

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

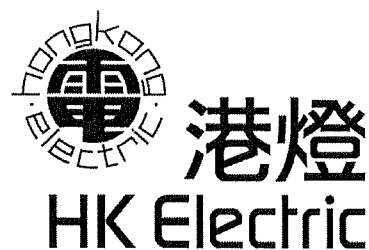


**Lamma Power Station  
Units L2, L4 & L5 Flue Gas Desulphurization  
Plants Retrofit  
Operational Phase**

**Quarterly Environmental Monitoring & Audit Report**

**July – September 2011**

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




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

**ENVIRONMENTAL PERMITS NO. EP-248/2006 & EP-287/2007**

**LAMMA POWER STATION  
UNITS L2, L4 & L5 FLUE GAS DESULPHURIZATION PLANTS RETROFIT**

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

Report Title	Quarterly EM&A Report (July to September 2011)
Date	14 December 2011
Certified by	 (Mr. IP Tat-Yan, Environmental Team Leader)

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## EXECUTIVE SUMMARY

This is the quarterly Environmental Monitoring and Audit (EM&A) report for the Projects “Lamma Power Station Units L4 & L5 Flue Gas Desulphurization Plant Retrofit” and “Lamma Power Station Unit L2 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 projects in the period from July to September 2011.

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

Units L2, L4 and L5 were out of service during the following period:

Unit	Period	Remark
L2	15/08/2011 20:40 to 16/08/2011 07:41	Turbine tripping device test and inspection.
L2	22/09/2011 23:00 to 23/09/2011 01:05	Defect rectification
L5	08/07/2011 21:06 to 09/07/2011 07:30	Removal of testing equipment
L5	29/07/2011 20:09 to 30/07/2011 03:39	HP feed heater maintenance
L5	06/08/2011 14:33 to 08/08/2011 06:55	HP heater tube leak repair.
L5	08/08/2011 18:59 to 10/08/2011 07:05	HP heater tube leak repair.
L5	09/09/2011 23:14 to 14/09/2011 04:01	Defect rectification

### Malfunction/Outage Records of Pollution Control Equipment

Major outages of the Pollution Control Equipment during the reporting period are listed below:

Equipment	Period	Cause	Actions Taken
L2 FGD	04/06/2011 04:05 to 20/07/2011 15:51	Booster fan repairing work	EPD was informed by letter dated 22/07/2011

Equipment	Period	Cause	Actions Taken
L2 FGD	02/08/2011 01:30 to 07/08/2011 18:40	FGD was bypassed for the inspection of Booster Fan	EPD was informed by letter dated 10/08/2011
L2 FGD	01/09/2011 13:20 to 17:00	FGD was bypassed for the installation of sampling equipment for conducting re-commissioning test.	EPD was informed by letter dated 06/09/2011.
L4 FGD	07/09/2011 09:42 to 11:48	FGD was bypassed for the modification of control logic of FGD dampers.	EPD was notified by letter dated 08/09/2011.
L5 FGD	08/08/2011 06:55 to 18:59	FGD was bypassed due to mal-functioning of exhaust valve.	EPD was informed by letter dated 10/08/2011
L5 FGD	06/09/2011 12:47 to 14:16	FGD was bypassed for the modification of control logic of bypass damper.	EPD was informed by letter dated 08/09/2011

For other minor outages, please refer to section 1.4 of the report.

### **Environmental Monitoring Works**

Environmental monitoring works were performed during the operation of Units L2, L4 and L5 FGD Plants 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 for L4/5 FGD plants retrofit project	EP-248/2006	25/04/2006	-	HK Electric	25/04/2006
Environmental Permit for Unit L2 FGD plant retrofit project	EP-287/2007	02/10/2007	-	HK Electric	02/10/2007
Specified Processes Licence	L-7-002(8)	01/01/2011	31/12/2012	HK Electric	30/12/2010

Description	Permit / Licence No.	Valid Period		Issued To	Date of Issuance
		From	To		
issued under APCO					
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**

Two concerns on environmental issues against Lamma Power Station were received during the reporting period, for which nothing abnormal was identified for the Power Station.

### **Future key issues**

Key issues to be considered in the coming months include:

#### *Air Impact*

- To continuously carry out the air quality monitoring for Units L2, L4 and L5.

#### *Water Impact*

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

### **Concluding Remarks**

The environmental performance of the projects was generally satisfactory.

## 1. INTRODUCTION

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 Desulfurization Plant Retrofit Project” under the requirements of Clause 2.18 of Environmental Permit (EP) No. EP-248/2006 and “Operation of Lamma Power Station Unit L2 Flue Gas Desulfurization Plant Retrofit Project” under the requirements of Clause 2.10 of Environmental Permit (EP) No. EP-287/2007.

This report summarizes the environmental monitoring and audit work for the said Projects for the period from July to September 2011.

### 1.1 Background

The Projects involves retrofitting the three existing coal-fired generating Units L2, L4 and L5 of Lamma Power Station with Flue Gas Desulphurisation (FGD) plants for reducing sulphur dioxide emissions in support of Government policy to improve the air quality of the Pearl River Delta.

The Projects include the installation and operation of FGD plants with flue gas desulphurization efficiency of 90% for the three coal-fired Units L2, 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 1.1a, Figure 1.1b, Figure 1.2a, Figure 1.2b 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 Plants retrofit projects for Units L2, L4 and L5 includes:

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

## 1.2 Project Organisation

The management structure to oversee the Projects 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

Units L2, L4 and L5 were out of service during the following period:

Unit	Period	Remark
L2	15/08/2011 20:40 to 16/08/2011 07:41	Turbine tripping device test and inspection.
L2	22/09/2011 23:00 to 23/09/2011 01:05	Defect rectification
L5	08/07/2011 21:06 to 09/07/2011 07:30	Removal of testing equipment
L5	29/07/2011 20:09 to 30/07/2011 03:39	HP feed heater maintenance
L5	06/08/2011 14:33 to 08/08/2011 06:55	HP heater tube leak repair.
L5	08/08/2011 18:59 to 10/08/2011 07:05	HP heater tube leak repair.
L5	09/09/2011 23:14 to 14/09/2011 04:01	Defect rectification

## 1.4 Malfunction/Outage Records of Pollution Control Equipment

Equipment	Period	Cause	Actions Taken
L2 FGD	04/06/2011 04:05 to 20/07/2011 15:51	FGD was bypassed for Booster Fan repairing work.	EPD was informed by letter dated 22/07/2011
L2 FGD	30/07/2011 01:58 to 02:00	Routine damper exercise	EPD was informed by letter dated 02/08/2011

Equipment	Period	Cause	Actions Taken
L2 FGD	02/08/2011 01:30 to 07/08/2011 18:40	FGD was bypassed for Booster Fan inspection.	EPD was informed by letter dated 10/08/2011
L2 FGD	25/08/2011 11:09 to 11:16	FGD was bypassed for maintenance of limit switch of bypass damper.	EPD was informed by letter dated 29/08/2011
L2 FGD	01/09/2011 13:20 to 17:00	FGD was bypassed for the installation of sampling equipment for conducting re- commissioning test.	EPD was informed by letter dated 06/09/2011
L2 FGD	10/09/2011 03:10 to 03:14	Routine damper exercise	EPD was informed by letter dated 15/09/2011
L2 FGD	15/09/2011 19:29 to 19:42	FGD was bypassed due to excessive furnace draft fluctuation during turbine on-load valve test.	EPD was informed by letter dated 20/09/2011
L4 FGD	02/07/2011 01:55 to 02:02	Routine damper exercise	EPD was informed by letter dated 06/07/2011
L4 FGD	09/07/2011 02:30 to 02:33	Routine damper exercise	EPD was informed by letter dated 13/07/2011
L4 FGD	16/07/2011 03:22 to 03:24	Routine damper exercise	EPD was informed by letter dated 20/07/2011
L4 FGD	23/07/2011 03:30 to 03:33	Routine damper exercise	EPD was informed by letter dated 27/07/2011
L4 FGD	30/07/2011 01:58 to 02:00	Routine damper exercise	EPD was informed by letter dated 02/08/2011
L4 FGD	06/08/2011 02:37 to 02:40	Routine damper exercise	EPD was informed by letter dated 08/08/2011
L4 FGD	22/08/2011 14:32 to 14:39	FGD was bypassed due to mal-operation of Booster Fan vibration alarm.	EPD was notified by letter dated 25/08/2011
L4 FGD	03/09/2011 02:54 to 02:59	Routine damper exercise	EPD was informed by letter dated 06/09/2011
L4 FGD	06/09/2011 21:39 to 21:46	FGD was bypassed due to the trip of Absorber Recirculation Pump (ARP) 4C	EPD was informed by letter dated 08/09/2011

Equipment	Period	Cause	Actions Taken
L4 FGD	07/09/2011 09:42 to 11:48	FGD was bypassed for the modification of control logic of FGD dampers.	EPD was notified by letter dated 08/09/2011.
L4 FGD	17/09/2011 03:38 to 03:46	Routine damper exercise	EPD was informed by letter dated 20/09/2011
L4 FGD	24/09/2011 02:28 to 02:37	Routine damper exercise	EPD was informed by letter dated 24/09/2011
L5 FGD	02/07/2011 02:08 to 02:15	Routine damper exercise	EPD was informed by letter dated 06/07/2011
L5 FGD	10/07/2011 23:29 to 23:31	Limestone supply interruption caused by failure of limestone feeding system.	EPD was informed by letter dated 13/07/2011
L5 FGD	16/07/2011 03:17 to 03:19	Routine damper exercise	EPD was informed by letter dated 20/07/2011
L5 FGD	23/07/2011 03:37 to 03:43	Routine damper exercise	EPD was informed by letter dated 27/07/2011
L5 FGD	08/08/2011 06:55 to 18:59	FGD was bypassed due to mal-functioning of exhaust valve.	EPD was informed by letter dated 10/08/2011
L5 FGD	27/08/2011 02:22 to 02:26	Routine damper exercise	EPD was informed by letter dated 29/08/2011
L5 FGD	27/08/2011 14:08 to 14:11	FGD was bypassed due to mal-operation of Booster Fan vibration high alarm.	EPD was informed by letter dated 29/08/2011
L5 FGD	03/09/2011 02:06 to 02:07	Routine damper exercise	EPD was informed by letter dated 06/09/2011
L5 FGD	06/09/2011 12:47 to 14:16	FGD was bypassed for the modification of control logic of bypass damper.	EPD was informed by letter dated 08/09/2011
L5 FGD	24/09/2011 03:21 to 03:29	Routine damper exercise	EPD was informed by letter dated 27/09/2011

## 1.5 Summary of EM&A Requirements

Environmental Monitoring and Audit (EM&A) requirements have been discussed in the Environmental Impact Assessment (EIA) Report/ Project Profile for the Projects. The assessment results indicate that environmental monitoring works required for the EM&A programmes of these Projects are 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 the Projects 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 Projects;
- The implementation status of environmental protection and pollution control / mitigation measures.

