				
MEAN	MEDIAN	MEAN	50	90	95	98	99	1-HR		24-HR		DEVIATION	VALID DATA	1-HR	24-HR		
10	12	17	12	40	51	66	75	0	-	100	4	-	44	4	96	0	0

NOTES:

1. FLAGS FOR INVALID DATA :
  - \*\*\*\* : DAILY ZERO/SPAN CHECK
  - D : DYNAMIC CALIBRATION
  - T : TELEMETRY/DATALOGGR/ANALYZER FAULT
  - M : MAINTENANCE OR MACHINE SHUTDOWN
  - P : POWER FAILURE
2. BRACKETED READINGS EXCEED 1-HR OBJECTIVE 300 OR 24-HR OBJECTIVE 150

THE HONGKONG ELECTRIC COMPANY, LTD.  
AIR QUALITY DATA MONTHLY TIME SERIES REPORT

STATION : QUEEN MARY HOSPITAL  
POLLUTANT : SULPHUR DIOXIDE

MONTH: SEPTEMBER

YEAR : 2009  
UNIT : MICROGRAMS/CUBIC METER

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	5	4	2	3	4	5	4	5	8	5	5	4	4	2	0	1	1	1	1	T	2	1	****	1	3
2	2	2	2	1	1	1	2	3	4	3	3	3	2	3	2	2	2	3	3	2	2	2	****	3	2
3	3	4	2	2	3	4	4	6	6	6	4	3	3	1	2	3	3	3	3	2	2	3	****	4	3
4	3	3	3	3	3	3	3	3	3	4	33	40	17	21	17	19	25	5	5	6	6	7	****	3	10
5	3	3	T	2	2	2	3	2	2	2	2	2	2	2	3	4	6	10	6	4	4	4	****	5	3
6	4	3	3	4	4	3	3	3	3	2	2	2	2	2	3	2	3	3	5	5	3	2	****	2	3
7	3	3	4	2	2	3	3	3	3	3	5	2	2	2	2	2	2	1	4	4	5	6	****	2	3
8	8	5	4	4	4	4	5	5	5	4	3	2	4	9	3	4	3	2	7	4	5	6	****	6	5
9	3	3	3	2	2	3	2	2	3	2	2	1	1	1	1	2	2	3	3	3	5	2	****	2	2
10	2	3	2	2	2	2	3	4	3	4	4	3	3	3	4	2	1	0	0	1	1	0	****	2	2
11	1	1	1	1	1	1	1	2	1	1	1	1	2	2	1	2	1	1	1	2	1	2	****	1	1
12	1	0	0	1	1	1	1	1	1	1	1	1	1	2	1	1	1	0	1	2	3	3	****	9	1
13	4	3	3	3	22	32	22	26	30	52	47	68	82	95	131	133	105	91	43	12	14	7	****	2	45
14	2	4	15	17	32	6	6	4	7	5	5	4	2	2	2	1	0	0	0	0	0	0	****	0	5
15	0	0	0	0	0	0	0	1	1	1	1	1	1	1	11	4	7	2	2	3	2	3	****	1	2
16	1	1	1	1	2	1	1	1	1	2	0	2	2	1	2	5	5	10	5	3	1	5	****	1	2
17	1	1	0	1	1	6	1	1	2	4	5	12	15	16	13	13	19	25	17	6	14	11	****	8	8
18	3	9	16	10	12	12	8	11	30	39	46	86	118	165	274	79	14	13	9	7	8	6	****	5	43
19	4	2	3	3	3	4	4	7	22	31	33	49	66	27	21	24	18	14	13	17	12	9	****	5	17
20	7	6	9	15	5	12	28	14	20	20	11	20	25	12	35	26	13	6	3	3	3	3	****	2	13
21	4	1	2	1	2	1	2	1	3	8	38	26	27	28	28	21	37	18	27	22	35	49	****	48	19
22	32	9	7	4	3	3	3	4	6	7	7	6	5	10	6	6	16	7	5	12	6	2	****	2	7
23	2	2	3	3	3	3	6	8	7	6	5	4	3	1	1	1	1	3	3	2	3	2	****	1	3
24	1	1	3	1	2	2	2	4	4	6	6	4	4	3	4	4	3	1	2	2	2	2	****	3	3
25	2	2	2	2	2	2	4	4	3	4	3	2	3	2	<--- D --->	2	3	5	4	3	3	3	****	2	3
26	3	3	4	5	7	14	7	10	14	17	13	8	12	13	8	6	7	8	6	5	4	4	****	4	8
27	4	4	4	5	8	10	9	8	9	8	7	7	8	6	6	5	6	6	7	6	5	4	****	7	7
28	7	6	7	8	7	7	7	7	7	6	6	5	3	3	3	5	3	3	2	2	3	3	****	1	5
29	1	2	2	2	2	2	2	2	2	3	3	2	1	1	1	1	1	1	1	1	2	3	****	4	2
30	3	2	2	1	2	2	2	3	2	2	3	4	2	1	1	1	1	1	0	1	2	0	****	2	2

MONTHLY STATISTICS:

GEOM	ARITH	<-----PERCENTILE----->					<-----RANGE----->				STD GEOM	PERCENT	NO. OF TIMES ABOVE OBJECTIVE	
MEAN	MEDIAN	MEAN	50	90	95	98	99	1-HR	24-HR	DEVIATION	VALID DATA	1-HR	24-HR	
3	3	8	3	16	28	51	93	0	- 274	3	95	0	0	

- NOTES:
1. FLAGS FOR INVALID DATA :
    - \*\*\*\* : DAILY ZERO/SPAN CHECK
    - D : DYNAMIC CALIBRATION
    - T : TELEMETRY/DATALOGGR/ANALYZER FAULT
    - M : MAINTENANCE OR MACHINE SHUTDOWN
    - P : POWER FAILURE
  2. BRACKETED READINGS EXCEED 1-HR OBJECTIVE 800 OR 24-HR OBJECTIVE 350

THE HONGKONG ELECTRIC COMPANY, LTD.  
AIR QUALITY DATA MONTHLY TIME SERIES REPORT

STATION : QUEEN MARY HOSPITAL  
POLLUTANT : NITROGEN DIOXIDE

MONTH: SEPTEMBER

YEAR : 2009  
UNIT : MICROGRAMS/CUBIC METER

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	10	5	4	5	3	6	14	38	47	32	14	9	9	11	5	2	2	5	2	T	3	1	****	16	11
2	11	6	3	2	1	1	9	26	15	11	14	9	7	13	9	7	5	5	4	2	4	8	****	9	8
3	5	6	2	1	2	3	10	39	49	43	14	7	8	7	3	3	4	5	17	7	7	5	****	10	11
4	2	2	2	0	0	0	1	6	11	24	35	40	29	28	18	21	29	14	7	2	5	6	****	9	13
5	8	9	T	3	4	3	6	7	6	3	4	9	6	4	7	5	8	8	3	1	2	3	****	7	5
6	2	0	3	1	5	2	4	4	6	6	2	3	2	2	5	0	0	1	8	9	3	5	****	10	4
7	6	2	4	0	0	0	3	12	23	21	16	11	5	9	12	12	5	4	7	7	2	10	****	11	8
8	22	17	12	9	4	4	3	16	25	22	13	9	8	20	20	8	3	4	10	9	9	19	****	13	12
9	1	2	3	1	0	1	2	12	24	23	13	8	5	7	6	4	2	4	3	3	9	12	****	9	7
10	7	5	3	2	1	1	4	11	12	13	10	11	9	10	12	13	9	8	9	9	5	2	****	6	8
11	1	0	0	0	0	0	1	6	13	15	19	16	8	6	8	17	13	14	12	8	4	4	****	9	8
12	3	1	0	0	0	0	0	3	4	0	2	0	0	0	0	0	0	0	1	9	17	20	****	31	4
13	19	12	12	13	29	25	22	29	36	48	53	58	69	62	75	94	77	54	46	3	0	0	****	1	36
14	0	3	23	19	29	3	12	18	29	25	17	6	18	27	23	6	1	1	0	0	0	0	****	1	11
15	1	1	2	3	3	1	2	1	0	0	0	0	0	0	5	2	3	0	0	0	0	1	****	1	1
16	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	1	6	2	1	0	6	****	3	1
17	0	0	0	0	0	3	0	0	3	3	8	6	6	6	6	7	13	21	20	5	18	13	****	11	6
18	2	8	17	14	9	10	14	9	14	20	18	25	30	38	60	39	18	20	19	13	13	13	****	16	19
19	6	7	10	11	13	16	11	13	27	33	24	21	36	13	17	15	13	19	21	19	14	8	****	7	16
20	7	1	5	15	0	5	18	9	14	12	5	8	10	5	21	13	6	1	0	1	0	0	****	2	7
21	0	0	0	0	0	0	0	17	31	29	39	32	28	22	24	25	51	57	64	79	112	122	****	105	36
22	84	31	14	4	7	7	11	28	40	46	54	49	18	33	44	40	54	60	53	62	49	4	****	13	35
23	14	20	17	18	11	13	27	44	31	27	19	11	11	8	8	12	10	13	14	13	9	7	****	12	16
24	5	4	4	1	1	1	4	11	17	16	15	11	6	3	7	8	6	5	7	10	7	8	****	15	7
25	4	4	4	2	1	3	5	14	14	13	14	11	6	<--- D --->	7	7	6	16	14	16	9	****	4	8	
26	2	5	8	14	16	32	30	41	53	59	52	31	25	28	28	13	9	9	35	33	35	14	****	14	25
27	11	14	13	18	18	21	22	18	21	23	32	25	27	21	28	26	29	32	39	25	21	16	****	14	22
28	9	8	8	12	13	11	16	23	33	29	42	33	22	42	38	45	44	44	26	24	20	14	****	5	24
29	4	5	4	2	3	3	6	17	14	24	23	14	11	13	10	11	15	15	16	12	15	16	****	14	12
30	16	7	3	2	3	3	5	8	13	15	14	18	18	11	11	12	16	16	10	28	46	11	****	23	13