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



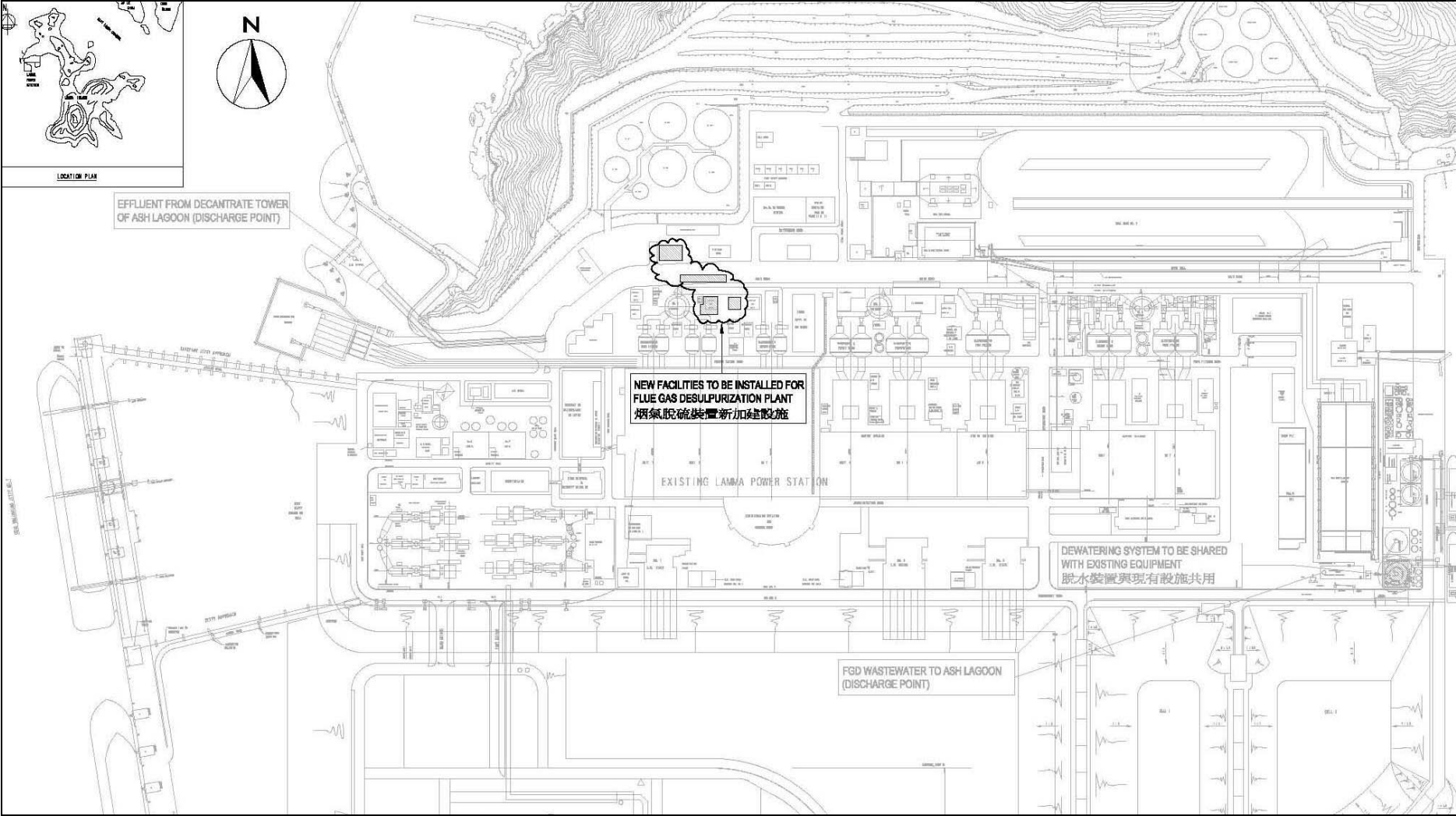


Figure 1.1b Location of New Facilities for L2 FGD Plant

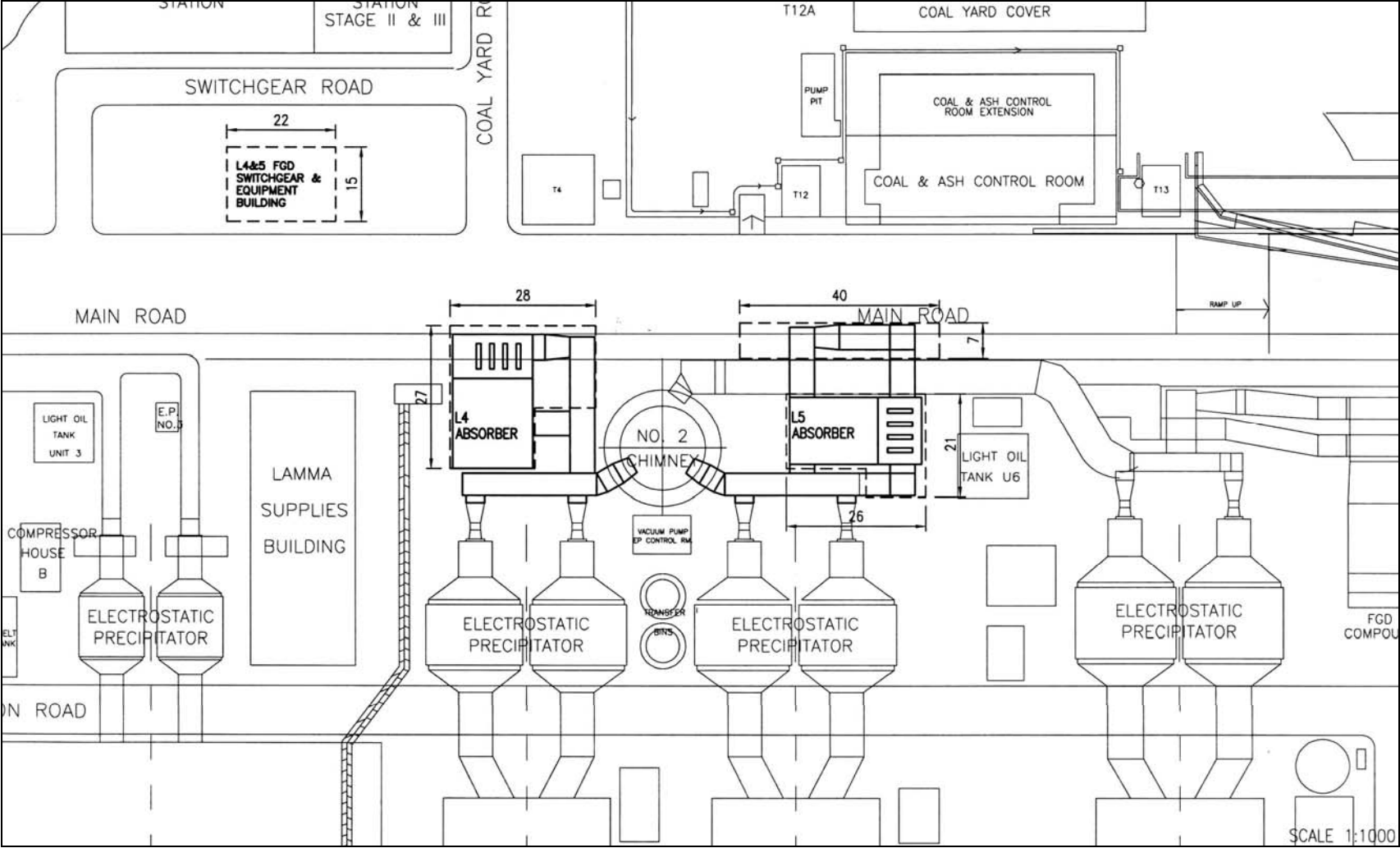


Figure 1.2a General Arrangement of L4 & L5 FGD Plants

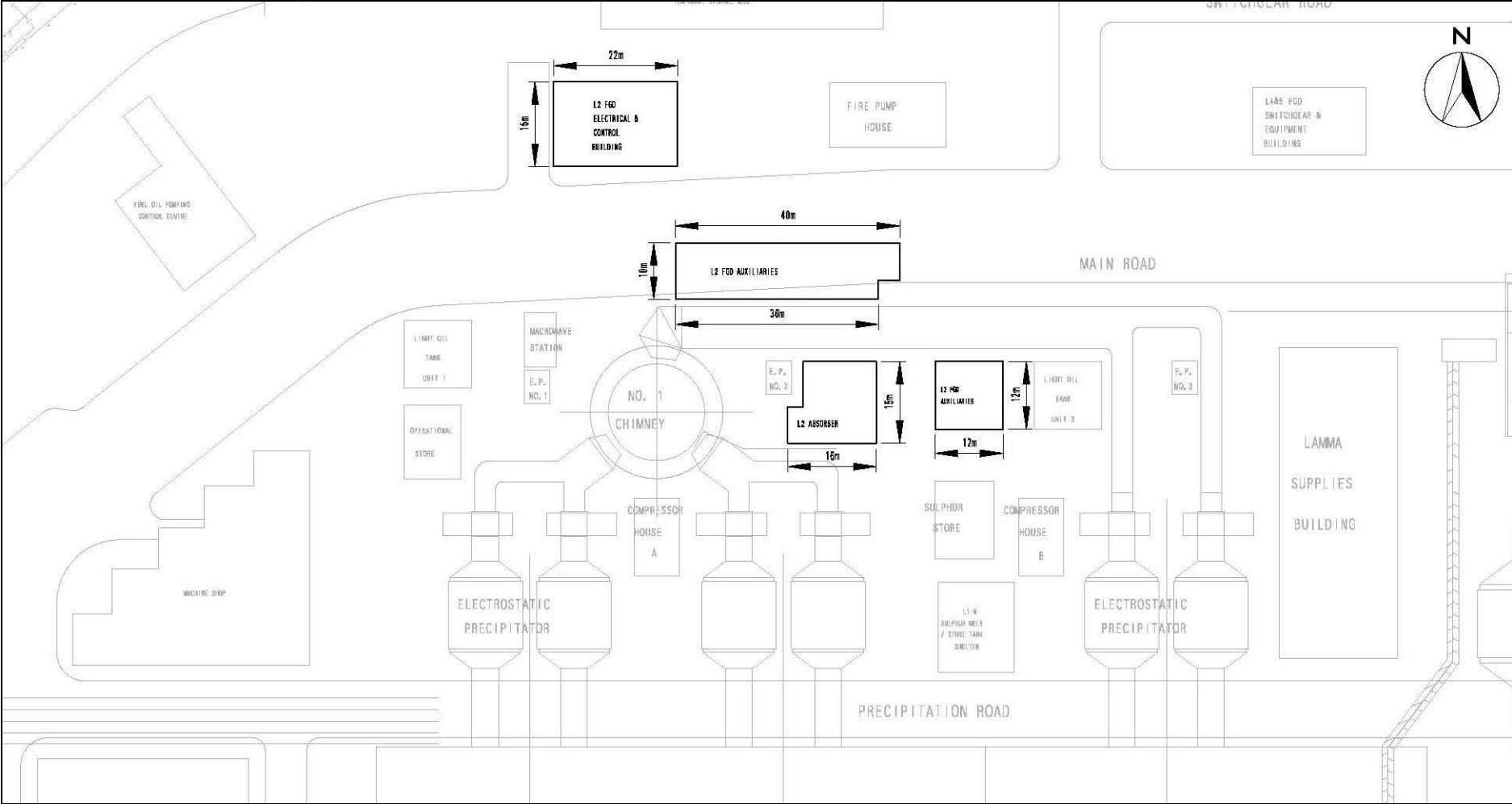


Figure 1.2b General Arrangement of L2 FGD Plant

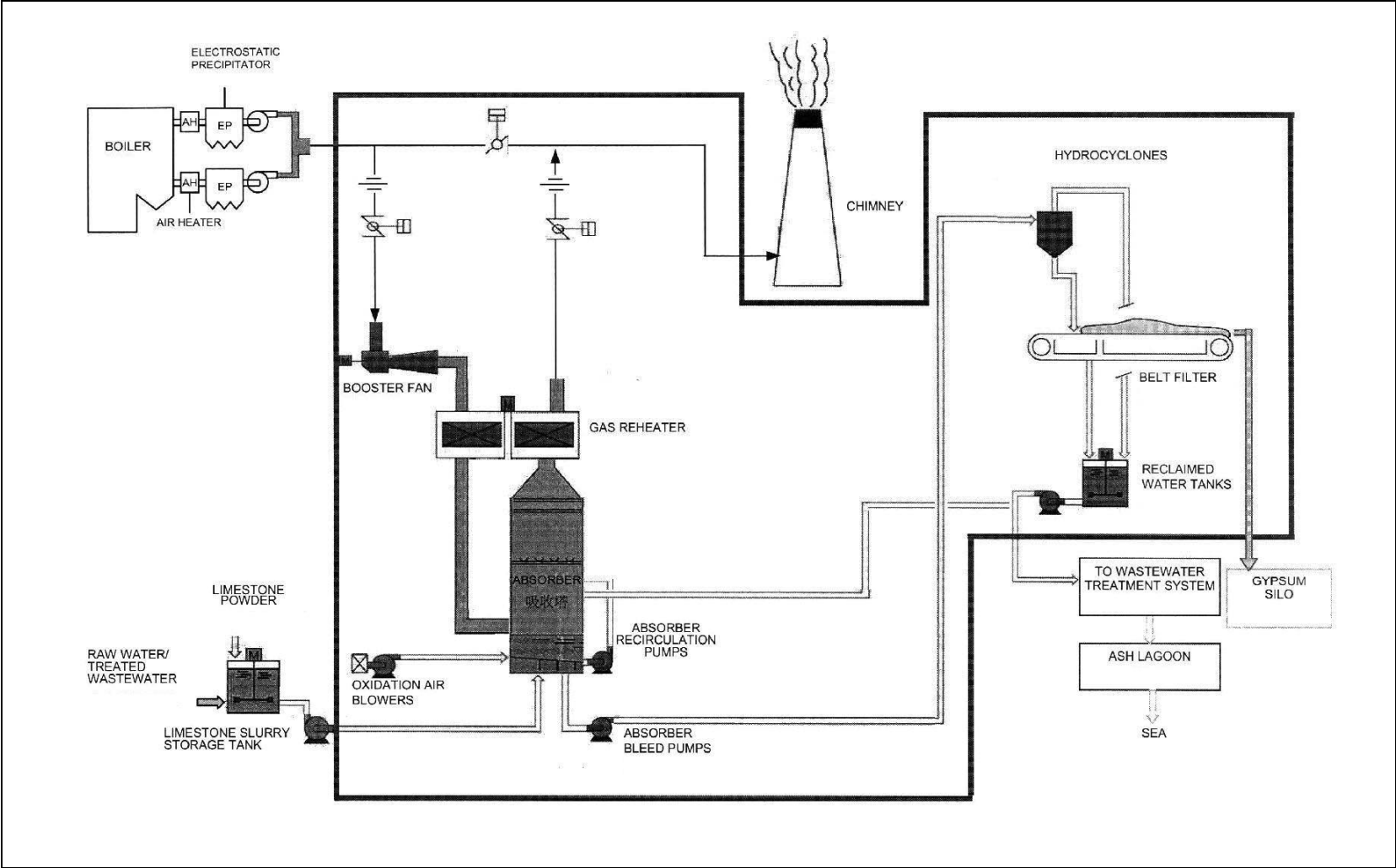


Figure 1.3 Schematic Diagram of the L4 & L5 FGD Plant

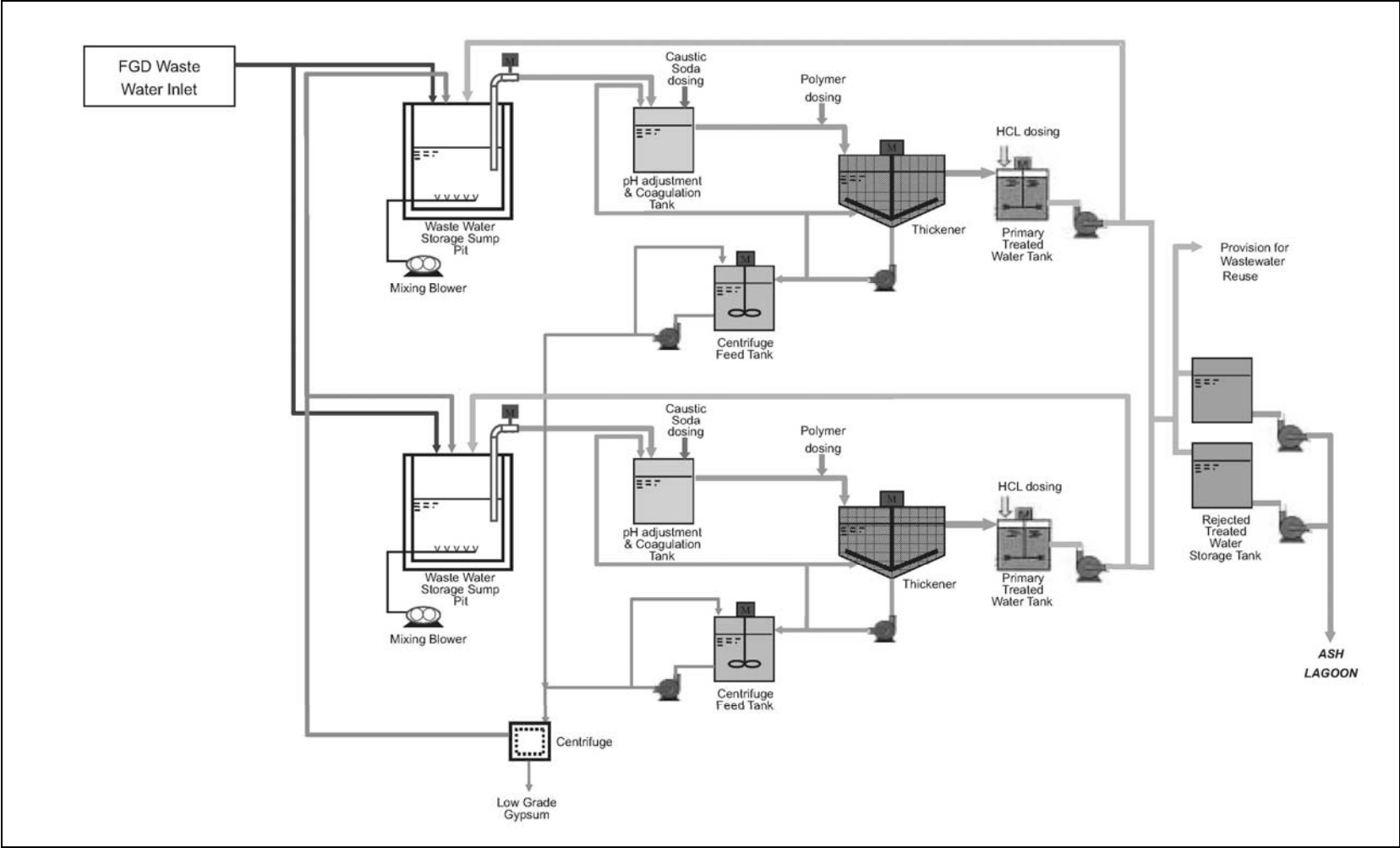


Figure 1.4 Simplified Schematic Diagram of FGD Wastewater Treatment Plant

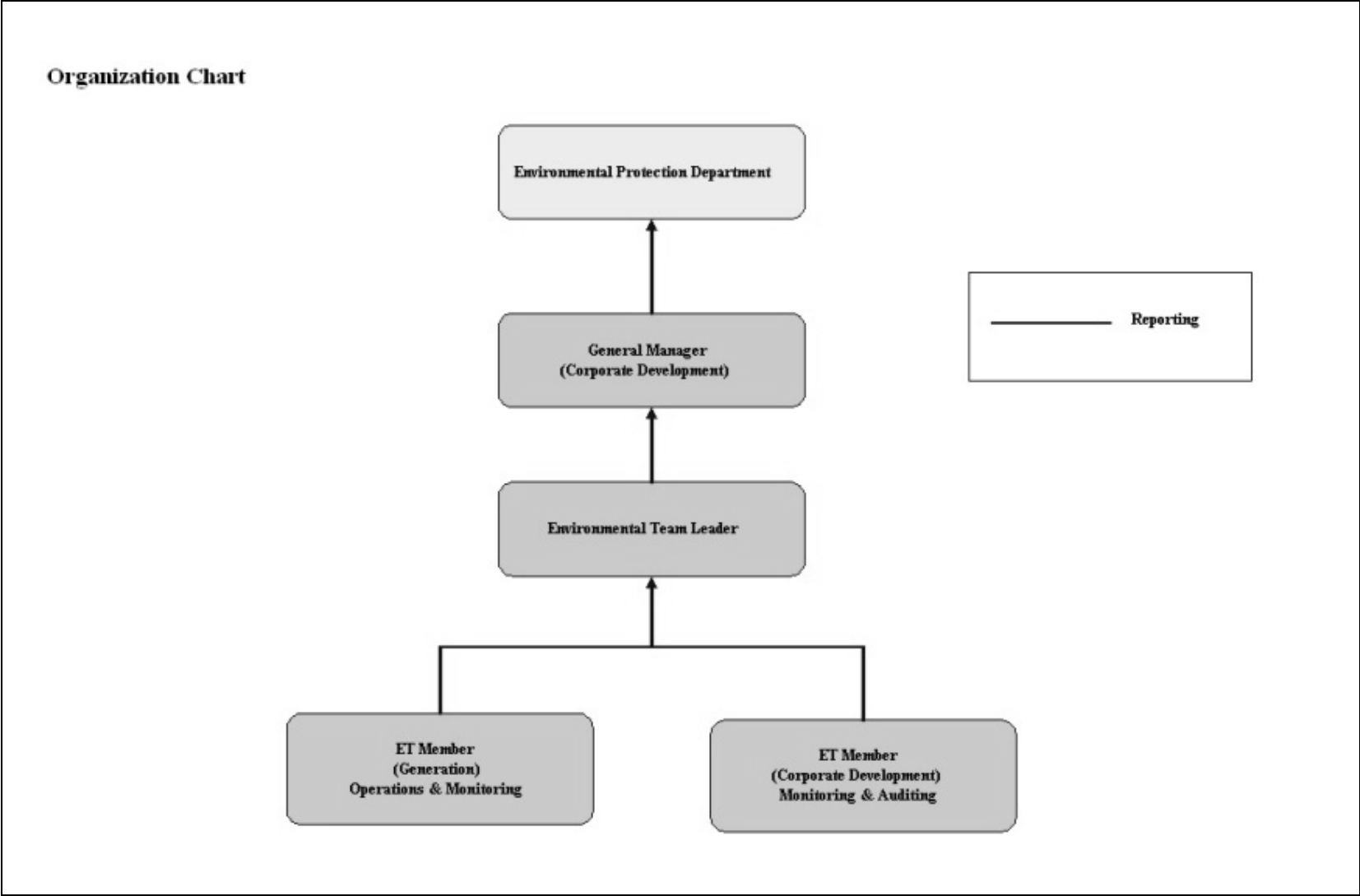


Figure 1.5 Organization Structure at Operational Phase of the Projects

## 2. AIR QUALITY

### 2.1 Monitoring Requirements

Since the Projects 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 specified 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 boilers L2, L4 & L5	Particulate	Once / year
	Particulate (Opacity)	Continuous
	SO <sub>2</sub>	Continuous
	NO <sub>x</sub> expressed as NO <sub>2</sub> (For L4 and L5 only)	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 was conducted during the operation of Units L2, L4 and 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.

The monitoring data for Cheung Chau ambient air monitoring station from November 2009 to September 2010 was revised in August 2011 upon quality verification by

Environmental Protection Department. HK Electric's Corporate Website (<http://www.hkelectric.com>) can be referred to for the revised monitoring data.

### 3. WATER QUALITY

#### 3.1 Monitoring Requirements

According to the EIA Report/ Project Profile for the Projects, the current monitoring programme for the Lamma Power Station can cover the Projects 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 was 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.	01/07/11-30/09/11	N.A.	0	
2	Continuous monitoring of opacity, NO <sub>x</sub> , SO <sub>2</sub> and CO <sub>2</sub> in the flue gas at the chimney stacks	01/07/11-30/09/11	0	0	
3	TSP monitoring at Lamma Power Station Boundary (ie East Gate and Reservoir).	01/07/11-30/09/11	0	0	
4	Ambient SO <sub>2</sub> & NO <sub>x</sub> monitoring at the Peak, Queen Mary Hospital, Victoria Road, Chung Hom Kok, Ap Lei Chau and	01/07/11-30/09/11	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	01/07/11-30/09/11	0	0	
2	Suspended Solids in WWTP Effluent	01/07/11-30/09/11	0	0	
3	Iron in WWTP Effluent	01/07/11-30/09/11	0	0	
4	Barium in WWTP Effluent	01/07/11-30/09/11	0	0	
5	Mercury in WWTP Effluent	01/07/11-30/09/11	0	0	
6	Cadmium in WWTP Effluent	01/07/11-30/09/11	0	0	
7	Cyanide in WWTP Effluent	01/07/11-30/09/11	0	0	
8	Total Phosphorus in WWTP Effluent	01/07/11-30/09/11	0	0	
9	Total Nitrogen in WWTP Effluent	01/07/11-30/09/11	0	0	

### *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

<b>Period</b>	<b>Amount of Gypsum Collected</b>	<b>Amount of Sludge Collected</b>
July 2011	10,039.3 MT	8.9 MT
August 2011	8,582.9 MT	5.7 MT
September 2011	7,211.3 MT	16.5 MT

#### 4.3 Status of Environmental Licensing and Permitting

All permits/licenses obtained as of September 2011 are summarised in Table 4.3.

Table 4.3 Summary of Environmental Licensing and Permit Status

<b>Description</b>	<b>Permit / Licence No.</b>	<b>Valid Period</b>		<b>Status</b>
		<b>From</b>	<b>To</b>	
Environmental Permit for Units L4/5 FGD Plants Retrofit	EP-248/2006	25/04/2006	-	Valid
Environmental Permit for Unit L2 FGD Plant Retrofit	EP-287/2007	02/10/2007	-	Valid
Specified Processes Licence issued under APCO	L-7-002(8)	01/01/2011	31/12/2012	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

During the reporting period, there were two (2) concerns on “dust” and “smoke” respectively as summarized in Table 4.4.

Table 4.4 Environmental Complaints / Enquiries Received

Case Reference / Date, Time Received / Date, Time Concerned	Descriptions / Actions Taken	Conclusion / Status
<p><i>Reference:</i> EC110700168</p> <p><i>Received:</i> 04/07/2011 a.m.</p> <p><i>Concerned:</i> A few days before</p>	<p>A District Council Member referred the concern from the residents at Ko Long about their houses being covered with a large amount of “dust”. They suspected that the “dust” was the coal particles from Lamma P/S. HK Electric had reviewed the relevant operation records and could not find any abnormality. HK Electric had also taken dust samples at the concerned villages under the witness of the concerned residents and the staff of the District Council Member’s office. After analysis, no coal particles was found in the dust samples. The District Council Member was advised of the findings and it was suggested that the regular leaf sampling exercises by HK Electric would be extended to cover also the concerned villages.</p>	<p>Nothing abnormal was identified. The District Council Member was advised of the findings and the relevant monitoring work would be enhanced.</p>
<p><i>Reference:</i> EC110900169</p> <p><i>Received:</i> 24/08/2011 a.m.</p> <p><i>Concerned:</i> “At night”</p>	<p>A District Council Member referred the concern from some Lamma residents about "plume of smoke coming from Lamma power station at night" and requested for more information on the matter. HK Electric had reviewed the relevant operation records and could not find any abnormality. It was believed that water vapour or condensed water droplets in the plume scattered</p>	<p>Nothing abnormal was identified. The District Council Member was advised of the findings and there was no further enquiry.</p>

	light under certain weather conditions and might create an illusion that black smokes were coming out from the chimneys but when in fact the emission was normal. HK Electric had advised the District Council Member of the findings. There was no further enquiry since then.	
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Table 4.5 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

Unit / Equipment	Period	Remark
L2	16/11/2011 to 07/12/2011	Unit overhaul
L5	08/12/2011 to 29/12/2011	Unit overhaul
L2 FGD	15/10/2011 to 31/12/2011	Rotor replacement
L5 FGD	28/11/2011 to 07/12/2011	Defect rectification and Absorber, Mist Eliminator and GGH washing

### 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 Units L2, L4 and 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 2011. 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. Two concerns on environmental issues against Lamma Power Station were received during the reporting period, for which nothing abnormal was identified for the Power Station. No prosecution was received for the Projects in the reporting period.

The environmental performance of the Projects 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 boilers L2, L4 and 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> (For L4 and L5 only)	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.
	Suspended Solids	Daily	30 mg/L	25	30	
	Iron	Monthly	4 mg/L	3.6	4	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.
	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	



## B.2 Unit L2, L4 and L5 Stack Monitoring at Lamma Power Station

### B.2.1 Monthly Summary of Stack NO<sub>x</sub> and SO<sub>2</sub> for Unit L5

Date	Daily Maximum		
	SO <sub>2</sub> concentration (mg/Nm <sup>3</sup> ) <sup>#</sup>	NO <sub>x</sub> concentration (mg/Nm <sup>3</sup> ) <sup>#</sup>	Opacity (%)
1/7/2011	36	302	16
2/7/2011	36	350	16
3/7/2011	9	334	14
4/7/2011	42	409	15
5/7/2011	23	367	15
6/7/2011	29	330	15
7/7/2011	71	374	15
8/7/2011	75	412	14
9/7/2011	89	282	19
10/7/2011	103	354	16
11/7/2011	79	317	15
12/7/2011	109	330	15
13/7/2011	84	371	15
14/7/2011	89	356	15
15/7/2011	47	345	14
16/7/2011	48	345	15
17/7/2011	46	321	14
18/7/2011	71	322	15
19/7/2011	60	283	14
20/7/2011	35	308	14
21/7/2011	73	346	14
22/7/2011	39	347	14
23/7/2011	30	390	14
24/7/2011	7	383	14
25/7/2011	34	319	15
26/7/2011	59	364	15
27/7/2011	56	353	14
28/7/2011	84	390	14
29/7/2011	64	306	13
30/7/2011	37	391	14
31/7/2011	37	408	14

Date	Daily Maximum		
	SO2 concentration (mg/Nm3) <sup>#</sup>	NOx concentration (mg/Nm3) <sup>#</sup>	Opacity (%)
1/8/2011	80	415	14
2/8/2011	89	447	14
3/8/2011	85	442	14
4/8/2011	94	442	14
5/8/2011	56	441	14
6/8/2011	42	403	14
7/8/2011	*	*	*
8/8/2011	FGD Bypassed	302	15
9/8/2011	*	*	*
10/8/2011	70	205	24
11/8/2011	113	290	14
12/8/2011	66	273	14
13/8/2011	55	242	15
14/8/2011	36	268	14
15/8/2011	100	224	14
16/8/2011	99	256	15
17/8/2011	105	273	15
18/8/2011	117	313	15
19/8/2011	74	292	15
20/8/2011	116	253	15
21/8/2011	96	322	14
22/8/2011	100	367	15
23/8/2011	77	288	15
24/8/2011	89	282	14
25/8/2011	78	269	14
26/8/2011	104	283	14
27/8/2011	101	272	14
28/8/2011	103	269	14
29/8/2011	84	309	14
30/8/2011	74	275	15
31/8/2011	85	309	14

Date	Daily Maximum		
	SO2 concentration (mg/Nm3) <sup>#</sup>	NOx concentration (mg/Nm3) <sup>#</sup>	Opacity (%)
1/9/2011	92	310	15
2/9/2011	121	302	15
3/9/2011	121	293	15
4/9/2011	66	304	16
5/9/2011	94	319	17
6/9/2011	59	272	20
7/9/2011	25	257	15
8/9/2011	50	281	15
9/9/2011	55	227	15
10/9/2011	*	*	*
11/9/2011	*	*	*
12/9/2011	*	*	*
13/9/2011	*	*	*
14/9/2011	59	200	14
15/9/2011	78	291	15
16/9/2011	76	307	15
17/9/2011	11	237	15
18/9/2011	29	184	14
19/9/2011	48	327	15
20/9/2011	61	249	15
21/9/2011	59	294	16
22/9/2011	28	266	15
23/9/2011	49	323	16
24/9/2011	31	319	16
25/9/2011	20	375	16
26/9/2011	38	383	19
27/9/2011	60	433	18
28/9/2011	136	363	20
29/9/2011	56	436	18
30/9/2011	63	360	20

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

\* - Unit L5 was not on load.