MONTHLY STATISTICS:

GEOM	ARITH	<-----PERCENTILE----->					<-----RANGE----->			STD GEOM	PERCENT	NO. OF TIMES ABOVE OBJECTIVE	
MEAN	MEDIAN	MEAN	50	90	95	98	99	1-HR	24-HR	DEVIATION	VALID DATA	1-HR	24-HR
7	9	13	9	31	44	60	76	0	- 122	5	95	0	0

- NOTES:
1. FLAGS FOR INVALID DATA :
    - \*\*\*\* : DAILY ZERO/SPAN CHECK
    - D : DYNAMIC CALIBRATION
    - T : TELEMETRY/DATALOGGR/ANALYZER FAULT
    - M : MAINTENANCE OR MACHINE SHUTDOWN
    - P : POWER FAILURE
  2. BRACKETED READINGS EXCEED 1-HR OBJECTIVE 300 OR 24-HR OBJECTIVE 150













THE HONGKONG ELECTRIC COMPANY, LTD.  
AIR QUALITY DATA MONTHLY TIME SERIES REPORT

STATION : CHEUNG CHAU  
 POLLUTANT : SULPHUR DIOXIDE  
 MONTH: JULY  
 YEAR : 2009  
 UNIT : MICROGRAMS/CUBIC METER

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	1	2	2	1	2	1	1	2	2	2	2	2	2	2	2	2	1	2	2	2	2	3	****	2	2
2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	****	2	1
3	1	1	1	1	1	1	2	1	1	2	1	1	1	1	1	2	2	1	1	2	2	1	****	1	1
4	1	1	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	****	0	0
5	0	0	0	6	13	9	8	10	8	6	1	2	7	6	8	8	5	3	3	7	4	4	****	3	5
6	2	3	2	2	3	6	6	6	5	7	5	4	4	2	2	5	14	20	6	2	2	3	****	0	5
7	0	2	1	3	2	3	3	3	2	2	3	3	3	2	3	4	3	2	4	3	3	3	****	3	3
8	2	2	2	3	5	3	5	8	10	7	7	10	6	3	4	6	8	4	3	3	4	3	****	5	5
9	4	8	12	6	4	7	6	4	4	2	2	5	4	3	11	9	5	3	2	1	1	2	****	1	5
10	1	0	0	0	0	2	12	8	7	43	21	48	19	36	44	45	38	19	10	13	8	7	****	20	18
11	23	16	26	24	12	34	9	5	4	3	4	13	5	10	4	8	1	1	1	2	1	1	****	2	9
12	2	1	6	9	13	8	10	8	11	13	6	13	14	23	17	13	13	13	15	22	14	7	****	6	11
13	8	9	9	9	8	8	13	15	11	6	4	5	9	8	12	17	10	8	6	3	2	2	****	6	8
14	5	5	3	3	3	1	2	4	2	2	2	1	4	6	4	1	2	1	3	2	4	7	****	5	3
15	5	3	2	2	2	4	2	4	2	1	2	2	4	3	3	7	3	3	3	4	4	3	****	6	3
16	8	5	4	4	3	5	5	2	2	3	6	6	2	3	4	5	3	2	2	3	3	1	****	3	4
17	3	4	3	4	2	5	6	5	7	8	5	11	5	2	7	3	7	4	2	2	3	5	****	3	5
18	4	2	17	16	7	13	18	21	23	44	92	102	82	68	43	24	11	3	8	4	4	4	****	14	27
19	13	5	3	1	1	1	1	1	1	1	1	1	1	1	3	4	6	5	3	2	2	2	****	4	3
20	1	1	1	1	1	1	1	1	0	1	6	3	3	8	4	4	5	2	5	11	14	12	****	14	4
21	12	8	13	17	7	6	8	12	10	5	2	4	25	14	9	15	14	10	8	8	9	11	****	3	10
22	3	2	3	2	2	4	9	15	11	11	27	35	12	6	7	8	2	2	2	2	2	3	****	2	7
23	2	1	1	1	1	1	1	3	1	5	4	2	1	2	1	2	4	4	5	2	1	2	****	1	2
24	1	2	1	2	2	2	2	3	3	2	2	2	2	2	4	2	4	3	2	1	2	3	****	3	2
25	1	3	1	1	1	2	3	2	1	3	5	2	1	2	2	1	1	0	0	1	0	0	****	0	2
26	1	1	0	0	0	0	1	1	1	2	0	0	1	0	0	0	0	0	0	0	0	0	****	1	0
27	0	0	0	2	0	0	0	0	5	11	5	1	1	1	1	1	2	1	1	2	2	3	****	2	2
28	1	2	2	1	1	1	2	1	0	1	0	0	0	0	0	0	0	1	1	0	0	0	****	0	1
29	2	1	2	4	5	5	5	6	5	8	8	8	0	0	0	0	0	0	0	0	0	0	****	1	3
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	5	4	4	4	4	****	2	1
31	2	3	4	2	3	3	1	3	1	1	2	3	1	4	2	1	2	3	2	1	3	3	****	6	2

MONTHLY STATISTICS:

GEOM	ARITH		PERCENTILE					RANGE				STD GEOM	PERCENT	NO. OF TIMES			
MEAN	MEDIAN	MEAN	50	90	95	98	99	1-HR		24-HR		DEVIATION	VALID DATA	1-HR	24-HR		
3	2	5	2	11	16	27	44	0	-	102	0	-	27	3	96	0	0

NOTES:

1. FLAGS FOR INVALID DATA :
  - \*\*\*\* : DAILY ZERO/SPAN CHECK
  - D : DYNAMIC CALIBRATION
  - T : TELEMETRY/DATALOGGR/ANALYZER FAULT
  - M : MAINTENANCE OR MACHINE SHUTDOWN
  - P : POWER FAILURE
2. BRACKETED READINGS EXCEED 1-HR OBJECTIVE 800 OR 24-HR OBJECTIVE 350