### B.2.2 Monthly Summary of Stack NO<sub>x</sub> and SO<sub>2</sub> for Unit L4

Date	Daily Maximum		
	SO <sub>2</sub> concentration (mg/Nm <sup>3</sup> ) <sup>#</sup>	NO <sub>x</sub> concentration (mg/Nm <sup>3</sup> ) <sup>#</sup>	Opacity (%)
1/7/2011	7	302	16
2/7/2011	17	338	18
3/7/2011	3	353	15
4/7/2011	15	397	21
5/7/2011	30	421	22
6/7/2011	14	380	19
7/7/2011	93	412	22
8/7/2011	105	413	23
9/7/2011	97	371	24
10/7/2011	84	425	21
11/7/2011	71	373	22
12/7/2011	106	484	19
13/7/2011	85	377	19
14/7/2011	105	392	16
15/7/2011	56	370	15
16/7/2011	60	313	15
17/7/2011	25	231	15
18/7/2011	58	275	18
19/7/2011	71	260	16
20/7/2011	55	328	14
21/7/2011	71	336	18
22/7/2011	50	220	17
23/7/2011	41	295	17
24/7/2011	8	287	16
25/7/2011	68	330	20
26/7/2011	56	373	22
27/7/2011	88	390	15
28/7/2011	48	387	16
29/7/2011	86	285	17
30/7/2011	65	301	17
31/7/2011	40	421	15

Date	Daily Maximum		
	SO2 concentration (mg/Nm3) <sup>#</sup>	NOx concentration (mg/Nm3) <sup>#</sup>	Opacity (%)
1/8/2011	81	462	17
2/8/2011	122	377	16
3/8/2011	77	457	17
4/8/2011	68	398	17
5/8/2011	76	412	16
6/8/2011	61	393	20
7/8/2011	68	410	20
8/8/2011	58	319	19
9/8/2011	53	284	17
10/8/2011	33	266	14
11/8/2011	72	341	18
12/8/2011	58	314	18
13/8/2011	49	344	15
14/8/2011	35	323	16
15/8/2011	89	360	21
16/8/2011	97	342	16
17/8/2011	76	321	19
18/8/2011	77	371	16
19/8/2011	101	404	17
20/8/2011	94	344	16
21/8/2011	80	387	16
22/8/2011	109	333	17
23/8/2011	90	368	17
24/8/2011	47	246	17
25/8/2011	35	314	17
26/8/2011	39	321	18
27/8/2011	140	343	19
28/8/2011	71	272	19
29/8/2011	55	326	21
30/8/2011	74	339	18
31/8/2011	60	371	19

Date	Daily Maximum		
	SO2 concentration (mg/Nm3) <sup>#</sup>	NOx concentration (mg/Nm3) <sup>#</sup>	Opacity (%)
1/9/2011	61	414	21
2/9/2011	71	391	20
3/9/2011	102	418	21
4/9/2011	87	449	23
5/9/2011	139	446	24
6/9/2011	110	322	22
7/9/2011	82	335	22
8/9/2011	92	336	21
9/9/2011	38	294	18
10/9/2011	37	337	18
11/9/2011	30	294	20
12/9/2011	36	396	20
13/9/2011	58	314	17
14/9/2011	45	308	17
15/9/2011	81	353	17
16/9/2011	53	332	19
17/9/2011	55	229	19
18/9/2011	48	188	18
19/9/2011	33	271	19
20/9/2011	36	241	20
21/9/2011	103	404	22
22/9/2011	24	361	17
23/9/2011	78	399	19
24/9/2011	30	338	23
25/9/2011	58	374	20
26/9/2011	49	345	24
27/9/2011	106	461	23
28/9/2011	53	481	32
29/9/2011	39	451	23
30/9/2011	43	455	24

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

### B.2.3 Monthly Summary of Stack SO2 for Unit L2

Date	Daily Maximum	
	SO2 concentration (mg/Nm3) #	Opacity (%)
1/7/2011	FGD Bypassed	29
2/7/2011	FGD Bypassed	21
3/7/2011	FGD Bypassed	21
4/7/2011	FGD Bypassed	25
5/7/2011	FGD Bypassed	29
6/7/2011	FGD Bypassed	21
7/7/2011	FGD Bypassed	19
8/7/2011	FGD Bypassed	22
9/7/2011	FGD Bypassed	25
10/7/2011	FGD Bypassed	23
11/7/2011	FGD Bypassed	22
12/7/2011	FGD Bypassed	23
13/7/2011	FGD Bypassed	23
14/7/2011	FGD Bypassed	26
15/7/2011	FGD Bypassed	27
16/7/2011	FGD Bypassed	18
17/7/2011	FGD Bypassed	*
18/7/2011	FGD Bypassed	17
19/7/2011	FGD Bypassed	*
20/7/2011	15	19
21/7/2011	*	*
22/7/2011	30	18
23/7/2011	11	19
24/7/2011	13	16
25/7/2011	13	17
26/7/2011	37	16
27/7/2011	67	16
28/7/2011	101	15
29/7/2011	73	16
30/7/2011	51	15
31/7/2011	69	15

Date	Daily Maximum	
	SO2 concentration (mg/Nm3) #	Opacity (%)
1/8/2011	99	15
2/8/2011	45	16
3/8/2011	FGD Bypassed	17
4/8/2011	FGD Bypassed	16
5/8/2011	FGD Bypassed	22
6/8/2011	FGD Bypassed	19
7/8/2011	35	18
8/8/2011	82	14
9/8/2011	62	14
10/8/2011	74	15
11/8/2011	70	15
12/8/2011	88	15
13/8/2011	*	*
14/8/2011	*	*
15/8/2011	131	14
16/8/2011	78	13
17/8/2011	88	13
18/8/2011	86	14
19/8/2011	96	15
20/8/2011	*	*
21/8/2011	*	*
22/8/2011	119	16
23/8/2011	90	14
24/8/2011	125	16
25/8/2011	121	15
26/8/2011	99	15
27/8/2011	107	15
28/8/2011	97	15
29/8/2011	83	15
30/8/2011	92	16
31/8/2011	78	15

Date	Daily Maximum	
	SO2 concentration (mg/Nm3) <sup>#</sup>	Opacity (%)
1/9/2011	93	16
2/9/2011	126	16
3/9/2011	101	15
4/9/2011	111	15
5/9/2011	102	14
6/9/2011	81	14
7/9/2011	132	14
8/9/2011	110	14
9/9/2011	57	14
10/9/2011	23	15
11/9/2011	18	16
12/9/2011	38	19
13/9/2011	51	14
14/9/2011	62	14
15/9/2011	72	14
16/9/2011	63	16
17/9/2011	86	15
18/9/2011	57	15
19/9/2011	46	17
20/9/2011	38	16
21/9/2011	28	16
22/9/2011	14	17
23/9/2011	*	*
24/9/2011	*	*
25/9/2011	*	*
26/9/2011	38	16
27/9/2011	64	15
28/9/2011	61	17
29/9/2011	45	15
30/9/2011	51	16

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

\* - Unit L2 was not on load.

#### **B.2.4 Summary of Annual Stack Particulate Sampling**

Unit	Date	Results (mg/Nm <sup>3</sup> )
L2	28/07/2011	10
L4	14/07/2011	7

Monitoring Equipment: Napp model 32 (Manual stack sampling system)

### **B.3 Ambient SO<sub>2</sub> and NO<sub>2</sub> monitoring Data at Southern District and Cheung Chau**

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

STATION : VICTORIA PEAK  
 POLLUTANT : SULPHUR DIOXIDE  
 MONTH: JULY  
 YEAR : 2011  
 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	6	7	6	11	8	9	13	10	6	8	9	8	9	11	12	15	11	11	10	****	10	9
2	10	9	10	9	8	7	8	8	10	7	7	7	8	4	4	2	3	4	3	4	7	5	****	4	7
3	3	3	3	4	3	4	2	5	4	5	3	6	9	11	5	2	1	1	3	0	1	5	****	4	4
4	3	5	5	7	6	5	5	5	6	14	25	39	12	6	12	22	18	5	6	8	5	5	****	6	10
5	7	5	5	7	9	6	6	4	6	5	5	4	3	2	2	12	33	13	7	9	5	3	****	4	7
6	3	3	3	6	3	3	5	7	5	7	6	4	3	3	8	4	18	2	1	5	6	3	****	6	5
7	4	3	4	4	4	2	4	7	7	4	2	2	2	2	9	2	2	2	2	2	2	3	****	5	3
8	3	1	3	3	4	5	5	2	3	5	1	2	1	1	1	0	5	4	3	2	2	3	****	4	3
9	3	3	3	2	3	2	5	4	7	3	1	3	1	1	0	0	1	1	1	3	6	4	****	9	3
10	7	18	16	22	10	9	17	15	22	39	32	32	21	7	3	6	5	4	4	2	3	4	****	3	13
11	4	7	19	8	10	18	18	18	14	19	21	11	9	8	18	16	16	11	10	6	8	17	****	10	13
12	5	4	8	8	5	6	4	2	3	1	6	4	7	2	4	2	6	3	1	1	0	0	****	0	4
13	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	****	1	0
14	1	0	1	1	1	2	3	3	4	3	4	3	2	1	2	1	0	1	0	0	0	1	****	2	2
15	3	2	3	4	3	4	3	2	2	5	10	6	2	2	4	2	7	2	2	1	1	2	****	1	3
16	1	1	1	1	2	1	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	****	0	1
17	0	1	1	0	1	1	1	2	0	1	2	3	5	3	3	3	3	3	3	3	4	2	****	6	2
18	5	9	11	12	11	8	6	8	9	6	3	10	10	7	5	4	3	4	3	3	3	3	****	6	7
19	5	3	4	5	4	5	4	3	4	9	6	5	0	0	1	1	11	16	6	4	8	2	****	5	5
20	5	2	2	3	3	3	2	2	1	2	2	2	2	3	5	2	5	4	2	3	3	3	****	1	3
21	1	1	2	2	1	1	2	2	3	4	3	2	1	1	6	9	15	4	7	1	1	1	****	2	3
22	3	2	2	2	1	2	2	2	1	2	2	1	1	1	0	0	0	0	0	0	0	1	****	2	1
23	1	3	4	3	2	2	2	2	3	5	6	10	6	8	2	12	4	1	1	2	1	4	****	3	4
24	2	3	5	4	5	5	2	4	2	3	11	3	1	0	0	0	0	1	0	0	0	0	****	1	2
25	0	0	1	0	1	0	0	0	2	4	7	8	9	9	6	11	7	2	1	1	2	3	****	2	3
26	3	3	5	5	4	4	6	5	3	5	18	9	6	2	1	0	0	0	0	1	3	2	****	2	4
27	1	2	2	2	2	3	3	3	1	2	1	1	0	0	0	0	0	0	1	2	2	2	****	3	1
28	2	3	2	4	14	6	11	10	9	6	5	3	2	1	2	0	0	0	0	0	0	0	****	0	3
29	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	2	2	2	2	2	1	****	2	1
30	2	2	2	1	1	1	1	2	1	2	1	1	0	0	0	0	0	0	0	1	2	2	****	1	1
31	1	1	1	2	2	1	1	3	3	2	1	1	1	1	1	1	1	1	1	2	2	3	****	4	2

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	ABOVE OBJECTIVE	
2	3	4	3	9	12	18	22	0	-	39	0	-	13
										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 800 OR 24-HR OBJECTIVE 350

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

STATION : VICTORIA PEAK  
 POLLUTANT : NITROGEN DIOXIDE  
 MONTH: JULY  
 YEAR : 2011  
 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	13	11	7	6	11	14	25	14	13	25	23	20	20	18	14	20	20	25	35	27	25	24	****	15	19
2	13	13	13	8	7	8	10	13	14	17	14	23	17	12	12	17	24	24	28	29	26	38	****	22	17
3	16	10	8	10	7	9	9	15	12	12	20	31	32	29	19	18	14	18	25	25	29	24	****	17	18
4	16	11	6	10	10	11	13	18	17	27	35	36	13	9	21	33	28	17	18	25	23	23	****	17	19
5	11	4	3	6	14	7	8	7	8	8	9	9	4	5	7	16	33	25	22	27	29	25	****	16	13
6	10	7	7	14	6	6	10	19	15	15	17	10	11	9	19	13	24	16	12	26	25	22	****	16	14
7	13	7	9	9	9	6	8	21	20	10	8	12	10	10	20	16	17	19	21	26	36	32	****	18	15
8	12	2	6	7	4	8	16	11	13	16	9	10	6	9	12	13	19	22	23	25	42	32	****	23	15
9	10	5	2	3	8	5	14	11	19	13	10	16	11	7	9	12	17	25	31	50	62	****	94	19	
10	61	72	64	65	31	28	38	36	50	61	65	99	70	36	25	28	47	34	34	24	25	30	****	24	45
11	12	25	53	27	33	53	49	51	50	63	80	63	82	76	87	70	57	38	38	28	26	51	****	44	50
12	28	23	68	59	51	10	11	16	16	26	48	42	43	23	20	34	73	95	55	43	23	39	****	14	37
13	10	9	8	1	3	8	10	14	19	19	17	12	12	13	13	13	9	10	14	23	15	17	****	25	13
14	16	10	7	8	5	6	6	23	23	35	39	33	25	30	29	42	29	28	48	15	0	8	****	5	20
15	6	14	13	13	7	26	7	9	14	27	42	42	33	21	27	33	41	27	30	16	20	24	****	12	22
16	12	12	6	11	21	7	6	14	13	18	19	27	20	12	11	13	12	13	23	13	14	20	****	11	14
17	7	5	5	3	2	6	3	7	9	9	14	30	27	17	15	12	18	24	32	32	28	34	****	21	16
18	62	55	48	47	35	20	10	15	30	22	10	27	35	22	24	25	14	25	16	14	19	26	****	29	27
19	27	7	6	6	5	8	8	14	22	29	28	23	10	5	10	13	41	57	32	26	33	18	****	23	20
20	24	6	8	10	12	14	12	15	15	26	17	18	16	16	30	26	38	26	19	26	18	20	****	13	18
21	10	1	6	30	5	0	4	8	21	22	13	11	6	5	28	42	38	30	34	33	27	24	****	24	18
22	14	6	7	6	3	7	11	10	15	17	14	13	11	16	19	19	20	21	15	25	30	32	****	18	15
23	13	16	14	7	6	4	6	13	12	15	22	29	22	31	21	34	20	22	22	38	36	49	****	34	21
24	15	11	14	11	5	4	3	14	12	18	31	29	16	14	10	11	10	15	25	23	20	26	****	42	16
25	14	10	5	5	3	1	2	4	9	17	24	39	46	36	47	69	65	53	41	47	48	39	****	23	28
26	14	12	13	12	8	11	12	18	13	15	22	19	21	19	18	10	13	11	16	22	18	10	****	11	15
27	2	1	1	1	2	5	4	5	8	8	6	11	12	7	4	4	4	3	7	13	12	13	****	17	7
28	11	5	19	25	51	38	40	47	52	48	51	39	28	22	22	26	30	42	39	25	10	12	****	11	30
29	7	5	2	1	1	1	2	3	3	3	3	2	2	2	4	6	6	14	11	12	11	6	****	10	5
30	12	8	5	3	3	4	2	4	6	7	10	8	5	6	5	6	7	11	11	18	14	22	****	20	8
31	17	13	11	10	12	7	8	15	22	14	11	10	11	9	5	6	8	16	11	20	20	6	****	7	12

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	50	99	DEVIATION	VALID DATA	1-HR	24-HR		
15	15	15	39	51	65	73	0	-	99	5	-	50	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 PEAK  
 POLLUTANT : SULPHUR DIOXIDE  
 MONTH: AUGUST  
 YEAR : 2011  
 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	6	5	6	5	9	12	14	39	34	21	12	9	7	8	16	14	12	12	6	6	7	****	86	15
2	13	4	5	4	3	2	3	3	2	5	3	7	3	3	5	7	18	9	11	6	4	3	****	2	5
3	2	2	2	2	3	3	4	3	2	6	13	10	4	1	1	2	3	25	23	13	5	29	****	14	7
4	5	3	4	1	3	2	3	2	1	1	2	9	10	10	13	11	5	2	1	5	3	2	****	3	4
5	3	3	4	5	4	4	3	7	9	11	8	9	6	5	8	9	8	13	10	11	7	8	****	5	7
6	7	6	5	6	5	6	4	3	3	3	5	5	2	1	3	23	24	12	4	4	3	3	****	5	6
7	4	5	9	7	9	7	5	5	3	3	4	10	6	2	2	2	4	3	2	4	4	4	****	4	5
8	5	4	5	3	3	4	3	4	3	3	3	4	3	11	5	16	5	6	8	6	4	4	****	7	5
9	7	7	3	6	3	3	10	2	4	3	5	2	2	4	5	6	4	2	1	1	1	1	****	1	4
10	1	4	3	3	2	2	2	2	2	2	1	1	2	1	5	3	6	3	2	4	6	****	4	3	
11	3	4	3	3	3	2	3	5	4	3	4	4	6	3	2	3	2	3	4	5	4	4	****	6	3
12	5	5	5	6	6	7	7	8	9	7	4	4	4	3	3	3	4	4	3	2	3	4	****	9	5
13	8	6	8	5	4	5	7	5	3	5	6	8	9	4	2	2	1	3	4	2	2	4	****	3	5
14	4	8	6	5	4	5	3	3	6	6	4	3	3	2	9	7	2	2	4	5	4	7	****	11	5
15	8	6	6	4	3	2	2	2	5	5	6	11	5	2	1	2	8	7	8	7	5	4	****	3	5
16	2	2	2	3	3	2	4	2	3	3	2	2	0	3	0	1	0	1	4	3	2	****	3	2	
17	5	4	5	2	2	3	2	2	3	1	1	0	0	1	0	2	5	2	2	6	5	****	3	3	
18	4	4	4	4	3	3	3	3	5	2	2	1	1	1	1	1	2	3	4	6	6	4	****	6	3
19	5	5	5	5	5	4	3	3	4	3	3	3	3	1	0	0	0	0	0	1	2	4	****	3	3
20	2	2	2	2	2	1	2	2	2	2	1	1	0	0	0	0	0	0	1	2	2	****	3	1	
21	2	2	2	2	2	2	3	3	9	13	31	23	3	1	0	1	1	0	1	1	1	1	****	4	5
22	4	8	8	2	3	3	3	3	4	10	11	10	5	6	6	9	11	13	13	13	12	13	****	10	8
23	9	5	4	1	3	8	4	4	4	6	6	26	4	9	19	16	3	1	3	3	2	3	****	5	6
24	4	3	5	5	5	5	8	6	5	4	1	1	1	5	30	15	33	8	2	4	10	5	****	2	7
25	2	5	5	6	24	43	50	35	36	43	40	25	18	11	8	11	9	13	7	6	9	30	****	9	19
26	5	6	24	23	12	6	1	1	5	5	5	5	14	13	14	4	14	24	19	33	28	33	****	32	14
27	24	19	12	9	12	25	21	11	9	11	8	6	8	8	6	5	6	15	29	21	14	17	****	14	13
28	20	20	39	23	8	8	8	8	7	4	14	16	9	9	13	21	21	23	27	31	30	26	****	24	18
29	13	14	13	16	39	42	52	48	35	18	14	10	11	7	7	15	19	16	14	10	5	7	****	11	19
30	18	24	32	35	25	33	44	50	57	47	35	37	30	30	38	40	41	18	13	10	6	7	****	16	30
31	22	19	23	43	41	36	27	34	45	45	39	42	29	24	24	26	20	16	8	7	9	15	****	21	27

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	ABOVE OBJECTIVE	1-HR	24-HR
5	5	5	23	33	42	45	0	- 86	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 : VICTORIA PEAK  
 POLLUTANT : NITROGEN DIOXIDE  
 MONTH: AUGUST  
 YEAR : 2011  
 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	29	36	22	20	22	37	35	32	35	37	35	31	21	19	28	39	37	44	49	47	53	33	****	63	35
2	41	7	6	3	2	2	3	6	10	14	10	18	16	16	19	25	36	28	25	26	30	28	****	12	17
3	7	3	2	4	2	5	9	10	7	14	22	24	22	15	14	14	18	30	35	28	26	32	****	26	16
4	15	7	7	1	5	6	7	9	8	11	16	28	32	38	45	48	25	23	29	40	51	41	****	31	23
5	20	12	10	10	5	8	12	23	22	25	23	22	28	29	31	27	33	39	44	44	55	****	32	25	
6	24	12	9	11	4	4	3	6	7	10	12	22	13	10	16	41	30	24	28	27	28	****	25	18	
7	10	8	12	8	14	6	3	8	5	6	15	44	23	18	15	13	20	25	29	30	24	37	****	19	17
8	13	6	9	3	2	5	3	8	13	10	10	15	15	28	18	28	23	27	31	29	29	30	****	24	16
9	18	16	5	10	6	5	26	19	19	11	26	23	18	24	20	35	24	18	13	15	21	15	****	16	18
10	15	13	9	12	8	6	10	15	22	26	24	18	19	29	16	35	21	31	25	18	19	31	****	19	19
11	10	6	3	4	7	2	5	13	16	16	13	15	18	14	16	18	13	18	24	26	25	21	****	21	14
12	13	12	7	7	6	11	12	15	20	14	16	19	17	16	19	15	23	26	23	38	28	28	****	35	18
13	24	16	12	11	9	8	12	11	11	16	24	29	24	28	28	27	28	30	33	32	40	****	30	22	
14	23	21	14	11	12	13	9	9	12	14	19	18	19	16	27	24	16	21	26	41	38	38	****	33	20
15	23	14	9	5	2	3	3	10	13	14	21	27	18	15	12	24	38	43	41	50	44	40	****	18	21
16	14	10	5	7	8	5	11	15	10	12	11	9	9	8	28	27	24	21	27	35	40	37	****	29	17
17	22	15	16	4	4	5	8	8	10	8	12	14	17	14	14	22	23	20	16	23	38	37	****	27	16
18	19	14	15	11	4	5	8	6	12	8	9	10	9	11	14	14	14	21	40	46	27	10	****	21	15
19	25	14	10	8	6	7	7	11	15	12	10	14	15	10	10	9	9	11	18	27	34	****	27	14	
20	14	13	6	4	5	1	10	19	13	16	17	18	13	11	11	8	9	12	11	19	14	10	****	19	12
21	12	4	4	2	0	0	10	20	28	34	44	43	13	16	18	21	24	30	39	34	27	16	****	25	20
22	21	15	17	5	3	10	8	10	14	25	23	23	20	20	26	34	36	40	45	51	49	46	****	32	25
23	28	20	11	5	2	15	8	9	7	10	12	20	9	12	24	26	14	15	21	28	29	29	****	21	16
24	12	6	7	5	6	6	14	15	14	9	8	12	9	14	30	27	32	14	16	27	52	32	****	17	17
25	13	15	12	19	72	88	85	85	84	104	122	107	86	72	73	70	58	127	154	138	179	178	****	124	90
26	84	88	108	97	68	28	12	35	46	47	42	53	74	52	55	43	48	65	115	104	175	183	****	145	77
27	70	39	14	11	21	43	73	62	57	67	72	70	62	49	61	62	60	46	70	88	60	73	****	22	54
28	187	151	175	102	54	26	21	33	37	30	50	62	44	43	46	52	55	70	87	82	65	65	****	70	70
29	48	43	29	28	39	51	50	36	36	36	45	43	36	34	34	39	48	37	44	40	21	26	****	28	38
30	37	43	51	54	34	37	53	61	66	66	63	58	48	48	53	52	57	46	39	30	31	19	****	30	47
31	31	21	36	48	61	60	27	36	46	62	61	74	56	42	37	57	36	55	83	66	64	66	****	72	52