THE HONGKONG ELECTRIC COMPANY, LTD.  
AIR QUALITY DATA MONTHLY TIME SERIES REPORT

STATION : CHEUNG CHAU  
 POLLUTANT : SULPHUR DIOXIDE  
 MONTH: AUGUST  
 YEAR : 2009  
 UNIT : MICROGRAMS/CUBIC METER

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	7	4	9	4	4	7	7	13	10	6	13	9	10	9	28	28	37	30	38	28	17	7	****	7	14
2	5	6	11	20	46	35	22	26	53	29	26	33	36	39	33	27	17	20	10	10	9	7	****	9	23
3	7	15	22	19	19	13	8	11	12	12	14	15	11	8	6	5	10	18	3	2	2	1	****	0	10
4	6	11	21	8	11	2	1	6	2	2	2	1	15	22	18	5	1	0	1	1	3	2	****	1	6
5	1	1	0	0	1	0	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	****	1	1
6	2	1	1	1	1	1	1	2	3	3	3	4	1	2	1	2	3	3	11	25	33	****	22	6	
7	28	28	21	13	9	6	5	10	17	20	15	14	5	1	5	11	4	1	0	1	0	0	****	1	9
8	1	1	0	0	1	2	9	10	14	28	38	34	30	25	20	20	27	18	5	2	2	2	****	2	13
9	3	6	6	10	7	13	25	23	27	26	27	24	20	13	7	5	7	6	3	4	4	3	****	3	12
10	4	4	4	2	3	5	6	4	6	5	4	5	4	5	7	13	17	16	11	11	8	6	****	4	7
11	1	1	1	1	2	2	2	4	2	4	8	9	8	10	14	14	11	8	16	16	4	4	****	3	6
12	2	2	1	2	1	1	1	1	2	1	1	1	1	1	1	1	3	2	1	1	2	1	****	1	1
13	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	1	2	0	0	1	2	****	2	1
14	3	9	12	6	7	2	0	0	5	2	3	5	2	0	1	2	2	2	1	1	1	1	****	1	3
15	2	3	1	1	1	1	2	4	5	7	7	5	4	3	2	2	3	6	1	1	1	1	****	1	3
16	2	2	1	4	4	2	1	1	2	1	1	2	4	1	2	2	0	2	0	1	0	0	****	3	2
17	1	1	0	1	1	1	1	3	5	5	2	2	2	4	2	2	1	3	1	1	3	8	****	14	3
18	20	18	12	11	12	5	8	10	12	8	13	9	10	8	10	7	7	6	6	3	11	7	****	4	9
19	3	2	1	1	0	2	5	8	4	4	3	2	2	4	5	5	5	3	3	2	2	2	****	1	3
20	1	1	2	2	2	2	3	5	9	11	6	8	8	6	5	5	2	3	2	1	2	3	****	3	4
21	3	2	1	1	1	0	1	1	1	3	14	10	7	17	10	8	3	4	2	2	1	2	****	3	4
22	3	2	1	1	1	3	5	4	4	3	3	6	9	7	6	8	4	3	4	4	5	4	****	3	4
23	3	2	3	2	2	1	4	8	12	10	8	11	12	20	18	9	8	5	9	10	21	28	****	24	10
24	22	28	24	14	18	27	23	24	24	24	23	23	20	17	12	3	3	5	7	8	9	****	10	17	
25	10	6	6	7	14	8	7	7	12	10	8	4	3	4	3	3	4	4	4	4	4	3	****	1	6
26	2	4	5	6	10	8	10	11	16	12	17	21	17	9	8	8	10	13	19	12	13	8	****	7	11
27	5	4	6	5	3	4	7	11	10	12	11	10	3	3	3	3	4	3	2	2	5	3	****	2	5
28	3	3	5	5	5	2	2	3	5	5	8	10	7	6	8	10	15	12	8	6	3	5	****	9	6
29	6	7	5	2	3	2	7	18	22	11	16	14	9	13	13	25	43	29	26	21	15	****	12	14	
30	13	11	14	13	14	4	10	1	2	3	6	8	14	16	17	20	16	5	7	10	21	31	****	26	12
31	26	26	25	14	15	18	25	17	11	12	18	15	15	18	11	18	21	21	8	11	13	13	****	24	17

MONTHLY STATISTICS:

GEOM		ARITH	-----PERCENTILE-----					-----RANGE-----			STD GEOM	PERCENT	NO. OF TIMES				
MEAN	MEDIAN	MEAN	50	90	95	98	99	1-HR			24-HR	DEVIATION	VALID DATA	1-HR	24-HR		
4	5	8	5	20	26	30	36	0	-	53	1	-	23	3	96	0	0

NOTES:

1. FLAGS FOR INVALID DATA :
  - \*\*\*\* : DAILY ZERO/SPAN CHECK
  - D : DYNAMIC CALIBRATION
  - T : TELEMETRY/DATALOGGR/ANALYZER FAULT
  - M : MAINTENANCE OR MACHINE SHUTDOWN
  - P : POWER FAILURE
2. BRACKETED READINGS EXCEED 1-HR OBJECTIVE 800 OR 24-HR OBJECTIVE 350