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	ABOVE OBJECTIVE	1-HR	24-HR
20	21	21	58	73	108	148	0	- 187	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 PEAK  
 POLLUTANT : SULPHUR DIOXIDE  
 MONTH: SEPTEMBER  
 YEAR : 2011  
 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	16	14	18	16	18	18	27	29	32	37	45	46	42	35	25	11	12	30	32	19	15	28	****	19	25
2	24	27	32	26	16	21	19	13	17	46	15	33	35	23	18	5	13	11	2	6	4	3	****	2	18
3	2	1	2	3	9	10	4	4	2	15	5	3	2	9	11	5	1	1	2	0	1	3	****	5	4
4	3	1	1	2	2	2	0	0	1	19	34	17	4	7	2	7	6	3	3	2	6	5	****	5	6
5	4	3	3	5	11	25	22	9	5	9	14	11	9	10	5	4	9	7	5	6	5	3	****	3	8
6	8	6	4	5	5	3	4	9	4	3	3	2	0	0	0	0	0	0	2	2	5	3	****	6	3
7	4	4	4	4	6	2	1	4	3	2	3	3	1	0	0	0	0	1	1	1	2	2	****	2	2
8	2	2	2	3	2	2	2	3	4	2	2	2	1	1	1	0	1	1	2	3	3	5	****	3	2
9	4	5	3	4	4	5	5	5	3	2	4	3	3	3	1	1	3	4	3	2	3	3	****	3	3
10	2	3	3	3	3	4	5	5	6	5	5	4	4	5	4	2	3	2	3	4	4	3	****	3	4
11	3	5	1	3	3	3	4	4	4	3	3	2	3	1	2	2	2	3	3	3	3	4	****	2	3
12	3	2	2	3	2	1	2	2	2	2	1	1	1	0	0	0	0	0	1	2	3	3	****	1	2
13	1	2	1	1	1	1	0	1	2	1	1	1	1	0	0	0	1	0	1	1	3	4	****	2	1
14	1	3	3	3	2	1	2	2	3	3	3	2	1	1	1	2	2	5	6	3	5	4	****	7	3
15	4	4	4	1	1	2	3	4	5	5	5	5	5	3	3	3	2	3	3	3	3	3	****	4	3
16	3	3	2	3	3	3	3	3	5	4	4	2	3	3	2	2	2	3	3	3	3	3	****	3	3
17	2	1	2	2	1	3	3	4	4	5	5	2	2	2	1	1	1	1	2	3	3	3	****	3	2
18	4	2	2	2	3	2	2	2	2	4	4	5	6	4	4	5	3	3	4	6	6	7	****	3	4
19	3	4	4	3	3	2	3	3	4	3	3	2	1	1	0	0	0	1	2	2	1	2	****	2	2
20	3	3	3	2	2	2	2	9	23	24	13	8	3	3	3	8	6	10	10	9	12	14	****	4	8
21	5	10	11	8	6	4	4	3	8	7	6	5	4	4	5	4	4	5	5	6	6	6	****	7	6
22	7	10	8	9	8	8	9	8	9	9	8	7	8	6	6	6	7	7	9	8	9	8	****	8	8
23	9	9	8	7	8	8	6	7	6	7	9	6	6	5	6	6	6	7	6	7	7	6	****	6	7
24	4	6	7	8	7	8	8	8	9	8	7	7	4	4	5	4	3	3	4	6	4	5	****	6	6
25	5	7	7	6	6	5	6	7	8	7	7	6	3	3	2	0	3	1	1	2	2	2	****	2	4
26	4	4	4	5	6	6	6	9	8	6	4	4	4	4	M	6	4	4	3	3	4	3	****	4	5
27	6	5	5	4	5	4	5	6	7	8	8	6	5	5	5	4	6	10	14	9	8	8	****	7	7
28	7	7	8	8	10	10	9	9	12	11	11	8	6	4	5	<-- D -->	6	6	6	7	5	****	6	8	
29	5	5	5	5	4	3	4	4	3	3	3	2	1	3	3	1	2	2	2	2	2	1	****	2	3
30	1	2	1	2	1	1	1	0	2	1	1	1	1	1	0	0	0	0	1	1	1	2	****	0	1

MONTHLY STATISTICS:											NO. OF TIMES						
GEOM	ARITH		<-----PERCENTILE----->					<-----RANGE----->				STD GEOM	PERCENT	ABOVE OBJECTIVE			
MEAN	MEDIAN	MEAN	50	90	95	98	99	1-HR	24-HR	24-HR	DEVIATION	VALID DATA	1-HR	24-HR			
3	4	5	4	10	17	29	35	0	-	46	1	-	25	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  
POLLUTANT : NITROGEN DIOXIDE  
MONTH: SEPTEMBER  
YEAR : 2011  
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	58	37	41	57	45	30	58	52	50	42	44	43	63	67	61	65	69	91	73	50	40	60	****	53	54
2	63	62	60	44	20	26	26	21	36	55	25	48	57	37	40	38	56	39	20	16	9	4	****	14	35
3	6	6	4	3	17	21	14	30	15	39	78	51	51	30	47	41	48	70	79	40	13	8	****	19	32
4	12	6	7	4	5	6	3	14	46	59	65	67	42	66	58	50	45	46	44	28	17	21	****	29	32
5	23	14	11	13	43	64	60	49	37	47	47	38	40	40	31	39	39	36	37	41	52	25	****	24	37
6	27	14	10	11	9	5	12	24	20	22	19	7	8	14	10	11	15	14	18	13	11	8	****	13	14
7	13	7	4	2	6	7	6	15	20	22	17	14	14	12	12	15	15	23	23	14	10	10	****	13	13
8	7	5	4	5	3	2	8	14	15	20	19	19	14	11	8	13	10	6	9	6	5	8	****	12	10
9	4	5	3	2	3	4	10	16	22	22	20	16	15	11	11	15	15	20	20	12	13	12	****	17	12
10	8	6	5	6	9	10	13	21	29	30	34	24	18	11	15	14	12	9	10	10	13	20	****	17	15
11	8	12	5	7	7	5	14	20	24	18	17	13	16	12	10	11	13	15	14	12	11	15	****	11	13
12	12	6	3	4	5	3	8	16	24	27	26	19	22	14	14	11	11	6	11	14	13	17	****	22	13
13	10	11	8	8	13	9	15	18	19	10	13	12	10	9	5	7	17	12	10	13	20	14	****	18	12
14	11	12	10	8	9	9	10	23	15	14	25	13	11	8	7	10	8	16	14	11	10	9	****	19	12
15	8	5	5	4	3	2	9	18	26	26	31	18	18	18	21	16	11	9	11	6	12	8	****	12	13
16	3	2	2	5	5	8	16	26	37	39	20	29	21	12	11	10	10	13	9	16	17	24	****	19	15
17	9	4	5	8	8	12	17	22	27	29	29	31	14	19	20	16	17	16	16	23	20	18	****	14	17
18	12	8	6	8	6	5	10	12	18	26	17	24	20	15	9	12	10	13	25	19	10	13	****	9	13
19	8	5	4	7	3	2	6	22	41	28	20	16	14	11	11	13	18	27	28	47	55	61	****	37	21
20	44	44	33	26	19	26	26	49	68	74	72	68	47	44	47	76	80	95	111	101	86	81	****	45	59
21	45	56	55	56	44	22	35	52	62	66	73	61	53	40	51	60	64	49	61	65	64	63	****	40	54
22	43	44	31	26	17	16	24	48	53	47	48	45	42	38	48	52	47	62	69	66	57	46	****	38	44
23	31	21	14	14	20	18	18	28	35	43	44	42	44	40	45	50	54	64	55	67	57	44	****	32	38
24	29	18	15	17	16	16	21	45	50	61	61	63	49	38	45	45	39	42	41	41	35	38	****	45	38
25	31	23	16	12	17	13	14	21	23	27	41	30	30	29	30	28	35	34	27	39	26	20	****	12	25
26	9	7	7	7	10	11	17	25	31	20	20	21	21	22	M	33	29	27	33	21	35	27	****	22	21
27	22	9	8	13	10	12	17	38	51	63	51	36	36	32	29	41	38	43	67	97	83	41	****	34	38
28	29	26	17	51	46	29	28	41	52	60	53	54	49	39	32	<-- D -->	46	42	28	21	13	****	11	37	
29	5	2	1	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	****	1	1
30	0	0	0	0	0	0	0	1	7	6	6	4	6	3	5	4	7	2	3	3	4	3	****	2	3

MONTHLY STATISTICS:										NO. OF TIMES					
GEOM	ARITH		<-----PERCENTILE----->					<-----RANGE----->			STD GEOM	PERCENT	ABOVE OBJECTIVE		
MEAN	MEDIAN	MEAN	50	90	95	98	99	1-HR	24-HR	DEVIATION	VALID DATA	1-HR	24-HR		
16	18	25	18	55	64	73	82	0	- 111	1	- 59	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 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 : 2011  
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	0	0	0	0	1	3	7	2	2	7	13	12	18	13	12	15	20	20	15	24	19	23	****	14	10
2	12	17	12	11	12	11	11	13	15	20	18	15	14	16	18	21	19	20	22	22	18	17	****	17	16
3	14	12	22	22	23	18	22	17	18	19	19	19	18	19	20	20	22	28	31	33	30	27	****	22	21
4	20	21	20	15	21	18	15	22	21	22	21	22	18	21	24	25	24	27	20	27	33	24	****	26	22
5	22	16	20	22	19	31	27	17	18	25	19	18	14	20	22	26	28	33	33	32	30	19	****	27	23
6	19	19	18	13	18	11	15	16	9	17	16	17	18	18	20	22	23	26	26	31	30	29	****	24	20
7	12	8	11	10	10	8	11	18	21	16	12	13	18	19	<----- D ----->	25	18	23	20	24	****	24	16		
8	18	9	4	7	2	3	10	17	21	13	6	11	7	20	17	25	29	35	33	34	25	21	****	15	17
9	0	6	1	4	3	4	6	23	22	22	14	11	17	15	18	19	30	35	30	15	53	80	****	109	23
10	102	87	62	73	76	58	55	45	53	74	107	140	109	58	42	47	55	53	46	24	9	12	****	10	61
11	15	27	61	32	17	25	60	59	65	61	57	13	15	40	53	33	37	30	10	10	11	14	****	73	35
12	38	16	16	5	0	0	0	4	8	16	28	21	9	47	55	50	26	21	11	2	0	0	****	0	16
13	0	0	0	0	0	0	0	1	1	12	15	21	24	31	48	26	22	28	10	2	6	7	****	4	11
14	0	0	0	0	0	0	0	0	0	0	5	6	14	4	13	18	31	34	15	0	0	1	****	0	6
15	0	0	1	0	0	0	5	9	7	13	23	23	18	16	19	16	21	19	12	13	14	10	****	3	11
16	8	3	1	0	3	1	0	3	1	1	5	9	5	2	1	4	6	8	2	10	7	6	****	18	5
17	13	13	3	5	6	6	7	0	4	11	15	25	26	21	18	17	19	25	30	14	11	3	****	0	13
18	1	34	47	51	35	16	15	20	16	1	36	46	44	33	34	29	14	24	18	8	8	25	****	39	26
19	17	24	20	20	8	7	6	18	34	34	27	20	5	12	36	34	40	20	15	18	19	23	****	13	20
20	15	11	5	1	5	19	35	20	37	31	19	14	26	30	27	26	25	25	11	24	15	13	****	16	20
21	23	7	4	3	8	16	1	13	22	11	14	14	20	22	12	15	14	21	20	16	37	13	****	19	15
22	12	3	1	3	4	3	4	14	8	11	11	3	6	6	4	8	16	24	18	8	3	6	****	13	8
23	7	1	6	3	2	4	13	12	10	11	12	22	15	13	16	22	35	41	46	36	22	24	****	22	17
24	13	17	28	16	1	0	6	14	25	23	17	17	16	21	22	28	33	41	32	24	15	8	****	30	20
25	25	10	10	24	10	4	0	11	19	13	19	18	24	17	19	27	34	32	40	31	31	26	****	18	20
26	3	5	4	2	1	3	8	10	11	11	13	14	3	3	8	11	21	20	28	28	18	8	****	8	10
27	0	0	0	0	1	1	0	0	2	2	1	2	0	2	1	7	12	15	12	1	2	0	****	4	3
28	0	0	0	0	3	1	22	27	23	15	7	1	1	1	3	3	1	0	0	0	0	0	****	0	5
29	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	7	2	13	10	11	11	5	****	1	3
30	0	0	0	0	0	0	0	2	0	3	2	3	3	6	3	13	12	14	11	2	3	4	****	2	4
31	0	0	0	0	0	0	0	2	3	5	9	6	5	7	6	14	28	30	33	6	7	8	****	12	8

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	
11	14	14	33	46	61	75	0 - 140	3 - 61	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 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: AUGUST YEAR : 2011  
 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	17	21	15	14	15	16	16	109	84	50	66	41	31	23	35	17	8	5	2	13	17	****	1	27
2	4	28	23	13	2	13	9	0	7	35	20	5	1	6	2	1	2	2	4	9	5	1	****	10	9
3	3	0	8	15	14	17	10	8	3	3	11	19	25	14	13	4	0	6	7	7	7	2	****	8	9
4	14	21	1	5	3	12	7	9	6	0	2	15	20	4	3	1	3	1	9	6	11	10	****	17	8
5	10	7	2	8	1	13	12	14	14	14	16	12	0	10	1	0	1	6	1	5	2	8	****	8	7
6	26	23	18	5	2	2	1	0	0	7	21	16	8	2	3	0	1	0	3	6	2	6	****	6	7
7	3	3	0	2	9	10	7	7	16	18	14	2	0	1	0	0	0	1	3	4	4	0	****	1	5
8	1	0	0	1	0	0	0	1	4	2	0	1	0	0	0	<--- M --->	0	7	13	8	4	****	12	3	
9	15	8	7	10	5	4	5	5	10	14	10	6	4	11	12	4	1	1	6	1	0	0	****	4	6
10	0	1	1	1	4	1	0	2	4	2	2	2	1	4	5	1	0	0	4	4	4	5	****	4	2
11	3	1	0	0	2	0	0	2	2	5	1	5	7	4	4	2	2	4	2	3	1	1	****	3	2
12	0	1	0	1	3	3	3	3	5	5	<--- D --->	3	2	0	0	2	3	0	0	0	2	****	2	2	
13	0	0	1	1	0	0	3	4	8	8	5	3	4	2	1	3	7	3	3	3	6	6	****	5	3
14	4	8	7	8	8	5	8	11	11	16	10	10	5	6	7	5	3	3	4	8	10	7	****	15	8
15	13	8	13	12	8	9	14	16	14	13	9	3	7	9	6	3	4	5	6	7	6	20	****	15	10
16	19	11	26	21	21	11	17	9	16	16	9	16	12	4	1	2	2	1	3	5	7	18	****	7	11
17	1	4	4	0	1	1	1	5	3	1	3	1	2	1	1	3	6	3	3	8	5	5	****	5	3
18	5	4	5	3	1	2	3	2	5	4	2	2	2	3	1	4	3	5	4	3	5	6	****	3	3
19	3	5	4	3	0	1	2	4	1	1	4	4	3	3	3	3	1	2	3	5	6	3	****	4	3
20	4	2	1	2	2	2	2	3	5	5	2	0	1	1	1	0	0	5	7	6	8	****	7	3	
21	6	5	5	3	4	6	4	21	23	18	19	2	2	2	1	0	0	2	4	13	10	****	8	7	
22	5	3	4	12	6	5	0	2	2	2	0	1	3	6	7	12	14	7	12	11	11	8	****	6	6
23	6	7	8	4	2	4	6	2	11	4	10	4	3	2	4	4	4	1	1	1	4	5	****	1	4
24	3	3	3	2	1	2	15	6	7	8	9	2	3	4	3	4	3	2	6	7	12	20	****	11	6
25	9	18	28	20	16	26	24	12	16	12	43	21	16	11	10	10	25	19	11	8	11	8	****	10	17
26	8	8	5	10	8	2	0	1	3	7	5	3	2	4	3	3	4	18	24	8	8	15	****	14	7
27	13	11	12	20	9	14	21	12	11	6	31	30	19	13	13	19	8	8	14	19	18	22	****	21	16
28	18	13	8	6	6	6	6	7	27	48	36	20	49	25	27	41	39	37	39	36	60	55	****	70	30
29	35	23	17	22	21	47	59	46	47	52	18	19	45	26	20	29	27	28	31	19	14	10	****	18	29
30	21	24	64	80	59	46	47	61	71	60	58	51	51	42	48	34	32	25	18	16	14	10	****	25	42
31	22	22	26	47	64	40	29	27	31	37	48	55	50	59	47	37	32	15	9	7	6	48	****	35	34

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	ABOVE OBJECTIVE	1-HR	24-HR	
5	6	6	26	43	57	63	0 - 109	2 - 42	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 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 : 2011  
 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	0	3	11	2	6	0	1	11	24	24	20	24	21	20	17	M	35	26	19	12	24	36	****	5	15
2	9	42	36	19	8	25	24	16	18	30	26	23	15	17	15	17	20	19	21	20	21	11	****	21	21
3	10	8	19	25	25	22	20	15	9	9	20	29	29	32	32	22	18	21	27	20	22	12	****	13	20
4	24	30	11	17	13	24	16	13	13	11	18	29	27	21	27	21	22	20	27	29	45	31	****	28	22
5	30	22	15	19	10	27	24	24	25	23	22	18	11	20	12	13	16	22	21	24	15	24	****	20	20
6	36	32	28	17	10	9	9	14	13	19	25	26	28	29	29	23	23	24	27	31	24	21	****	16	22
7	15	13	11	13	23	24	19	19	22	23	23	17	13	19	17	13	11	16	24	18	19	8	****	7	17
8	3	1	3	3	2	2	9	18	24	22	12	12	4	14	13	<--- M --->	11	12	29	24	9	****	12	11	
9	13	3	0	2	0	0	0	4	11	3	<--- M --->	23	23	21	23	20	17	17	17	20	13	****	9	11	
10	10	8	8	5	7	7	10	20	19	16	14	13	11	19	14	14	16	21	23	23	21	17	****	11	14
11	14	8	7	5	9	8	8	12	15	15	14	15	16	11	12	13	16	15	17	19	19	19	****	14	13
12	14	14	6	5	14	11	17	21	19	16	<--- D --->	16	14	14	14	13	18	15	16	18	17	****	16	15	
13	13	9	5	7	6	7	13	9	14	13	12	11	16	13	13	14	20	16	16	20	18	18	****	17	13
14	13	12	12	9	14	12	13	15	13	14	14	16	15	17	19	17	18	20	23	20	23	24	****	29	17
15	23	14	23	20	13	11	14	19	15	12	13	11	13	13	14	12	14	17	24	26	20	25	****	23	17
16	31	18	28	26	24	16	20	11	16	17	15	22	17	16	11	11	15	13	23	19	21	22	****	18	19
17	10	11	7	3	7	10	9	14	11	10	12	10	10	9	12	13	11	11	12	21	21	16	****	11	11
18	13	11	12	9	6	9	8	11	16	15	12	10	10	11	9	13	16	24	21	14	13	15	****	8	12
19	10	9	9	6	4	6	6	10	10	10	11	9	8	7	11	11	12	12	9	7	6	6	****	8	8
20	9	5	3	5	4	3	6	8	9	12	13	8	8	11	10	12	13	17	25	26	21	15	****	16	11
21	9	9	9	6	5	5	5	20	24	20	22	10	14	10	8	13	14	18	27	26	18	14	****	19	14
22	12	8	9	15	8	4	5	10	10	10	7	7	8	13	14	22	22	20	30	29	26	22	****	20	14
23	19	16	16	10	9	10	11	8	10	9	15	10	10	10	12	13	13	12	17	12	14	16	****	12	12
24	12	7	8	5	6	6	18	10	10	8	11	10	13	12	12	13	14	14	13	14	31	48	****	26	14
25	17	31	41	38	46	67	61	47	49	50	82	62	45	30	54	95	120	116	67	75	52	16	****	14	55
26	11	9	14	39	23	8	12	22	18	19	16	19	17	16	13	14	12	36	39	22	26	24	****	25	20
27	21	15	14	23	17	29	52	39	21	32	71	75	61	47	36	54	47	43	27	23	24	27	****	31	36
28	21	21	24	20	12	14	23	30	50	60	69	70	108	62	71	83	68	83	109	99	130	94	****	132	63
29	102	79	57	52	38	57	62	49	61	70	56	59	73	40	46	58	48	56	60	40	36	30	****	32	55
30	37	49	71	89	86	71	66	64	68	70	86	72	59	50	43	39	65	34	31	17	17	16	****	35	54
31	30	30	33	52	80	65	58	52	52	60	77	81	73	81	62	55	55	30	30	28	52	87	****	94	57