THE HONGKONG ELECTRIC COMPANY, LTD.  
AIR QUALITY DATA MONTHLY TIME SERIES REPORT

STATION : CHEUNG CHAU  
 POLLUTANT : SULPHUR DIOXIDE  
 MONTH: SEPTEMBER  
 YEAR : 2009  
 UNIT : MICROGRAMS/CUBIC METER

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	31	21	4	4	19	28	20	11	8	8	11	8	11	5	4	4	3	3	2	3	4	4	****	6	10
2	2	8	17	15	5	3	11	12	13	20	9	4	13	11	9	7	5	6	4	3	2	5	****	3	8
3	3	4	7	4	9	5	25	14	11	10	12	7	12	3	4	5	6	3	6	2	3	4	****	5	7
4	3	4	6	4	3	4	5	3	7	38	17	14	17	13	13	19	10	8	5	5	11	12	****	8	10
5	6	7	6	6	4	6	5	5	4	4	2	4	5	7	11	13	10	6	6	6	10	9	****	3	6
6	3	4	8	8	9	8	6	9	8	17	10	6	3	2	4	3	4	3	6	7	5	4	****	4	6
7	5	5	7	11	5	3	5	5	7	6	4	4	11	9	5	10	15	19	20	18	11	10	****	6	9
8	10	7	7	5	5	7	13	21	30	13	10	5	4	11	16	15	7	13	8	10	6	7	****	10	10
9	6	6	11	9	5	5	4	13	9	12	14	4	3	3	4	4	5	6	6	2	5	13	****	5	7
10	5	3	4	3	3	3	3	4	4	3	4	4	3	4	3	8	51	51	42	32	64	22	****	31	15
11	8	2	2	3	3	2	8	18	4	6	10	10	7	22	24	18	27	23	22	18	18	6	****	26	12
12	25	28	9	29	27	18	39	13	17	6	15	4	2	3	4	2	3	3	3	6	8	8	****	8	12
13	13	18	21	24	17	15	14	67	47	42	43	40	67	68	99	106	86	45	30	10	11	9	****	7	39
14	8	5	9	12	9	11	10	9	10	10	8	9	6	4	4	6	6	6	5	2	2	1	****	13	7
15	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	****	2	1
16	1	1	0	1	1	1	1	1	1	2	1	1	1	1	1	1	3	2	1	2	3	2	****	3	1
17	2	2	2	2	3	3	2	3	4	3	3	2	4	2	1	2	2	2	1	3	4	3	****	2	2
18	3	3	4	3	5	3	3	4	3	6	5	5	5	4	4	8	8	4	2	2	2	1	****	3	4
19	2	2	2	2	2	3	2	8	14	14	16	19	14	17	22	18	8	5	4	8	10	9	****	8	9
20	7	3	4	3	4	3	5	3	6	7	5	4	5	6	6	3	4	3	2	5	8	10	****	6	5
21	3	3	2	2	2	2	9	10	14	23	18	14	9	6	8	9	11	20	31	10	8	16	****	25	11
22	17	8	8	10	14	11	4	6	6	4	6	7	7	7	8	6	9	6	6	7	8	7	****	7	8
23	4	4	3	2	2	3	6	5	9	13	40	20	16	5	6	7	3	5	27	15	25	9	****	59	13
24	51	31	40	25	10	57	12	5	6	24	29	49	71	89	48	16	8	7	4	9	3	8	****	25	27
25	14	23	59	57	71	43	47	38	27	13	11	7	8	6	3	3	8	16	9	5	4	5	****	5	21
26	9	4	7	13	10	9	9	8	14	22	16	17	16	20	25	24	16	10	13	14	10	10	****	12	13
27	7	8	10	14	13	14	12	11	13	16	19	16	12	14	11	10	10	11	14	25	17	8	****	7	13
28	8	9	12	22	21	17	13	13	13	11	12	13	11	6	5	6	4	3	5	7	9	7	****	2	10
29	2	1	1	5	5	6	5	4	7	5	4	3	3	<--- D --->	2	2	1	1	1	1	3	8	****	11	4
30	7	3	3	2	5	9	5	17	13	6	4	4	4	4	5	3	6	0	2	6	7	3	****	7	5

MONTHLY STATISTICS:

GEOM	ARITH	<-----PERCENTILE----->						<-----RANGE----->				STD GEOM	PERCENT	NO. OF TIMES	
MEAN	MEDIAN	MEAN	50	90	95	98	99	1-HR	24-HR	24-HR	DEVIATION	VALID DATA	1-HR	24-HR	
6	6	10	6	22	31	54	68	0	- 106	1 - 39	3	96	0	0	