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
17	16	23	16	52	69	85	97	0	- 132	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 : CHUNG HOM KOK ZONE SUBSTATION MONTH: SEPTEMBER YEAR : 2011  
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	30	27	27	20	35	39	41	71	45	40	44	64	57	57	34	21	16	20	44	32	40	56	****	57	40
2	32	35	40	35	25	33	30	23	72	82	67	45	30	18	17	19	20	13	16	11	6	8	****	2	29
3	3	3	2	2	4	7	7	5	3	0	0	2	5	0	1	1	3	1	1	3	7	****	6	3	
4	5	3	1	6	1	1	0	0	1	2	0	2	2	1	0	4	10	7	6	7	3	4	****	7	3
5	8	10	12	8	2	2	3	8	4	18	44	53	14	16	23	15	18	32	19	11	5	4	****	7	15
6	9	7	5	7	7	4	6	7	6	3	2	3	3	0	3	5	2	3	3	5	3	2	****	2	4
7	2	2	1	4	5	4	1	3	1	1	6	3	0	3	2	2	2	6	2	3	2	2	****	2	3
8	5	0	1	1	3	2	0	3	1	2	2	0	0	1	2	1	1	0	1	1	1	0	****	2	1
9	1	0	0	1	2	2	2	2	1	2	1	1	1	1	2	1	1	1	3	1	0	3	****	2	1
10	0	0	0	0	3	2	3	4	6	7	4	5	6	4	2	1	1	1	5	4	4	0	****	4	3
11	1	2	1	1	3	1	1	1	2	3	0	0	0	3	1	2	2	2	4	1	4	2	****	3	2
12	0	1	0	3	3	1	1	2	3	3	2	3	2	4	1	1	0	3	7	1	6	5	****	4	2
13	3	4	1	2	2	0	0	1	4	3	4	4	5	4	3	3	5	5	4	5	5	****	2	3	
14	3	4	6	4	2	1	1	3	5	1	1	2	4	3	0	1	5	6	4	1	2	5	****	1	3
15	0	1	1	0	0	0	0	2	2	1	0	2	4	3	4	5	5	3	0	0	1	1	****	2	2
16	1	0	1	0	0	0	1	3	1	1	1	2	4	4	1	5	4	3	3	0	1	3	****	1	2
17	0	2	3	0	0	0	2	4	3	4	1	2	2	0	2	2	4	0	0	1	7	4	****	1	2
18	3	2	2	1	0	0	2	1	2	3	3	6	4	4	5	5	6	3	3	5	7	7	****	5	4
19	2	3	5	2	2	3	3	5	3	4	3	5	4	1	1	2	8	7	4	1	2	2	****	3	3
20	3	3	3	1	0	1	3	2	2	0	1	4	4	3	3	5	5	4	3	4	4	5	****	2	3
21	2	4	5	2	2	1	2	3	2	1	1	2	2	1	1	3	2	2	4	4	6	****	4	3	
22	3	5	7	5	5	5	5	5	4	5	3	4	5	4	3	3	3	4	3	3	3	5	****	5	4
23	8	7	9	7	6	5	4	7	5	6	4	2	2	2	5	4	5	6	8	5	4	****	4	5	
24	5	5	8	8	8	8	9	10	11	8	6	5	5	7	5	3	3	3	5	5	5	5	****	5	6
25	8	8	7	8	7	5	8	8	8	7	7	5	3	3	2	2	2	3	4	3	0	0	****	4	5
26	2	3	3	4	7	6	6	9	8	9	6	5	5	8	9	6	4	2	3	3	1	4	****	5	5
27	4	3	3	5	7	6	5	5	7	8	8	8	7	8	7	6	5	6	8	9	10	10	****	5	6
28	3	3	4	5	6	6	8	7	5	6	4	4	6	6	5	3	3	4	6	2	1	0	****	2	4
29	0	0	0	1	2	1	1	1	1	3	1	1	0	2	2	0	0	1	2	1	1	1	****	4	1
30	3	2	3	3	4	2	0	1	3	4	4	2	2	3	4	3	2	2	2	3	1	1	****	3	2

MONTHLY STATISTICS:		<-----PERCENTILE----->							<-----RANGE----->				STD GEOM	PERCENT	NO. OF TIMES	
GEOM	ARITH	50	90	95	98	99		1-HR		24-HR		DEVIATION	VALID DATA	1-HR	24-HR	
3	6	3	8	23	44	57		0	-	82		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 : VICTORIA ROAD SUBSTATION  
 POLLUTANT : SULPHUR DIOXIDE  
 MONTH: JULY  
 YEAR : 2011  
 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	0	0	1	2	6	4	3	9	3	2	2	2	0	1	2	3	10	4	4	0	****	0	3
2	0	1	4	4	4	4	4	2	10	7	2	1	0	0	0	0	1	2	1	5	9	7	****	4	3
3	2	3	3	3	1	3	4	2	3	3	3	1	5	1	1	0	0	1	1	2	2	3	****	4	2
4	5	3	2	4	2	2	4	3	3	1	11	9	1	5	6	7	0	1	1	4	1	1	****	6	3
5	3	0	0	2	6	1	3	2	2	3	5	3	1	3	1	1	14	8	4	3	2	0	****	1	3
6	3	1	3	4	0	2	5	6	5	2	1	1	2	1	11	11	2	3	2	9	6	3	****	5	4
7	5	0	2	1	0	0	3	5	2	3	0	0	4	0	2	3	4	2	1	0	2	2	****	7	2
8	1	2	2	0	1	2	2	0	2	4	1	2	2	1	2	1	2	4	2	0	1	1	****	1	2
9	0	0	0	0	0	0	2	5	5	0	0	2	0	0	0	0	0	0	0	0	2	0	****	3	1
10	8	12	0	1	3	2	11	15	15	23	41	35	19	4	1	1	0	0	0	0	0	0	****	0	8
11	0	0	1	1	0	3	6	7	8	20	7	4	6	10	27	4	3	0	0	0	0	1	****	0	5
12	0	0	0	0	1	4	10	33	2	0	2	0	0	0	0	2	1	0	0	0	0	0	****	0	2
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	****	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	3	3	0	0	0	****	0	1
15	0	6	7	1	0	0	0	0	0	0	4	4	22	4	7	7	7	7	5	0	1	3	****	0	4
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	****	0	0
17	0	0	0	0	0	0	0	0	0	1	3	5	0	0	0	0	0	0	1	0	0	0	****	0	0
18	2	16	16	16	9	4	6	11	4	0	2	4	6	2	6	0	0	2	0	0	0	3	****	1	5
19	1	0	0	0	0	1	0	9	28	14	5	7	0	0	0	1	39	13	3	2	2	2	****	4	6
20	4	1	0	0	0	0	0	0	2	0	1	1	0	0	2	0	1	0	2	2	2	0	****	1	1
21	1	0	0	0	0	0	0	1	3	2	2	0	0	0	3	1	4	5	5	0	3	3	****	5	2
22	6	3	1	3	0	1	3	3	2	3	1	1	1	1	0	3	1	0	0	0	0	0	****	1	2
23	0	2	1	2	0	0	0	0	0	10	16	22	1	2	2	1	0	1	0	1	1	2	****	2	3
24	1	4	2	3	0	0	0	3	2	5	10	<-----Datalogger Fault----->													
25																									
26	----->														2	3	0	0	0	1	0	0	****	0	
27	0	0	0	0	0	0	0	0	0	0	2	2	2	2	2	1	2	2	2	2	2	2	****	3	1
28	2	2	2	19	17	12	22	15	35	9	5	3	3	2	3	3	1	0	0	0	0	0	****	0	7
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	****	2	1
30	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	****	0	0
31	0	0	0	0	0	0	0	0	19	5	1	0	0	0	0	0	1	0	0	0	0	0	****	0	1

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		
1	1	3	1	6	10	19	25	0	-	41	0	-	8	5	89	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 : 2011  
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	29	23	18	17	22	26	31	25	26	33	30	30	30	29	18	19	19	28	45	41	40	31	****	25	28
2	23	24	23	22	22	19	22	26	24	20	18	21	14	13	9	13	21	24	23	29	35	31	****	32	22
3	28	29	22	23	14	21	31	30	20	19	18	15	24	14	11	12	15	20	22	26	26	28	****	38	22
4	37	28	22	23	21	20	33	28	29	19	26	21	10	18	21	19	13	21	24	26	22	24	****	36	23
5	28	9	12	16	25	20	20	20	18	17	17	21	13	17	10	15	27	22	17	12	15	16	****	24	18
6	15	9	12	11	3	10	16	23	23	22	17	9	8	7	19	19	11	13	14	21	22	26	****	22	15
7	10	2	5	3	0	1	17	19	19	15	3	2	8	2	7	13	13	12	10	11	17	18	****	21	10
8	4	4	5	0	6	11	23	21	24	18	8	11	12	15	11	8	9	18	14	2	9	12	****	12	11
9	6	2	0	6	12	8	31	24	22	9	16	19	15	8	10	14	12	16	22	44	65	72	****	82	22
10	78	64	49	48	55	47	50	52	62	82	102	112	79	48	35	35	31	36	40	29	30	28	****	23	53
11	23	35	57	54	48	55	51	72	67	86	90	103	104	99	112	54	60	33	28	24	42	77	****	36	61
12	39	60	54	62	72	81	88	95	57	59	47	59	66	44	52	44	58	62	95	65	41	49	****	17	60
13	8	5	3	2	3	9	29	20	24	23	17	15	17	15	18	15	19	38	36	39	22	25	****	17	18
14	12	3	2	2	4	6	17	26	23	33	37	27	28	38	52	63	71	55	66	59	60	55	****	62	35
15	60	54	53	16	11	11	24	37	45	69	52	47	52	32	40	43	42	41	46	31	40	40	****	25	40
16	17	12	15	13	25	9	13	26	24	27	31	36	25	24	23	22	32	32	29	26	29	29	****	25	24
17	23	17	23	9	6	22	21	20	20	25	26	23	13	14	15	14	19	25	32	36	30	****	32	21	
18	50	59	57	54	48	31	37	45	47	39	45	54	39	24	31	23	26	34	25	24	31	76	****	54	41
19	40	12	14	12	13	17	24	44	46	39	26	35	27	34	38	47	60	58	44	47	42	40	****	38	35
20	33	23	21	14	22	31	25	32	35	51	39	39	30	25	32	38	33	31	29	39	35	37	****	37	32
21	29	20	25	22	16	16	19	25	26	26	21	12	10	9	25	16	18	20	29	39	47	33	****	33	23
22	35	29	22	26	12	25	35	37	34	35	21	20	19	23	22	25	21	33	33	34	35	36	****	31	28
23	28	31	26	23	19	23	29	28	22	26	32	31	18	21	26	17	11	19	17	23	38	41	****	33	25
24	22	25	30	23	11	11	14	27	23	26	27	28	23	26	20	18	15	24	29	28	20	33	****	26	23
25	26	22	18	11	11	10	16	19	28	30	25	40	42	31	37	39	32	32	19	45	37	31	****	20	27
26	18	21	18	18	22	29	31	22	12	23	22	21	30	M	15	16	12	19	35	31	25	21	****	14	22
27	10	5	5	4	6	9	11	11	13	14	18	14	14	12	13	13	11	15	18	17	15	17	****	22	12
28	12	6	11	41	39	38	48	46	46	47	45	35	17	17	20	18	23	36	25	15	10	10	****	7	27
29	4	2	1	1	0	1	6	8	11	13	10	9	10	10	12	19	16	22	23	20	18	14	****	9	10
30	9	4	2	3	1	5	8	9	12	13	13	15	16	14	15	17	21	20	17	17	17	20	****	18	12
31	16	14	11	10	7	7	14	19	27	20	21	18	17	12	12	15	17	24	22	26	34	26	****	23	18

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	
21	23	23	48	60	79	93	0	- 112	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: AUGUST  
 YEAR : 2011  
 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	3	2	1	8	16	16	51	72	22	21	13	24	9	23	34	19	16	9	8	9	5	****	7	17
2	5	3	3	2	2	2	1	10	40	15	9	6	4	10	9	6	6	9	3	8	4	2	****	2	7
3	1	1	1	2	1	3	4	4	4	11	25	12	20	13	12	6	11	7	14	9	8	5	****	7	8
4	6	3	5	4	6	4	7	6	4	4	14	38	15	21	14	11	9	6	9	9	7	5	****	12	10
5	10	14	9	3	5	7	5	7	34	4	32	26	9	16	23	25	30	18	10	5	6	17	****	16	14
6	19	6	5	8	3	4	2	2	6	7	10	10	5	10	7	6	9	5	6	4	4	7	****	8	7
7	5	7	12	9	16	14	6	4	14	2	6	8	2	7	3	4	6	6	14	4	4	3	****	4	7
8	2	1	5	1	0	2	0	1	9	4	3	2	1	7	4	4	3	6	3	5	3	4	****	8	3
9	6	6	2	1	0	0	0	0	0	1	4	1	9	32	8	2	4	2	2	2	2	1	****	2	4
10	4	5	2	2	2	2	1	2	2	1	2	2	3	2	2	3	2	2	2	2	4	7	****	2	3
11	1	1	1	1	1	1	1	3	3	2	4	7	5	3	4	7	3	4	5	3	2	2	****	2	3
12	2	2	2	4	3	2	3	6	7	8	4	3	5	5	2	4	10	3	2	0	1	4	****	4	4
13	5	4	3	0	0	1	4	4	6	4	4	5	1	1	2	2	4	2	1	5	5	****	3	3	
14	9	21	11	5	9	8	1	5	14	6	6	4	5	1	3	1	1	5	5	5	9	13	****	21	7
15	8	8	9	2	5	2	1	6	8	9	17	12	2	2	2	1	2	2	1	3	4	5	****	2	5
16	2	3	3	4	2	1	3	3	6	1	3	7	1	4	2	2	2	6	8	7	9	****	3	4	
17	3	2	3	0	0	1	1	1	2	1	2	1	1	2	1	4	5	5	6	10	11	8	****	6	3
18	6	4	3	3	1	1	1	1	3	1	1	1	1	1	1	1	2	1	2	3	3	1	****	1	2
19	0	0	0	0	0	0	0	0	2	0	1	1	0	0	<----- D ----->	0	2	0	0	0	0	****	1	0	
20	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2	0	0	0	****	2	0
21	0	0	0	0	0	0	6	11	49	86	31	33	2	3	6	11	14	3	0	0	0	2	****	2	11
22	3	3	5	3	2	1	2	1	4	10	20	14	14	18	25	24	17	22	21	13	14	9	****	16	11
23	13	8	7	7	17	12	6	4	8	11	11	6	2	2	7	3	2	5	5	3	4	6	****	6	7
24	6	6	3	3	2	3	7	8	5	4	4	2	4	4	6	1	3	2	4	6	13	5	****	2	4
25	2	8	6	9	20	25	29	25	37	48	42	19	16	13	<-- M -->	7	11	7	6	33	14	****	15	19	
26	12	12	43	100	30	14	4	11	10	11	5	15	21	21	4	5	16	47	42	36	20	18	****	21	23
27	12	13	12	9	6	12	14	9	15	14	34	27	19	15	9	10	14	12	14	14	10	9	****	7	13
28	8	10	24	11	7	7	8	10	7	27	33	28	28	26	34	34	35	31	28	36	52	62	****	38	25
29	33	26	32	29	56	51	44	54	57	48	18	17	26	16	14	21	19	18	25	6	3	4	****	4	27
30	6	8	18	13	12	16	28	43	46	42	39	45	32	30	32	23	19	11	7	4	3	2	****	6	21
31	14	10	43	19	28	33	29	34	42	58	52	40	30	37	29	21	19	9	6	12	24	17	****	18	27

MONTHLY STATISTICS:

GEOM	ARITH	<-----PERCENTILE----->					<-----RANGE----->				STD GEOM	PERCENT	NO. OF TIMES			
MEAN	MEDIAN	50	90	95	98	99	1-HR				24-HR	VALID DATA	ABOVE OBJECTIVE			
5	5	5	26	35	48	53	0	-	100	0	-	27	4	95	0	24-HR
																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: AUGUST  
YEAR : 2011  
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	27	35	25	17	28	34	36	39	37	28	27	30	31	21	28	39	27	37	30	26	25	30	****	47	31
2	43	25	16	12	9	8	8	37	45	33	22	27	15	18	18	17	21	28	16	23	22	17	****	20	22
3	14	9	6	10	7	12	22	22	18	27	33	31	37	37	29	13	20	19	30	26	27	19	****	25	21
4	23	15	14	11	15	13	20	22	21	23	28	41	31	37	23	26	26	23	22	17	25	37	****	37	24
5	29	30	16	4	12	20	24	30	34	7	32	30	11	16	24	27	28	25	16	16	27	55	****	35	24
6	40	24	25	31	9	14	19	20	19	15	20	22	16	22	22	17	22	22	25	13	15	28	****	19	21
7	14	15	21	19	25	25	18	17	24	8	15	19	7	15	7	8	13	14	20	30	16	15	****	9	16
8	6	6	10	5	3	9	7	20	21	17	13	11	9	19	15	17	27	26	22	27	16	20	****	17	15
9	20	15	9	6	9	14	33	21	28	32	28	21	19	43	28	24	40	33	29	26	25	20	****	25	24
10	25	22	17	16	11	11	24	34	42	38	29	24	24	36	34	41	37	36	48	48	46	44	****	29	31
11	20	11	12	8	10	13	27	36	37	33	27	27	23	18	21	24	20	20	25	23	29	29	****	26	23
12	21	20	17	16	17	22	29	36	29	28	16	17	17	20	18	16	25	22	14	16	22	28	****	31	22
13	30	22	16	12	18	21	28	22	18	13	13	13	16	11	12	17	17	25	25	22	32	33	****	32	20
14	28	30	23	20	24	22	18	16	20	19	13	13	15	11	12	14	12	21	24	31	37	36	****	38	22
15	33	26	25	11	18	14	23	26	17	16	19	21	11	9	15	13	14	14	17	19	24	29	****	29	19
16	28	19	19	23	15	14	23	21	14	16	6	13	17	10	21	13	13	14	31	36	25	36	****	37	20
17	34	24	21	7	6	10	17	22	23	20	20	18	27	25	28	29	26	17	24	35	35	33	****	33	23
18	23	16	13	11	7	9	18	20	27	24	24	18	18	17	19	14	19	31	33	37	33	26	****	36	21
19	32	18	13	9	13	13	23	21	23	19	16	17	17	17	<----- D ----->				1	3	4	3	****	8	14
20	1	0	0	0	0	0	0	0	0	4	1	0	0	0	0	1	2	2	1	2	0	0	****	5	1
21	0	0	0	0	0	2	14	24	32	37	24	21	0	0	1	9	16	0	4	6	6	2	****	4	9
22	0	0	1	0	0	0	0	7	13	9	9	10	8	9	21	21	11	22	23	18	17	15	****	26	11
23	14	4	1	0	7	5	6	6	5	4	5	2	0	2	2	0	0	5	4	2	4	3	****	19	4
24	7	4	1	0	0	0	1	5	11	5	1	0	2	3	2	0	2	2	5	20	41	28	****	13	7
25	12	8	9	30	62	73	68	66	72	98	110	68	43	48	<-- M -->	110	153	169	170	168	146	****	123	86	
26	110	97	104	110	75	43	4	26	55	53	29	49	49	27	1	1	13	54	67	75	75	74	****	78	55
27	54	30	6	0	1	24	46	48	62	65	83	70	39	20	13	38	37	89	135	104	110	65	****	20	50
28	28	85	127	36	5	1	5	15	35	47	54	60	59	50	51	47	47	54	60	74	105	130	****	76	55
29	56	44	40	22	52	54	56	55	51	60	41	37	50	29	29	32	37	50	73	30	23	10	****	22	41
30	9	12	31	17	8	13	38	63	71	79	85	77	48	46	51	39	45	32	32	21	12	10	****	44	38
31	52	10	67	14	34	61	49	71	81	91	94	75	58	65	50	49	48	60	70	69	113	83	****	56	62

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
19	21	27	21	54	75	108	125	0	- 170	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 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 : 2011  
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	16	16	18	11	10	9	17	36	32	38	28	31	59	51	33	16	18	25	19	18	24	27	****	29	25	
2	57	38	25	25	20	17	17	71	167	97	47	48	47	29	13	26	16	13	9	5	3	2	****	1	35	
3	0	0	1	8	4	2	4	10	5	10	21	19	3	10	39	1	1	1	1	7	1	0	****	5	7	
4	5	1	0	0	6	7	2	11	82	69	41	26	4	2	14	13	12	9	3	3	4	3	****	4	14	
5	4	3	4	2	4	7	9	38	20	33	15	15	22	18	10	13	21	10	9	8	6	4	****	7	12	
6	9	6	5	5	4	3	4	10	27	9	5	5	3	3	2	2	2	3	2	2	2	1	****	1	5	
7	0	0	0	0	2	1	0	0	0	3	3	1	1	1	1	2	2	2	2	0	0	1	****	1	1	
8	1	1	1	1	1	1	1	2	2	1	10	4	2	2	2	2	2	2	2	2	2	3	****	3	2	
9	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	0	0	0	0	****	0	1	
10	0	0	0	0	0	0	1	1	1	2	2	1	2	2	2	2	2	2	1	1	1	2	1	****	2	1
11	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	0	****	0	1	
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	****	1	0	
13	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	2	1	1	1	2	2	****	1	1	
14	0	1	1	1	1	0	0	1	2	1	2	1	1	2	1	1	2	4	3	2	2	2	****	4	2	
15	2	2	1	0	0	0	0	0	2	2	2	2	2	1	1	2	2	1	0	0	0	0	****	1	1	
16	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	1	0	0	0	0	0	0	****	0	0	
17	0	0	0	0	0	0	0	0	1	2	2	1	0	0	0	0	0	0	0	0	0	1	****	1	0	
18	1	0	0	0	0	0	0	0	0	0	0	1	2	1	1	2	0	1	1	1	1	2	****	1	1	
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	0	0	0	****	1	0	
20	1	1	1	1	2	2	3	3	5	6	7	18	16	6	5	4	5	6	6	6	6	6	****	6	5	
21	6	7	8	6	6	4	4	7	7	7	16	12	15	9	11	6	5	5	5	6	7	6	****	6	7	
22	5	6	7	7	7	6	7	6	7	6	6	5	4	4	4	4	3	3	4	4	5	3	****	4	5	
23	4	5	5	5	5	4	3	4	4	5	5	4	3	3	3	3	3	3	3	3	4	3	****	3	4	
24	2	2	3	3	3	4	5	5	6	6	4	5	5	3	3	2	2	2	2	3	2	3	****	3	3	
25	2	4	4	3	4	2	4	5	4	3	3	3	2	1	1	1	1	1	1	0	0	0	****	1	2	
26	0	1	1	1	2	3	3	5	5	3	3	2	2	3	3	3	2	1	1	0	1	1	****	1	2	
27	2	1	1	2	2	2	3	3	4	5	4	4	5	3	5	5	9	7	3	3	3	3	****	3	3	
28	2	2	3	13	10	6	5	5	6	5	4	3	3	3	3	3	2	3	2	1	0	****	0	4		
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	****	1	0	
30	0	0	1	0	0	0	0	0	1	1	1	0	0	0	0	M	0	0	0	0	0	0	****	1	0	

MONTHLY STATISTICS:										NO. OF TIMES				
GEOM	ARITH		<-----PERCENTILE----->					<-----RANGE----->			STD GEOM	PERCENT	ABOVE OBJECTIVE	
MEAN	MEDIAN	MEAN	50	90	95	98	99	1-HR	24-HR	DEVIATION	VALID DATA	1-HR	24-HR	
2	2	5	2	10	21	38	54	0	- 167	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 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: SEPTEMBER  
 YEAR : 2011  
 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	58	62	33	25	21	13	37	61	58	55	48	55	90	111	82	70	84	88	72	46	50	67	****	54	58
2	88	61	39	34	22	9	23	56	72	64	53	71	52	39	31	33	25	39	64	46	44	6	****	6	43
3	0	0	1	28	4	2	17	59	57	69	90	73	23	35	44	0	2	15	40	73	32	4	****	26	30
4	20	0	2	0	21	25	27	36	61	47	43	27	8	53	22	13	6	3	5	8	7	1	****	14	19
5	9	6	0	0	1	14	32	50	52	36	22	2	11	12	3	0	8	2	21	18	11	1	****	28	15
6	9	3	0	0	0	4	14	31	39	14	13	0	0	0	1	6	16	30	8	5	1	0	****	7	9
7	0	0	0	0	0	0	2	15	18	12	12	3	0	1	5	14	15	9	4	1	0	0	****	7	5
8	0	0	0	0	0	0	2	11	16	8	42	9	1	3	5	3	5	0	0	0	0	0	****	3	5
9	0	0	0	0	0	0	0	2	6	1	0	0	0	0	0	0	1	5	2	0	0	0	****	5	1
10	0	0	0	0	0	0	0	1	2	1	2	0	0	0	0	0	0	0	1	0	0	0	****	7	1
11	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	****	5	0
12	0	0	0	0	0	0	0	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	****	5	0
13	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	1	1	0	0	2	1	****	7	1
14	0	0	0	0	0	0	9	10	4	2	2	1	1	3	8	13	17	12	6	1	0	0	****	12	4
15	0	0	0	0	0	0	1	7	10	10	9	0	0	0	0	0	3	8	10	0	0	0	****	7	3
16	0	0	0	0	0	0	1	15	32	30	0	2	0	0	0	13	4	1	0	0	0	0	****	9	5
17	0	0	0	0	0	0	1	8	20	22	16	14	0	0	0	0	0	0	0	0	0	0	****	7	4
18	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	3	2	0	0	0	0	0	****	6	1
19	0	0	0	0	0	0	0	7	12	4	1	1	1	1	7	10	14	33	13	26	39	42	****	32	11
20	22	11	1	1	1	1	17	37	56	62	54	53	61	36	27	56	81	92	91	86	66	49	****	34	43
21	25	27	26	19	13	4	31	58	66	65	67	73	72	66	93	43	65	61	60	49	67	69	****	29	50
22	10	10	3	1	1	1	6	28	50	37	27	11	16	21	26	16	23	34	40	32	41	24	****	12	21
23	1	0	0	0	0	1	12	13	18	24	20	13	15	11	24	20	31	46	42	31	23	6	****	3	15
24	0	0	0	0	0	0	6	24	41	35	20	37	30	11	15	14	14	9	7	6	1	2	****	14	13
25	1	0	0	0	0	0	1	0	1	7	7	5	1	0	0	0	0	0	0	1	0	0	****	2	1
26	0	0	0	0	0	0	2	3	0	0	0	0	0	0	0	1	1	2	0	1	0	****	5	1	
27	0	0	0	0	0	0	15	31	40	13	34	11	2	3	1	1	9	53	52	46	51	****	9	16	
28	8	8	7	17	15	4	21	50	56	42	30	23	23	21	20	21	19	18	11	0	0	0	****	3	18
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	****	4	0
30	0	0	0	0	0	0	0	2	16	12	5	4	8	7	4	M	24	20	22	18	20	16	****	17	9

MONTHLY STATISTICS:										NO. OF TIMES					
GEOM	ARITH		<-----PERCENTILE----->					<-----RANGE----->			STD GEOM	PERCENT	ABOVE OBJECTIVE		
MEAN	MEDIAN	MEAN	50	90	95	98	99	1-HR	24-HR	DEVIATION	VALID DATA	1-HR	24-HR		
7	2	13	2	47	61	73	88	0	- 111	0	- 58	7	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: JULY  
YEAR : 2011  
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	3	4	3	3	4	6	11	5	7	14	5	2	4	3	2	4	7	6	11	5	4	4	****	2	5
2	5	6	7	6	6	7	8	8	21	7	4	6	3	3	1	2	4	5	5	11	15	8	****	6	7
3	4	5	3	6	4	9	8	5	7	4	7	3	9	5	4	5	2	2	2	5	3	4	****	4	5
4	5	4	3	6	6	6	5	6	8	5	7	6	3	5	8	8	9	5	5	8	4	5	****	8	6
5	6	3	3	11	9	4	4	3	6	7	11	10	5	7	2	3	3	5	7	5	4	1	****	3	5
6	7	5	6	6	3	6	11	20	11	15	9	4	3	4	2	5	3	3	5	8	7	6	****	7	7
7	6	3	6	3	3	1	5	9	5	6	4	2	7	2	3	4	3	4	4	2	2	4	****	7	4
8	5	4	6	1	5	10	7	3	8	15	3	7	6	6	6	5	3	4	8	0	3	6	****	1	5
9	4	8	2	4	7	12	6	9	7	3	5	10	4	2	3	5	4	4	6	13	8	3	****	12	6
10	18	12	11	15	20	25	47	33	42	50	69	49	42	23	23	33	16	11	12	2	4	4	****	3	24
11	3	13	20	14	13	30	25	34	27	40	25	18	27	25	50	31	34	14	11	6	9	27	****	3	22
12	5	7	9	9	9	20	11	31	15	11	26	6	3	2	2	11	15	11	2	1	0	2	****	0	9
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	****	0	0
14	0	0	0	1	1	2	2	3	3	2	5	2	1	1	9	1	10	23	3	0	0	0	****	0	3
15	0	2	3	5	0	1	1	0	0	2	14	8	9	4	6	4	8	6	8	3	5	6	****	4	4
16	2	1	3	7	8	2	2	5	3	8	8	9	7	9	7	3	6	2	1	1	5	5	****	7	5
17	4	3	4	2	2	11	6	4	7	4	8	11	11	5	6	5	3	4	4	2	5	2	****	2	5
18	7	34	30	25	18	11	13	19	16	6	6	13	17	12	13	5	4	8	5	8	8	19	****	13	14
19	7	3	5	6	6	9	3	4	10	13	6	8	2	1	2	1	34	16	4	11	20	5	****	3	8
20	4	4	2	1	3	5	3	6	3	5	4	4	5	4	5	6	5	6	7	9	9	6	****	4	4
21	4	5	7	6	5	5	4	4	3	6	9	4	3	9	8	6	10	13	9	4	4	7	****	8	6
22	11	7	6	8	3	5	9	7	7	10	5	4	6	5	3	4	4	5	2	2	4	6	****	6	6
23	5	11	7	7	7	4	5	4	3	26	33	36	8	5	3	6	5	7	3	6	3	6	****	6	9
24	3	11	11	9	8	7	9	14	8	17	24	8	7	6	5	7	6	9	8	5	2	5	****	4	8
25	3	6	4	2	3	3	1	5	15	12	14	22	26	13	19	16	13	11	10	10	11	10	****	5	10
26	8	12	6	9	8	13	6	6	7	18	27	13	23	10	4	4	3	2	1	4	3	2	****	1	8
27	1	0	1	1	1	1	1	1	1	2	2	2	6	1	1	1	2	2	2	2	2	3	****	3	2
28	2	2	3	42	28	26	24	20	25	22	7	5	5	6	6	4	3	1	0	1	2	****	2	10	
29	1	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	3	2	****	2	1
30	2	2	2	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	****	1	1
31	0	0	2	5	0	7	1	4	7	10	7	11	8	6	1	0	1	2	0	1	1	0	****	1	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	DEVIATION	VALID DATA	1-HR	24-HR	
4	5	5	14	25	33	41	0	69	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: JULY  
 YEAR : 2011  
 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	0	1	1	4	7	4	7	11	3	2	7	5	3	6	9	12	18	12	11	9	****	12	6
2	11	12	12	14	11	12	17	16	19	13	9	11	7	8	6	8	13	14	18	24	28	22	****	22	14
3	15	12	7	14	9	16	18	14	15	13	15	8	12	8	10	11	9	7	9	15	15	16	****	21	13
4	20	10	8	9	9	10	10	14	16	10	8	8	4	5	11	9	13	12	15	17	15	11	****	22	12
5	12	5	7	17	13	9	8	6	10	12	14	15	10	15	8	9	9	14	18	15	11	10	****	17	12
6	12	10	8	10	7	10	14	18	13	16	13	7	3	6	2	4	4	8	13	15	17	14	****	13	10
7	7	3	5	4	2	2	8	13	13	11	5	4	5	2	3	6	5	9	11	10	6	9	****	17	7
8	11	7	8	3	10	16	15	8	17	20	9	12	10	12	10	12	13	17	19	12	15	19	****	17	13
9	13	15	9	8	15	22	16	16	12	10	14	11	7	8	11	17	14	21	38	46	29	****	61	18	
10	56	49	41	41	46	45	45	40	51	61	75	68	52	28	24	24	17	17	31	8	5	4	****	13	37
11	12	33	46	30	29	48	45	50	48	67	65	65	80	63	83	42	49	26	24	14	19	59	****	18	44
12	12	25	38	55	42	32	24	43	35	38	48	24	11	35	16	22	51	72	55	53	32	32	****	13	35
13	2	0	1	0	0	0	5	6	15	10	5	4	3	5	5	6	1	9	32	13	13	****	15	6	
14	8	3	2	3	1	2	3	12	18	23	15	15	12	4	39	34	50	55	42	6	1	2	****	11	16
15	10	23	21	11	4	3	4	0	6	8	47	17	23	14	7	15	17	25	24	8	16	20	****	16	15
16	7	3	6	11	23	6	6	12	10	17	22	23	14	13	12	9	13	6	3	5	9	9	****	17	11
17	11	4	7	3	2	14	8	4	9	4	8	7	11	5	6	5	4	5	11	6	7	0	****	16	7
18	50	50	48	43	31	12	13	24	31	23	12	26	27	15	14	9	6	17	7	11	15	54	****	40	25
19	20	9	5	4	3	6	1	14	21	17	6	10	5	7	13	22	33	32	8	13	25	14	****	10	13
20	8	7	5	4	4	10	8	9	10	17	11	12	11	9	14	16	19	19	14	18	17	12	****	18	12
21	12	12	13	9	6	5	4	4	5	9	9	5	4	7	13	16	17	19	21	18	16	16	****	27	12
22	20	11	9	12	5	10	17	17	19	22	14	11	9	8	5	9	6	4	2	5	6	13	****	16	11
23	9	17	12	10	10	8	12	11	12	22	24	M	10	7	7	13	12	13	10	17	13	19	****	20	13
24	10	20	22	11	9	6	11	20	15	18	22	13	12	13	11	12	11	18	17	13	10	13	****	18	14
25	16	15	11	7	8	5	7	12	19	24	23	34	35	24	37	38	32	26	29	36	32	26	****	20	22
26	17	18	12	13	14	17	13	9	12	16	20	15	20	14	9	12	14	11	7	11	11	5	****	5	13
27	0	0	0	0	1	0	0	3	5	4	2	5	11	2	0	1	1	1	1	0	0	1	****	5	2
28	1	0	12	43	37	38	39	40	46	40	23	16	12	11	13	15	20	20	17	17	8	12	****	13	21
29	6	5	2	1	1	1	1	1	2	1	1	1	0	0	1	1	1	3	2	2	1	1	****	9	2
30	8	4	3	1	1	2	2	1	2	2	6	1	2	1	1	1	3	4	4	12	11	15	****	21	5
31	19	15	16	19	11	21	11	14	16	20	24	25	25	19	4	2	6	9	5	21	19	6	****	14	15

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	ABOVE OBJECTIVE	1-HR	24-HR
10	12	12	32	46	55	64	0	- 83	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 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 : 2011  
 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	4	3	5	6	25	25	19	37	42	19	16	14	20	15	18	29	16	18	8	9	8	7	****	3	16
2	5	3	3	3	3	2	1	1	13	13	9	9	6	9	10	6	5	8	5	7	6	4	****	3	6
3	2	2	2	2	2	5	6	4	5	12	17	11	13	12	10	9	8	3	6	6	5	3	****	5	6
4	7	6	6	8	4	10	4	3	3	4	8	42	17	16	20	16	10	8	12	8	7	4	****	7	10
5	7	10	8	4	6	6	10	4	19	6	18	32	8	20	23	19	20	12	12	5	3	7	****	8	12
6	9	11	6	4	3	5	1	0	1	3	7	12	5	6	7	11	11	7	3	1	1	3	****	3	5
7	2	4	9	11	15	4	2	2	5	6	6	11	5	6	3	7	4	5	6	10	3	2	****	2	6
8	4	2	4	1	1	3	1	2	1	2	6	5	2	7	6	8	4	7	5	5	4	6	****	6	4
9	6	7	4	2	2	3	7	3	1	8	8	3	5	15	10	6	5	2	1	1	1	0	****	2	4
10	5	5	3	2	2	2	1	2	2	2	1	2	4	3	3	2	3	1	3	8	8	****	2	3	
11	1	0	0	0	0	1	1	4	2	2	2	3	4	3	3	9	3	4	5	3	1	3	****	3	3
12	2	3	3	5	5	3	5	7	8	7	3	8	10	7	4	3	13	4	3	2	7	6	****	9	6
13	9	6	6	3	1	4	4	4	11	7	5	3	6	4	3	8	8	6	4	1	5	5	****	6	5
14	6	9	9	5	7	9	4	7	12	10	8	5	5	2	11	5	1	3	6	5	6	6	****	14	7
15	6	7	6	2	4	3	2	3	8	11	12	10	6	7	7	3	8	7	4	7	6	5	****	3	6
16	4	3	3	6	3	3	7	4	4	6	2	9	3	1	12	7	8	4	6	8	6	7	****	5	5
17	6	5	5	2	1	2	2	2	3	1	2	0	1	2	2	3	5	8	6	8	11	10	****	8	4
18	7	4	4	3	1	1	2	1	3	1	<--- M --->	0	2	1	1	2	1	3	4	4	2	****	2	2	
19	2	2	2	5	4	2	0	2	5	2	2	3	2	1	1	1	0	1	2	2	2	2	****	2	2
20	2	2	1	1	1	1	1	2	2	3	2	2	1	1	1	0	0	0	3	1	0	****	3	1	
21	2	1	2	2	1	2	3	21	41	56	35	28	2	3	7	7	12	2	1	1	1	3	****	2	10
22	4	6	8	4	3	5	4	3	9	12	17	14	15	11	14	18	15	17	19	23	21	16	****	20	12
23	12	6	6	6	8	5	6	5	7	8	6	8	3	3	7	7	5	3	5	2	2	3	****	4	5
24	3	5	3	3	2	4	8	6	7	3	7	4	5	4	6	2	3	2	4	6	14	4	****	2	5
25	3	8	14	16	29	33	38	36	33	46	37	20	21	14	12	6	6	10	9	12	19	24	****	23	20
26	12	23	85	50	17	7	5	10	12	9	8	14	24	25	16	11	25	40	39	38	28	23	****	29	24
27	22	18	19	10	12	24	14	11	15	12	25	22	20	18	14	13	21	28	39	20	18	15	****	14	18
28	13	18	39	13	7	7	14	12	5	18	31	27	24	23	39	42	40	36	34	32	52	58	****	26	27
29	37	34	37	30	51	52	46	57	53	37	15	15	28	17	15	28	24	19	20	9	5	5	****	8	28
30	10	18	24	19	19	25	37	50	57	48	41	54	42	50	58	44	29	23	15	9	5	4	****	11	30
31	14	18	34	28	34	38	36	39	45	48	51	45	34	35	34	29	24	13	7	6	16	20	****	24	29

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	ABOVE OBJECTIVE	1-HR	24-HR
6	6	6	28	38	49	53	0	- 85	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 : 2011  
 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	30	31	27	30	31	30	29	29	28	19	17	18	17	17	17	26	17	26	19	29	18	15	****	11	23
2	15	2	2	0	1	0	0	0	16	11	9	13	8	12	10	9	9	17	9	10	11	9	****	7	8
3	1	0	0	1	0	5	7	4	6	12	16	15	20	20	12	8	11	11	16	12	10	5	****	12	9
4	9	7	5	6	2	7	2	2	7	11	15	28	18	20	20	20	14	16	22	14	12	4	****	15	12
5	9	12	8	0	5	6	8	8	20	5	15	25	9	10	14	13	16	11	17	18	10	19	****	20	12
6	17	16	14	9	3	6	5	2	4	2	6	15	6	8	13	13	13	12	9	8	7	7	****	8	9
7	4	5	12	16	14	3	4	6	4	4	7	10	7	7	4	9	5	7	11	18	11	9	****	9	8
8	10	5	6	1	0	5	0	3	3	4	6	6	3	10	8	11	14	19	14	13	13	15	****	13	8
9	8	7	2	1	1	5	15	9	6	7	12	9	9	15	13	13	18	5	1	1	2	0	****	4	7
10	5	6	3	2	0	1	0	3	5	3	4	7	8	17	16	14	20	14	13	5	8	13	****	7	8
11	1	1	0	0	0	0	0	7	5	1	5	5	4	3	3	10	6	8	13	10	4	3	****	8	4
12	4	6	2	4	5	7	7	11	12	12	9	7	8	9	9	6	12	10	13	12	13	12	****	19	9
13	16	8	7	4	3	5	7	9	8	3	5	1	4	1	4	9	11	11	12	11	15	13	****	16	8
14	13	13	11	6	9	9	5	7	9	7	5	7	5	3	15	8	4	9	18	15	17	18	****	28	11
15	17	12	8	3	8	6	5	11	10	7	6	10	6	7	7	4	13	13	16	15	15	12	****	14	10
16	9	5	2	8	2	1	4	3	2	2	0	5	1	1	11	10	7	7	11	16	11	10	****	15	6
17	7	5	4	0	0	0	1	0	0	0	0	0	1	1	0	2	1	6	11	10	14	13	****	14	4
18	3	1	2	1	0	0	0	0	0	0	<--- M --->	0	0	0	0	0	0	0	1	4	2	0	****	17	1
19	16	11	2	6	3	0	0	1	4	0	0	0	0	0	0	0	0	0	0	5	2	1	****	16	3
20	1	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	****	0	0
21	0	0	0	0	0	0	4	18	23	23	16	15	0	0	1	1	8	2	0	0	0	0	****	1	5
22	0	1	3	0	0	1	0	0	3	3	3	1	1	0	0	4	3	7	19	27	18	12	****	16	5
23	5	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	2	2	0	****	6	1	
24	0	0	0	0	0	0	3	1	2	0	0	0	0	1	0	0	0	4	15	35	8	****	1	3	
25	0	5	20	41	57	66	64	59	67	79	75	36	34	36	54	30	25	64	113	153	138	140	****	121	64
26	84	99	107	75	41	10	4	19	27	32	32	41	46	34	18	15	28	46	63	74	72	73	****	64	48
27	31	10	3	0	8	33	30	35	42	41	52	38	27	29	19	24	30	36	50	36	36	10	****	10	27
28	8	111	111	43	16	11	10	13	12	30	51	32	34	42	50	37	40	45	46	45	69	94	****	52	44
29	51	44	41	33	43	48	40	39	42	47	39	27	29	22	17	26	18	24	34	19	1	0	****	10	30
30	11	24	34	17	13	19	37	46	49	50	55	45	27	31	44	30	35	30	26	10	1	0	****	12	28
31	11	14	45	19	38	52	30	41	50	60	59	44	42	38	33	31	36	33	48	43	89	70	****	64	43

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	ABOVE OBJECTIVE	1-HR	24-HR
7	8	8	40	52	75	103	0	- 153	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 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 : 2011  
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	17	20	13	12	12	21	32	31	41	35	42	53	45	29	17	17	29	22	17	24	30	****	30	26
2	34	32	28	24	22	23	21	16	45	73	31	40	32	12	13	15	18	11	16	10	4	3	****	1	23
3	1	1	2	3	5	3	8	10	47	40	13	17	5	3	24	4	4	12	7	4	0	1	****	3	9
4	2	1	0	0	1	0	1	1	17	29	21	31	7	4	11	9	12	8	5	3	5	5	****	4	8
5	4	3	3	2	9	6	11	14	11	30	25	17	17	14	10	10	18	9	9	5	4	2	****	3	10
6	6	4	3	3	3	1	2	5	4	8	2	2	2	1	2	3	2	2	3	3	3	2	****	2	3
7	1	1	2	2	4	3	2	2	2	1	4	4	2	2	2	2	3	3	1	1	2	****	2	2	
8	2	2	1	2	1	1	1	1	2	2	18	5	1	1	1	2	2	0	0	0	1	2	****	1	2
9	1	1	0	1	1	2	2	2	2	1	1	2	2	1	1	1	1	2	1	1	0	1	****	1	1
10	0	0	0	0	0	1	2	2	3	4	3	3	4	4	3	3	3	1	0	1	2	1	****	1	2
11	0	2	1	1	2	1	2	1	2	2	2	1	1	1	2	3	2	2	1	1	2	2	****	0	1
12	0	0	0	1	1	1	1	2	2	2	2	2	2	1	2	1	1	1	2	3	4	5	****	2	2
13	1	2	2	2	1	1	1	1	2	2	2	2	3	2	1	2	3	3	3	3	4	5	****	3	2
14	2	3	3	3	3	2	2	2	4	3	3	3	2	2	2	2	3	6	6	3	4	3	****	5	3
15	3	3	2	0	0	0	1	2	3	3	3	3	4	3	<-----D----->	4	3	2	2	2	2	****	3	2	
16	2	2	2	2	2	2	2	4	3	4	3	3	3	3	3	3	3	3	3	3	1	3	****	3	3
17	2	2	2	2	3	3	3	3	3	4	5	3	3	2	3	3	3	2	3	3	3	2	****	2	3
18	3	2	1	2	2	2	2	1	3	3	3	4	5	4	4	5	3	3	4	5	6	7	****	3	3
19	2	3	3	3	2	2	2	3	3	2	2	2	2	2	1	2	4	4	1	2	2	****	2	2	
20	3	3	2	2	3	3	4	5	6	6	8	10	7	6	6	6	7	7	6	7	8	6	****	7	6
21	9	10	10	7	8	5	5	7	7	6	6	8	12	8	14	8	7	6	7	9	8	8	****	7	8
22	6	8	9	9	9	9	8	8	8	8	8	8	8	8	7	6	6	6	7	7	7	7	****	7	8
23	8	8	8	8	9	7	7	7	7	8	7	7	5	6	5	6	6	5	6	7	5	****	4	7	
24	5	5	7	8	7	9	8	10	10	8	8	8	7	6	5	5	4	5	6	5	6	****	6	7	
25	6	7	8	7	7	6	7	8	7	6	6	5	3	3	3	2	2	2	2	2	2	1	****	1	5
26	2	3	3	4	5	5	6	9	8	6	6	5	5	5	6	7	5	3	3	2	4	3	****	3	5
27	5	5	5	5	6	6	6	6	7	10	11	12	10	8	8	8	12	14	14	9	9	8	****	7	8
28	6	7	8	12	22	11	8	9	10	9	8	7	6	5	5	4	4	4	4	2	2	1	****	1	7
29	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	****	2	1
30	1	2	2	2	1	1	1	1	3	2	2	2	1	1	1	1	1	1	0	1	1	0	****	1	1