- NOTES:
1. FLAGS FOR INVALID DATA :
    - \*\*\*\* : DAILY ZERO/SPAN CHECK
    - D : DYNAMIC CALIBRATION
    - T : TELEMETRY/DATALOGGR/ANALYZER FAULT
    - M : MAINTENANCE OR MACHINE SHUTDOWN
    - P : POWER FAILURE
  2. BRACKETED READINGS EXCEED 1-HR OBJECTIVE 800 OR 24-HR OBJECTIVE 350



## Appendix C Summary Results on Water Quality Monitoring

### LAMMA POWER STATION FGD WASTEWATER TREATMENT PLANT EFFLUENT DISCHARGE TO ASH LAGOON SUSPENDED SOLIDS AND PH

Period : July - September 2009

Week Ending	No. of Samples	Suspended Solids, mg/L			pH		
		Maximum	Minimum	Average	Maximum	Minimum	Average
04/07/09	5*	16	13	14	8.5	8.4	8.4
11/07/09	5*	19	13	16	8.5	8.4	8.5
18/07/09	5*	14	10	13	8.5	8.4	8.4
25/07/09	5*	17	12	14	8.4	8.3	8.4
01/08/09	6*	17	14	16	8.4	8.3	8.3
08/08/09	6*	20	14	17	8.4	8.2	8.3
15/08/09	6*	22	17	19	8.3	8.1	8.2
22/08/09	4*	20	15	18	8.3	8.2	8.2
29/08/09	4*	19	14	17	8.3	8.2	8.2
05/09/09	5*	21	15	19	8.2	8.0	8.2
12/09/09	6*	20	12	16	8.2	8.0	8.2
19/09/09	4*	18	13	15	8.3	8.1	8.2
26/09/09	3*	16	12	14	8.2	8.1	8.2

Remark :

\* - No sampling for the remaining day(s) of the week due to no discharge

**LAMMA POWER STATION  
FGD WASTEWATER TREATMENT PLANT  
EFFLUENT DISCHARGE TO ASH LAGOON  
TRACE METAL, TOTAL PHOSPHORUS  
AND TOTAL NITROGEN ANALYSIS**

Period : July - September 2009

Sampling date		09/07/2009	17/08/2009	03/09/2009
Barium,	ug/L	<150	<150	<150
Mercury,	ug/L	<0.5	<0.5	<0.5
Cadmium,	ug/L	4	<1	<1
Iron,	ug/L	<400	<400	<400
Total Phosphorous,	mg/L	<0.8	<0.8	<0.8
Total Nitrogen,	mg/L	126	45	210
Cyanide,	mg/L	0.02	0.02	<0.01

**Remark:**

According to the WPCO Ash Lagoon Discharge Licence, contents at exact levels of trace metals below 1/10<sup>th</sup> of the WPCO Licence permitted limits will not be reported. When the concentration of a metal exceeds 1/10<sup>th</sup> of the limit, the exact value of the metal concentration will be reported.

## Appendix D Summary of EMIS

<b>EM&amp;A Log Ref.</b>	<b>Mitigation Measures</b>	<b>Implementation Status</b>
	<b>GENERAL</b>	
A1	No other process, except the Wet Limestone-Gypsum process used in the FGD plants of the coal-fired Units L6, L7 and L8 within the Lamma Power Station, shall be used in the FGD plants for the coal-fired Units L4 and L5 unless otherwise agreed by EPD.	Complied
	<b>WATER QUALITY</b>	
B1	All wastewater arising from the operation of the FGD plants for the coal-fired Units L4 and L5 shall be collected and directed to the existing wastewater treatment plant within the Lamma Power Station for treatment.	Complied
B2	The operational plant effluent from the FGD plants should be reused as much as possible in order to minimise discharge to the WWTP.	Complied
B3	Maintenance of the WWTP should be performed regularly to ensure the effluent from the WWTP would not exceed the current requirements stipulated in the WPCO licence for Ash Lagoon.	Complied
	<b>WASTE</b>	
C1	No gypsum or sludge arising from the operation of the FGD plants for the coal-fired Units L4 and L5 shall be disposed of anywhere. All gypsum and sludge shall be collected and reused.	Complied
	<b>NOISE</b>	
D1	Equipments including the Absorber Recirculation Pump, Oxidation Air Blower, Booster Fan and Booster Fan Motor of the FGD plants shall be acoustically insulated and the Gas-Gas Heater (untreated side) of the FGD plants shall be provided with reinforced lagging to reduce the noise impact.	Complied