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			
3	3	6	3	11	21	32	41	0	-	73	1	-	26	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 : 2011  
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	45	42	37	34	29	20	37	41	38	34	26	28	60	66	50	49	65	78	44	33	48	52	****	52	44
2	60	49	38	33	19	12	8	3	41	35	29	33	22	6	6	15	27	17	10	4	0	0	****	3	20
3	0	0	0	2	5	1	5	10	24	48	64	61	22	29	35	18	19	32	54	48	4	10	****	15	22
4	3	1	1	1	1	1	1	7	33	42	35	37	5	15	18	7	9	9	2	1	0	0	****	6	10
5	1	0	0	0	15	1	15	30	13	36	24	14	11	10	6	2	8	3	4	0	0	0	****	5	9
6	4	0	0	0	0	0	0	0	5	9	4	0	0	0	0	0	0	0	0	0	0	0	****	3	1
7	0	0	0	0	0	0	0	9	11	0	0	0	0	0	0	0	0	0	0	0	0	0	****	2	1
8	0	0	0	0	0	0	1	5	2	9	26	9	0	0	0	0	0	0	0	0	0	0	****	3	2
9	0	0	0	0	0	0	0	1	3	5	1	0	0	0	0	0	1	2	4	2	2	1	****	5	1
10	0	0	0	0	0	0	0	2	4	2	1	1	0	0	0	0	0	0	0	0	0	1	****	4	1
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	****	2	0
12	0	0	0	0	0	0	0	1	5	7	3	1	0	0	0	0	0	0	0	0	2	0	****	5	1
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	****	7	0
14	0	0	0	0	0	0	0	6	1	1	4	0	0	0	0	0	0	0	0	0	0	0	****	6	1
15	0	0	0	0	0	0	0	5	6	9	2	0	0	<----- D ----->	12	10	7	14	9	****	13	4			
16	4	5	5	8	9	10	9	13	16	22	19	17	14	9	7	4	7	8	6	19	20	25	****	22	12
17	12	8	6	8	10	9	8	10	10	11	12	14	7	11	14	12	14	13	13	15	10	****	12	11	
18	8	6	4	5	3	3	4	4	9	8	7	10	9	7	1	1	2	5	16	12	4	5	****	9	6
19	3	2	2	2	1	1	5	18	23	23	14	11	4	6	6	9	13	13	21	17	21	40	****	41	13
20	37	27	23	17	20	25	26	43	55	58	53	50	48	48	54	65	67	79	88	84	75	59	****	49	50
21	53	51	47	37	36	23	37	46	59	56	55	63	63	56	79	60	51	50	39	49	49	48	****	42	50
22	32	35	31	28	21	18	23	40	30	31	33	31	37	43	39	30	32	36	39	33	28	25	****	21	31
23	21	17	17	25	24	23	36	35	35	36	31	26	31	37	25	24	29	29	26	26	28	29	****	18	27
24	15	13	13	14	14	25	29	37	50	49	45	47	52	29	28	28	35	22	23	23	22	17	****	25	28
25	21	18	13	14	16	16	23	18	14	18	23	15	12	15	17	14	15	17	23	24	18	15	****	16	17
26	14	11	11	10	11	11	15	23	28	21	23	23	19	22	15	18	24	29	32	19	21	23	****	21	19
27	21	10	10	13	12	12	13	22	34	43	38	38	27	25	28	31	37	37	37	67	85	45	****	31	31
28	25	16	28	31	65	37	32	47	59	60	50	45	44	45	40	38	30	28	26	18	14	11	****	12	35
29	9	5	5	5	5	5	4	4	4	4	8	5	3	3	9	12	5	5	12	13	7	7	****	8	6
30	3	2	2	2	2	2	1	2	7	5	4	5	3	1	3	3	5	3	2	4	3	3	****	6	3

MONTHLY STATISTICS:										NO. OF TIMES				
GEOM	ARITH		<-----PERCENTILE----->					<-----RANGE----->			STD GEOM	PERCENT	ABOVE OBJECTIVE	
MEAN	MEDIAN	MEAN	50	90	95	98	99	1-HR	24-HR	DEVIATION	VALID DATA	1-HR	24-HR	
10	9	15	9	43	52	64	71	0	- 88	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 : AP LEI CHAU  
POLLUTANT : SULPHUR DIOXIDE  
MONTH: JULY  
YEAR : 2011  
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	8	6	9	9	9	19	5	15	16	9	14	16	12	5	9	13	10	5	6	5	6	****	3	9
2	2	11	13	10	11	11	12	8	22	12	9	6	7	9	5	8	9	7	11	13	18	15	****	13	11
3	11	13	12	10	11	13	18	16	17	19	13	6	13	7	11	7	5	9	4	6	7	10	****	13	11
4	17	23	8	13	17	8	11	15	12	9	15	13	11	11	19	20	8	10	11	18	9	9	****	24	13
5	11	6	6	20	22	10	11	7	16	26	19	19	7	17	5	7	17	9	11	16	6	10	****	86	16
6	132	14	15	11	12	15	25	25	14	13	14	12	1	1	0	10	7	5	6	12	13	13	****	13	17
7	15	5	4	6	12	5	15	15	9	6	6	4	13	7	11	8	14	5	4	3	6	13	****	15	9
8	10	11	11	5	7	8	22	8	16	7	15	12	13	17	12	13	12	10	6	3	8	12	****	4	11
9	7	12	7	8	9	9	7	17	12	8	10	11	9	4	5	9	9	11	13	9	11	11	****	27	10
10	38	23	31	36	25	19	28	26	28	49	71	80	56	40	38	32	33	23	14	11	11	8	****	13	32
11	5	35	15	16	19	54	27	33	51	45	30	16	23	53	50	35	34	21	16	10	13	22	****	10	28
12	13	15	17	17	14	12	9	3	13	14	26	11	7	12	8	56	14	7	3	3	2	1	****	1	12
13	1	1	1	1	0	1	1	1	1	2	0	1	2	0	0	0	0	2	1	1	2	2	****	4	1
14	1	0	1	1	1	2	3	3	4	3	10	3	5	1	0	6	9	5	1	1	1	1	****	2	3
15	2	2	3	7	1	5	4	2	12	9	3	5	38	7	18	17	16	17	11	10	11	9	****	12	10
16	5	6	6	3	5	7	9	14	11	13	17	7	6	9	4	6	15	11	2	4	13	14	****	8	8
17	25	19	16	12	12	22	10	2	12	9	17	20	12	6	11	6	5	10	14	11	11	5	****	6	12
18	5	36	30	35	20	18	22	16	15	12	28	35	26	18	21	7	4	8	8	9	7	15	****	10	18
19	7	13	14	14	14	20	13	34	66	39	16	13	4	3	6	74	64	17	20	20	12	13	****	29	23
20	18	10	13	12	14	11	9	14	14	14	15	18	14	8	8	8	9	7	10	14	13	8	****	17	12
21	16	13	15	11	19	13	12	21	26	14	16	12	15	23	15	10	19	20	6	10	18	14	****	10	15
22	19	14	17	10	10	15	14	12	14	14	8	4	11	10	9	7	11	5	3	3	4	6	****	7	10
23	6	19	19	9	8	12	14	11	37	24	31	46	13	20	9	6	20	15	10	6	11	16	****	23	17
24	16	31	16	15	8	8	7	11	7	31	22	18	5	9	11	11	8	16	8	3	9	25	****	20	14
25	14	13	11	16	5	7	8	12	21	8	17	17	28	14	22	23	23	26	14	19	14	18	****	18	16
26	13	19	20	15	14	17	20	7	18	48	25	25	23	7	3	4	0	0	0	3	1	1	****	0	12
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	16	33	27	17	27	14	10	7	3	2	1	0	3	3	1	0	0	0	0	0	****	0	7
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	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
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	****	3	0

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	
9	10	10	23	31	47	56	0 - 132	0 - 32	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 : AP LEI CHAU  
POLLUTANT : NITROGEN DIOXIDE  
MONTH: JULY  
YEAR : 2011  
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	13	12	7	12	12	12	20	7	15	14	9	8	12	9	4	9	14	11	9	13	9	8	****	7	11					
2	6	13	13	10	13	13	12	8	12	10	8	7	6	8	7	11	12	10	11	11	19	14	****	12	11					
3	13	10	10	8	7	11	16	19	13	13	11	9	15	6	11	8	6	11	11	7	11	15	****	23	11					
4	25	24	8	12	15	6	14	14	12	14	17	13	14	13	19	19	11	11	10	14	11	12	****	30	15					
5	13	6	9	18	25	11	14	10	15	20	18	<	----->											15	15	15	15	****	12	
6	Analyzer Fault																													
7	18	7	4	8	9	7	19	13	11	11	12	11	12	10	14	13	11	4	4	6	10	14	****	14	11					
8	8	9	10	3	8	13	25	12	20	14	18	17	22	24	15	20	15	16	10	10	14	15	****	7	14					
9	11	17	8	14	20	24	17	24	16	15	18	19	18	11	11	16	19	19	21	29	52	79	****	90	25					
10	84	71	67	59	49	45	40	36	42	63	84	93	61	38	35	28	32	35	27	22	22	21	****	28	47					
11	19	53	45	44	45	58	58	55	60	71	84	89	71	71	58	48	53	37	28	17	28	52	****	39	51					
12	53	61	47	43	48	20	27	16	26	24	42	31	41	61	39	62	31	31	53	27	17	24	****	4	36					
13	3	3	2	1	3	11	18	18	12	10	7	9	8	6	6	4	4	5	9	28	19	13	****	6	9					
14	5	4	4	3	5	9	16	19	17	20	14	12	16	22	37	49	25	17	22	32	26	10	****	16	17					
15	35	20	10	9	3	12	10	12	54	38	24	17	27	10	19	20	20	27	21	22	34	22	****	21	21					
16	10	11	12	9	10	19	25	23	21	23	31	25	17	15	13	14	29	25	10	15	18	23	****	14	18					
17	32	23	22	15	17	31	24	8	15	12	19	20	16	10	14	9	8	18	22	13	13	8	****	27	17					
18	36	57	53	53	36	29	32	29	30	22	38	35	34	29	30	19	19	28	17	21	16	55	****	26	32					
19	29	47	30	28	20	26	22	36	41	30	20	22	14	21	28	56	54	25	21	22	16	17	****	25	28					
20	22	11	15	14	18	12	11	21	26	33	34	30	21	13	13	16	15	10	12	19	9	7	****	18	17					
21	21	18	15	13	24	22	17	24	30	17	18	17	17	22	18	16	25	19	8	20	30	18	****	16	19					
22	22	17	17	11	7	15	15	13	15	15	10	7	8	10	8	7	6	4	7	7	8	11	****	8	11					
23	11	20	22	8	11	14	21	10	15	13	19	26	10	14	16	12	21	20	17	16	14	21	****	27	16					
24	21	25	20	20	5	10	11	21	10	17	19	19	12	22	20	18	22	26	21	13	21	30	****	27	19					
25	23	19	20	23	11	12	17	17	20	18	18	21	34	27	41	36	40	34	24	27	27	26	****	19	24					
26	19	19	17	15	13	18	20	5	9	20	15	17	16	7	3	4	0	2	8	10	6	4	****	0	11					
27	0	0	0	0	2	3	1	4	3	1	0	0	1	0	0	0	0	1	1	0	1	2	****	8	1					
28	9	21	18	42	45	44	41	38	23	31	22	13	10	3	4	6	17	17	13	3	2	2	****	1	19					
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	2	1	0	****	3	0					
30	4	1	0	0	0	0	0	0	2	3	3	0	0	0	0	3	4	2	4	1	1	6	****	5	2					
31	7	2	5	7	7	5	8	10	7	3	1	3	2	3	3	5	4	8	10	13	11	14	****	16	7					

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	
13	14	18	14	36	52	62	75	0	-	93	3	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 300 OR 24-HR OBJECTIVE 150

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

STATION : AP LEI CHAU  
 POLLUTANT : SULPHUR DIOXIDE  
 MONTH: AUGUST  
 YEAR : 2011  
 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	4	6	5	37	41	31	75	80	48	38	35	18	24	33	28	23	19	12	20	31	10	****	13	28
2	15	44	22	24	34	28	13	38	42	21	34	9	6	12	17	6	8	14	6	11	12	1	****	8	19
3	3	13	5	15	3	15	5	6	7	31	36	30	24	23	14	9	10	9	6	9	10	9	****	19	14
4	31	6	5	6	10	12	18	16	2	5	20	44	27	29	24	15	12	10	7	8	10	8	****	27	15
5	27	21	9	8	17	28	38	43	63	16	17	30	14	14	19	23	23	20	14	14	9	18	****	20	22
6	49	19	16	18	10	4	5	1	10	11	20	17	10	19	11	11	14	8	19	3	10	19	****	10	14
7	4	13	16	11	13	11	21	6	20	6	20	7	8	11	11	14	11	5	13	15	7	8	****	6	11
8	5	6	8	1	1	1	4	12	12	7	26	14	5	14	14	5	8	7	7	8	8	8	****	19	9
9	25	4	6	1	1	0	0	1	1	0	1	0	10	30	20	3	3	0	2	1	0	0	****	4	5
10	5	5	4	1	1	0	0	1	1	0	7	2	1	5	4	3	2	1	3	3	14	6	****	2	3
11	0	0	0	0	0	1	1	6	3	3	2	10	4	3	6	9	4	7	5	3	0	1	****	2	3
12	0	0	3	3	5	1	1	8	6	14	5	2	18	2	4	5	12	3	2	1	9	18	****	9	6
13	7	9	6	3	3	5	18	6	22	21	27	14	9	4	5	10	16	14	5	2	12	13	****	8	10
14	20	23	16	17	20	16	8	25	19	17	19	6	7	4	11	1	1	3	6	4	24	67	****	31	16
15	38	28	30	8	7	7	5	15	22	21	35	19	3	10	5	7	14	6	5	7	26	15	****	19	15
16	20	12	21	15	12	22	31	21	16	14	10	34	32	3	10	5	5	6	13	27	18	16	****	9	16
17	3	8	5	1	1	1	2	2	1	1	3	1	1	1	3	7	3	8	3	13	13	4	****	7	4
18	6	2	2	1	1	1	1	1	2	1	1	1	1	1	1	2	1	1	1	4	1	2	****	1	1
19	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	2	1	****	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	****	3	0
21	1	1	1	0	0	0	15	57	66	88	34	20	0	0	2	1	1	0	0	0	6	10	****	3	13
22	4	11	21	8	5	10	7	6	16	35	40	19	17	15	36	26	27	37	29	17	12	6	****	18	18
23	22	20	25	15	25	24	12	9	13	19	23	9	3	9	12	10	6	10	10	2	5	15	****	8	13
24	9	10	3	4	8	15	8	11	12	6	7	3	17	13	24	5	5	7	11	6	18	13	****	13	10
25	32	54	38	20	38	49	45	36	89	75	54	27	34	28	9	10	12	11	8	10	11	6	****	9	31
26	10	4	70	86	25	15	1	2	2	4	4	16	13	4	3	6	25	37	34	20	21	41	****	17	20
27	17	20	32	33	21	21	25	15	11	26	38	53	30	43	21	26	26	15	38	37	34	30	****	24	28
28	17	14	21	36	13	10	9	18	20	42	45	32	40	32	39	44	47	41	33	42	76	113	****	46	36
29	29	23	24	28	48	49	44	53	55	50	25	26	40	27	23	33	31	35	30	16	13	11	****	25	32
30	40	64	37	24	23	27	36	56	58	53	46	53	48	48	56	45	47	21	13	11	12	12	****	18	37
31	29	19	44	37	47	43	46	45	53	60	65	56	50	61	59	46	36	21	10	11	30	43	****	25	41

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	
8	11	11	38	48	61	73	0	- 113	0 - 41	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 800 OR 24-HR OBJECTIVE 350

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

STATION : AP LEI CHAU  
 POLLUTANT : NITROGEN DIOXIDE  
 MONTH: AUGUST  
 YEAR : 2011  
 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	24	19	20	38	37	34	43	34	29	21	26	17	24	26	20	20	25	24	31	31	17	****	26	27
2	25	39	24	34	37	28	32	31	23	21	27	25	20	20	24	22	26	31	18	20	21	13	****	15	25
3	9	19	16	25	12	20	15	12	12	20	25	28	26	35	30	21	19	20	15	18	17	14	****	23	20
4	30	11	13	17	17	19	20	14	8	14	22	27	24	25	24	22	21	28	12	17	19	18	****	27	20
5	31	22	13	15	21	33	37	27	35	18	22	18	9	7	13	18	18	25	22	25	21	31	****	28	22
6	40	25	29	24	17	10	13	13	17	15	21	24	21	22	18	22	23	22	20	14	21	25	****	13	20
7	10	14	20	22	18	16	26	11	22	11	21	14	9	11	13	9	10	8	16	20	18	17	****	13	15
8	7	13	16	7	8	7	16	20	25	20	26	25	25	23	25	21	23	27	18	18	21	22	****	28	19
9	33	10	10	6	9	3	31	11	17	19	11	7	11	28	23	10	10	9	11	10	5	3	****	7	13
10	10	10	13	9	5	6	7	7	7	6	14	9	10	20	14	18	12	13	15	13	21	15	****	10	12
11	23	16	5	6	8	8	8	11	7	6	5	14	9	8	14	19	15	17	14	10	5	6	****	7	11
12	8	10	9	9	15	9	12	13	8	13	8	10	16	11	11	12	15	13	14	11	18	20	****	15	12
13	12	10	8	9	7	11	20	11	19	17	20	15	14	14	19	19	23	18	13	12	20	18	****	12	15
14	19	21	18	20	18	17	12	14	15	14	14	9	13	10	16	8	6	9	17	15	29	36	****	30	17
15	33	34	30	14	13	11	16	23	18	20	22	20	15	14	18	19	27	24	18	22	30	23	****	19	21
16	25	19	22	19	16	21	26	19	16	16	15	26	22	9	15	14	11	17	20	33	25	24	****	15	19
17	10	15	12	10	11	14	15	9	7	5	6	5	6	7	11	13	9	15	12	18	19	14	****	15	11
18	21	10	11	14	9	9	12	13	8	6	5	4	3	4	4	5	6	9	12	15	16	26	****	29	11
19	23	13	15	13	13	11	11	9	8	5	5	4	5	3	3	2	2	3	3	10	22	26	****	15	10
20	7	7	4	4	4	5	12	20	11	7	4	3	3	2	2	4	5	5	7	14	11	17	****	12	7
21	11	7	9	13	10	9	35	39	40	43	28	15	6	5	6	7	6	6	11	10	12	12	****	7	15
22	12	14	20	8	7	19	20	19	20	25	24	16	14	14	25	21	24	39	38	23	16	11	****	27	20
23	24	25	24	17	18	22	18	12	13	19	20	18	10	13	16	18	15	19	14	10	16	21	****	13	17
24	16	13	7	9	12	12	11	12	13	7	15	18	19	19	26	19	21	20	19	15	51	36	****	27	18
25	42	49	49	50	75	85	85	70	86	104	111	74	73	59	59	77	128	152	112	88	77	91	****	59	81
26	47	65	124	113	78	42	13	38	45	33	31	39	25	13	4	9	37	49	38	24	18	41	****	13	41
27	24	48	61	45	40	36	62	57	50	66	79	65	48	55	40	36	57	44	76	43	44	60	****	29	51
28	24	47	107	118	59	31	34	45	48	62	68	54	64	52	58	63	53	57	69	91	123	123	****	92	67
29	67	55	49	45	57	55	46	42	52	57	53	51	54	37	39	43	34	55	54	31	48	32	****	47	48
30	65	71	58	37	31	32	48	61	62	66	77	65	54	46	58	63	73	36	24	21	25	21	****	28	49
31	34	33	56	58	59	73	66	62	67	79	75	63	56	68	55	45	52	40	55	68	81	102	****	67	61

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	
19	19	19	57	69	90	112	2	- 152	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 : AP LEI CHAU  
POLLUTANT : SULPHUR DIOXIDE

MONTH: SEPTEMBER

YEAR : 2011  
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	37	51	27	20	23	18	39	61	42	40	33	41	62	64	42	24	22	26	19	28	40	38	****	53	37
2	49	74	55	51	63	64	87	121	120	47	52	62	29	28	17	23	27	23	14	13	6	6	****	2	45
3	2	3	2	4	15	15	12	5	5	22	20	10	1	1	2	1	1	1	1	2	2	3	****	6	6
4	4	3	2	1	2	2	1	18	175	142	41	6	2	2	34	39	18	9	5	11	7	5	****	29	24
5	11	25	24	16	15	14	16	21	23	40	43	18	22	21	13	30	37	22	14	8	6	2	****	5	19
6	23	7	5	4	3	3	3	8	8	2	5	3	2	1	2	2	2	4	2	2	3	2	****	1	4
7	2	2	1	3	5	2	2	1	1	1	5	3	1	3	2	2	3	6	1	1	2	1	****	2	2
8	2	1	0	2	2	1	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	****	1	1
9	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	****	2	0
10	1	1	1	1	1	1	1	2	2	4	4	3	4	4	3	3	3	1	1	1	2	1	****	1	2
11	1	3	1	1	1	1	1	1	1	2	1	1	1	1	1	3	2	2	1	1	1	3	****	1	1
12	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	2	2	3	5	****	1	1
13	3	2	1	2	1	1	1	1	1	3	3	2	2	2	1	3	5	3	4	2	5	4	****	4	2
14	1	3	4	2	3	1	1	2	3	3	3	3	3	3	3	3	7	8	6	2	4	6	****	7	4
15	5	3	2	1	1	1	2	2	4	2	3	3	4	4	4	7	6	3	1	1	1	1	****	2	3
16	3	2	2	1	1	2	1	1	3	2	2	3	3	2	6	2	3	1	1	1	1	2	****	2	2
17	1	1	1	2	2	1	1	2	1	3	4	2	2	2	3	2	2	1	1	1	2	1	****	1	2
18	2	2	1	2	1	1	1	1	1	3	1	5	3	4	3	4	2	3	3	6	7	7	****	2	3
19	2	1	1	3	1	2	1	1	3	1	1	3	2	1	1	5	7	2	1	2	1	1	****	3	2
20	2	1	2	2	1	2	9	9	9	7	10	12	4	4	4	4	8	7	11	10	12	9	****	12	7
21	13	12	11	8	5	4	3	2	5	8	13	10	3	3	1	2	1	5	4	5	6	5	****	6	6
22	4	6	8	8	7	8	8	7	6	6	6	5	4	6	6	6	5	6	6	6	6	8	****	8	6
23	8	8	9	9	9	7	6	7	6	7	8	5	3	3	5	3	7	5	6	7	8	5	****	5	6
24	4	4	6	8	8	9	9	10	9	8	9	9	4	5	5	4	3	1	4	4	4	4	****	4	6
25	6	8	7	7	7	6	9	8	7	6	5	4	2	1	1	1	1	2	3	2	1	0	****	1	4
26	1	2	2	3	5	4	5	9	7	4	6	2	3	6	8	8	4	2	1	1	2	3	****	4	4
27	5	4	3	5	6	5	6	6	4	7	6	8	8	8	6	7	19	8	10	9	10	****	7	7	
28	4	4	5	14	39	23	12	11	10	9	9	6	6	5	4	4	3	3	4	2	2	1	****	1	8
29	0	0	2	1	0	0	1	0	0	1	1	1	0	0	1	0	1	0	0	0	1	0	****	1	1
30	0	0	0	1	2	0	0	0	3	1	2	0	0	0	1	0	0	1	0	1	0	0	****	2	1

MONTHLY STATISTICS:		<-----PERCENTILE----->										<-----RANGE----->		STD GEOM	PERCENT	NO. OF TIMES ABOVE OBJECTIVE	
GEOM	ARITH	50	90	95	98	99	1-HR	24-HR	DEVIATION	VALID DATA	1-HR	24-HR					
3	7	3	15	32	53	64	0	175	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 800 OR 24-HR OBJECTIVE 350

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

STATION : AP LEI CHAU  
 POLLUTANT : NITROGEN DIOXIDE  
 MONTH: SEPTEMBER  
 YEAR : 2011  
 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	72	89	63	48	56	40	58	58	56	40	37	47	71	95	68	63	75	67	49	52	76	74	****	66	62
2	73	81	69	63	69	63	70	71	74	48	58	61	30	24	15	19	29	31	23	39	21	16	****	6	46
3	11	5	7	6	32	27	53	34	43	71	72	39	11	14	7	5	4	11	26	30	7	7	****	8	23
4	16	14	15	10	10	19	17	33	73	75	43	10	12	32	32	39	16	13	16	23	19	9	****	23	25
5	11	22	32	31	35	41	48	32	42	43	49	32	24	29	12	23	32	27	14	10	9	7	****	10	27
6	27	15	11	10	7	5	8	16	15	8	9	5	3	2	2	4	5	7	8	10	7	6	****	7	9
7	3	2	2	4	7	7	18	16	8	6	8	5	3	5	4	5	7	9	8	4	4	3	****	4	6
8	4	1	2	3	2	9	10	9	8	6	5	4	2	3	4	5	7	6	6	5	4	6	****	6	5
9	2	2	1	1	1	4	6	9	16	12	11	7	7	6	7	5	6	8	3	1	0	1	****	1	5
10	0	0	0	0	1	4	6	11	16	20	19	7	6	4	6	5	3	4	4	3	5	4	****	3	6
11	2	4	2	2	3	3	8	12	10	9	5	5	3	5	5	6	4	5	4	2	3	3	****	3	5
12	4	2	1	3	3	4	5	7	8	6	6	6	7	7	6	7	4	5	7	8	8	9	****	6	6
13	7	7	5	6	10	11	12	12	10	8	9	6	6	4	2	4	6	6	6	3	5	9	****	4	7
14	2	4	8	3	7	10	23	19	8	4	6	6	2	2	1	2	6	9	6	6	6	5	****	14	7
15	5	4	3	4	2	3	8	15	13	12	16	8	7	11	10	8	6	8	4	5	4	4	****	6	7
16	5	6	5	5	3	4	17	31	29	18	18	16	10	4	2	6	5	9	7	3	5	10	****	7	10
17	2	1	1	4	6	10	20	20	17	20	19	11	8	3	4	5	3	2	2	2	1	0	****	0	7
18	3	0	0	0	0	1	5	8	14	13	6	8	7	4	4	7	6	9	10	7	6	8	****	4	6
19	3	2	2	4	2	2	3	12	21	15	8	7	5	3	3	3	5	11	12	40	56	43	****	36	13
20	34	33	23	18	15	26	34	45	59	63	62	54	24	20	27	49	68	84	101	89	68	64	****	62	49
21	53	54	41	40	35	35	37	49	56	65	69	54	33	30	47	45	42	51	50	50	50	50	****	41	46
22	34	34	21	18	16	16	25	42	45	34	34	30	30	36	41	42	46	49	50	30	23	21	****	20	32
23	22	15	13	14	16	16	21	40	51	41	38	27	23	31	29	35	34	32	32	20	21	20	****	21	27
24	21	19	14	13	15	18	22	29	36	54	56	44	24	27	39	33	37	36	40	32	29	26	****	26	30
25	15	11	7	6	9	13	18	19	22	26	27	23	18	14	11	11	11	12	13	16	9	8	****	8	14
26	7	6	5	5	5	6	11	18	19	14	10	11	5	3	4	6	6	8	6	2	12	12	****	4	8
27	5	2	2	4	5	6	10	15	26	8	9	5	3	3	2	2	8	27	7	6	22	32	****	16	10
28	24	22	21	22	49	46	41	47	45	42	31	28	25	23	25	27	32	18	12	8	6	4	****	3	26
29	3	1	2	2	3	2	3	3	5	4	5	2	2	1	2	1	2	1	2	2	3	3	****	4	2
30	2	3	4	3	3	2	1	3	8	4	4	3	3	2	2	2	3	4	2	4	2	2	****	3	3

MONTHLY STATISTICS:										NO. OF TIMES					
GEOM	ARITH	<-----PERCENTILE----->					<-----RANGE----->			STD GEOM	PERCENT	ABOVE OBJECTIVE			
MEAN	MEDIAN	MEAN	50	90	95	98	99	1-HR	24-HR	DEVIATION	VALID DATA	1-HR	24-HR		
10	9	18	9	47	62	72	76	0	- 101	2	- 62	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 300 OR 24-HR OBJECTIVE 150

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

STATION : CHEUNG CHAU  
POLLUTANT : SULPHUR DIOXIDE

YEAR : 2011  
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	1	0	0	0	0	0	0	1	0	0	1	0	0	0	1	1	1	1	1	1	1	****	1	1
2	1	1	1	1	0	1	1	1	0	0	1	1	0	1	1	1	0	1	0	0	0	0	****	0	0
3	0	0	0	0	0	0	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	****	1	1
4	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	1	1	1	1	1	0	1	****	1	1
5	0	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	****	1	1
6	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	1	1	1	1	****	2	1
7	1	1	1	1	1	1	1	1	1	2	2	2	1	2	2	2	2	2	1	1	1	1	****	1	1
8	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0	0	0	0	0	0	****	0	1
9	0	0	0	0	0	0	0	0	1	1	1	0	1	1	1	1	1	1	1	1	1	2	****	2	1
10	1	2	1	2	2	2	2	3	4	4	5	6	6	5	6	6	3	2	2	1	1	1	****	1	3
11	2	2	3	3	4	4	3	3	4	6	8	9	10	8	5	6	4	2	1	1	1	1	****	2	4
12	1	2	3	3	6	4	5	4	2	1	1	1	1	1	2	4	3	1	1	1	1	1	****	3	2
13	2	1	1	1	1	1	1	1	1	2	2	2	2	2	1	2	2	1	1	2	3	3	****	3	2
14	3	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	2	1	1	1	1	1	****	1	2
15	1	2	2	1	1	1	1	0	0	1	1	1	1	1	2	2	1	1	1	1	1	1	****	1	1
16	0	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	0	0	0	0	****	1	1
17	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	****	2	1
18	2	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	****	1	1
19	1	1	1	2	5	5	3	6	8	5	2	1	1	1	1	3	2	1	1	1	1	1	****	2	2
20	1	1	1	1	1	1	1	1	1	2	2	2	2	1	2	1	2	1	1	2	1	1	****	2	1
21	2	2	1	2	2	2	1	2	2	3	3	2	2	3	2	2	2	2	2	2	1	1	****	1	2
22	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	****	1	1
23	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	****	1	1
24	1	1	1	1	1	1	2	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	****	1	1
25	1	1	1	1	1	1	1	1	1	1	5	4	3	4	2	2	1	1	1	1	1	1	****	1	1
26	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	5	6	3	2	2	2	****	2	2
27	2	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	****	2	1
28	1	2	1	2	1	2	5	8	18	22	14	9	3	2	3	2	4	3	5	1	5	3	****	3	5
29	2	1	1	0	0	0	0	0	0	0	<--- M --->	3	2	1	5	9	5	6	8	7	4	****	2	3	
30	3	2	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	8	7	5	4	6	****	5	3
31	4	3	5	10	12	13	14	14	11	8	4	2	3	2	2	3	1	4	2	4	7	7	****	12	6

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	
1	1	2	1	3	6	8	12	0	- 22	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 : CHEUNG CHAU  
 POLLUTANT : NITROGEN DIOXIDE  
 MONTH: JULY  
 YEAR : 2011  
 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	2	0	0	0	0	0	0	0	0	2	0	0	0	0	2	3	2	****	1	0
2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	****	0	0
3	0	0	0	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	****	0	0
4	0	0	0	0	1	2	1	0	2	4	2	0	0	3	2	2	3	0	1	0	0	0	****	0	1
5	0	1	1	0	2	5	2	5	4	13	9	6	0	5	2	1	0	0	0	1	1	1	****	2	3
6	0	0	0	0	0	0	0	0	4	5	5	1	1	1	1	1	0	1	0	0	0	0	****	0	1
7	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	****	0	0
8	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	****	0	0
9	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	6	28	61	****	50	6
10	33	26	23	32	45	42	37	34	39	22	17	17	15	10	17	12	2	2	1	1	21	24	****	4	21
11	48	49	63	60	51	54	46	41	41	54	65	77	59	41	16	26	10	1	0	1	7	34	****	46	39
12	49	73	94	80	79	60	61	50	4	0	13	1	5	53	48	50	30	15	21	15	0	16	****	84	39
13	57	5	35	4	3	1	16	26	14	15	1	1	0	0	0	3	0	0	6	15	9	****	5	9	
14	3	5	4	16	0	15	16	8	2	0	2	0	0	0	1	33	23	2	12	10	5	3	****	13	8
15	39	45	34	0	0	0	0	1	6	0	0	4	0	2	2	0	0	0	7	12	21	1	****	2	8
16	0	0	3	3	0	0	0	0	0	1	4	6	0	0	1	4	6	0	0	2	1	0	****	0	1
17	0	0	0	0	0	0	0	1	0	0	0	0	0	2	6	2	0	1	2	1	1	6	****	47	3
18	33	29	24	11	7	5	3	4	21	6	41	37	14	9	8	3	2	0	0	0	9	14	****	6	12
19	16	28	48	60	73	71	46	55	29	22	3	3	9	24	21	31	25	3	3	8	3	5	****	30	27
20	4	0	0	0	2	0	2	4	24	47	51	24	5	4	4	3	2	1	1	1	0	3	****	1	8
21	2	1	0	3	0	13	14	26	15	13	16	4	3	5	6	4	5	1	0	0	0	1	****	1	6
22	1	0	0	1	1	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	1	0	****	0	0
23	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	****	0	0
24	0	2	11	14	15	25	32	19	2	2	5	6	2	0	0	0	0	0	1	0	0	4	****	24	7
25	16	1	0	0	0	0	0	0	0	1	22	15	2	7	1	0	1	0	3	1	0	0	****	0	3
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	9	1	2	1	1	****	1	1
27	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	****	35	2	
28	34	27	23	28	29	34	34	34	47	62	56	53	0	0	2	0	8	18	40	3	27	16	****	27	26
29	16	12	13	16	15	9	0	0	0	0	<--- M --->	0	0	0	M	6	0	3	13	12	5	****	1	6	
30	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6	2	3	4	****	4	1
31	3	1	6	24	26	28	26	20	14	7	1	0	0	0	0	0	0	1	0	3	13	14	****	33	10

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
2	1	8	1	29	47	60	68	0	- 94	11	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: AUGUST  
 YEAR : 2011  
 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	14	12	9	13	8	17	14	9	11	12	6	4	5	11	11	9	6	4	4	3	3	4	****	8	8
2	9	6	4	6	9	10	9	7	8	6	6	6	4	4	4	3	3	2	2	2	2	2	****	1	5
3	1	1	1	1	1	1	0	1	3	11	7	4	2	6	9	3	2	1	1	0	0	1	****	1	2
4	0	0	0	0	0	0	2	4	3	3	7	6	5	6	5	3	2	0	0	0	0	1	****	2	2
5	1	0	0	2	1	1	2	4	5	3	2	2	1	3	6	5	5	4	3	3	2	2	****	3	3
6	3	3	3	3	3	3	5	7	5	6	6	6	4	6	5	4	4	4	3	3	3	4	****	5	4
7	3	3	3	4	3	3	4	4	4	4	4	3	2	3	3	3	2	2	2	2	2	2	****	2	3
8	2	2	2	1	1	1	1	1	2	2	2	1	1	1	2	2	1	0	0	0	0	0	****	1	1
9	1	1	1	0	0	0	1	0	0	1	2	2	1	2	2	1	1	2	3	4	2	2	****	2	1
10	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	****	3	1
11	4	3	2	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	****	1	1
12	1	1	1	1	2	1	2	1	3	2	2	3	4	3	3	3	3	2	2	2	2	2	****	3	2
13	3	2	2	2	2	1	2	2	4	4	4	2	2	2	2	3	2	2	0	0	0	0	****	0	2
14	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0	0	0	0	0	****	0	0
15	0	1	0	0	0	0	3	4	1	3	2	2	0	1	3	3	2	2	2	0	1	0	****	0	1
16	0	0	0	0	0	0	2	3	2	0	3	2	0	1	3	1	0	0	0	0	0	0	****	1	1
17	0	0	0	1	3	7	11	11	3	2	2	2	1	0	0	0	0	0	0	0	0	1	****	0	3
18	0	1	2	3	4	3	3	5	4	4	1	1	1	4	2	2	3	3	3	2	1	5	****	4	3
19	3	4	7	7	8	8	11	12	13	7	3	3	3	2	2	2	2	3	4	4	5	5	****	6	5
20	5	3	6	4	3	4	4	7	7	5	4	3	3	2	1	2	1	2	3	6	4	3	****	8	4
21	7	6	9	8	10	10	8	8	7	9	8	6	8	5	4	5	5	8	9	7	8	15	****	9	8
22	9	5	4	3	3	3	5	8	7	11	6	5	5	4	3	2	2	2	1	2	1	1	****	1	4
23	1	1	0	0	0	0	0	2	2	2	1	1	0	1	1	0	0	0	0	0	0	0	****	0	1
24	0	0	0	0	0	1	0	0	0	2	2	1	0	0	0	2	2	0	0	0	1	1	****	3	1
25	2	3	4	5	9	6	15	14	13	15	17	16	16	14	14	3	2	4	21	23	19	19	****	17	12
26	10	11	10	12	7	4	5	12	19	21	17	9	9	6	4	6	5	14	8	9	8	15	****	14	10
27	9	8	5	5	6	8	16	12	10	13	9	5	6	8	11	8	7	9	12	11	21	16	****	9	10
28	10	16	20	20	14	9	9	12	13	13	11	11	10	11	15	20	18	16	14	13	11	14	****	22	14
29	19	28	35	34	30	33	41	44	41	31	19	12	15	14	12	12	14	15	13	6	6	4	****	12	21
30	9	9	10	8	9	15	27	33	39	46	25	17	19	16	13	13	10	6	5	5	5	5	****	8	15
31	8	8	8	7	20	35	43	34	43	94	67	57	42	34	26	22	14	10	6	8	10	11	****	11	27

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	ABOVE OBJECTIVE	1-HR	24-HR
3	3	3	14	19	34	42	0	- 94	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 800 OR 24-HR OBJECTIVE 350

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

STATION : CHEUNG CHAU  
POLLUTANT : NITROGEN DIOXIDE  
MONTH: AUGUST  
YEAR : 2011  
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	35	28	23	31	22	34	25	14	17	7	2	1	5	18	19	13	7	3	8	1	5	24	****	34	16
2	40	33	17	20	32	33	26	18	18	6	8	2	0	2	4	3	3	1	2	6	2	1	****	1	12
3	6	17	8	20	16	9	0	0	9	16	14	14	6	17	20	4	4	1	2	3	4	5	****	4	9
4	14	11	8	5	3	7	16	15	11	10	14	13	10	16	15	11	3	1	0	0	0	5	****	25	9
5	0	0	0	2	7	2	18	18	13	2	1	0	0	1	1	0	0	1	2	0	0	0	****	0	3
6	0	1	10	4	1	10	23	23	6	10	11	9	4	10	6	5	2	3	2	4	3	3	****	9	7
7	6	4	4	9	14	11	18	14	7	15	9	4	4	5	4	4	4	4	5	5	5	12	****	5	7
8	4	5	5	6	3	3	3	5	9	8	9	7	4	7	12	11	3	0	1	0	1	0	****	4	5
9	1	2	0	0	0	0	7	0	0	19	22	13	1	5	4	0	0	1	10	12	1	1	****	7	5
10	0	0	0	0	0	0	0	0	1	13	16	11	5	2	1	1	2	1	2	1	0	0	****	12	3
11	21	15	12	7	15	21	20	0	10	1	1	0	0	0	0	0	1	0	0	0	0	0	****	0	5
12	0	0	0	1	5	2	0	0	6	0	2	4	2	3	8	5	4	1	1	0	0	1	****	0	2
13	2	0	1	0	1	0	2	2	10	11	6	4	2	3	3	9	4	0	0	0	0	0	****	1	3
14	0	1	0	1	2	0	6	6	4	3	2	3	0	0	0	0	0	0	0	0	1	1	****	1	1
15	4	1	4	7	5	4	22	20	5	8	7	4	0	3	7	5	5	2	2	2	7	1	****	0	5
16	0	1	0	0	1	1	15	15	7	1	24	9	2	7	14	8	1	2	1	1	2	0	****	6	5
17	7	0	3	22	19	30	31	20	19	5	1	2	2	1	1	0	0	0	0	0	1	2	****	0	7
18	0	4	4	10	17	16	11	12	13	5	1	0	1	4	1	1	2	5	9	4	0	17	****	14	7
19	11	30	33	31	34	34	32	24	21	9	1	1	0	0	0	0	0	0	2	2	8	9	****	16	13
20	13	4	28	14	3	8	10	29	26	13	4	1	1	0	1	0	0	1	2	10	7	7	****	19	9
21	15	11	17	17	22	27	21	24	20	21	20	9	10	5	6	2	1	5	11	7	10	23	****	13	14
22	15	2	2	3	10	10	17	18	14	12	4	4	3	1	0	0	0	2	1	3	1	1	****	3	5
23	1	1	0	0	0	0	2	5	6	2	0	0	0	0	0	0	0	0	0	0	0	0	****	0	1
24	0	0	0	0	0	2	1	1	7	12	7	2	0	0	0	7	7	0	1	4	20	20	****	42	6
25	30	38	52	52	61	46	78	84	78	88	85	63	51	41	43	38	34	50	129	155	147	110	****	88	71
26	47	55	44	87	42	18	22	39	59	54	52	44	38	13	6	7	4	24	13	13	25	79	****	77	37
27	64	46	18	15	21	43	65	40	33	50	32	19	13	21	31	18	20	25	32	29	116	82	****	35	38
28	45	104	83	86	59	39	34	47	54	47	42	49	37	28	44	44	33	44	82	75	77	55	****	66	55
29	60	56	64	71	65	65	72	73	64	54	46	33	43	43	46	35	36	64	21	28	31	30	****	100	52
30	67	51	42	16	14	29	40	49	59	69	52	32	23	24	21	30	17	29	42	51	39	56	****	20	38
31	27	35	30	14	46	66	81	68	86	102	93	98	81	70	63	54	56	22	42	81	81	70	****	90	63

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	ABOVE OBJECTIVE	1-HR	24-HR
5	6	6	50	70	86	99	0	- 155	7	96	0	0	
								1 - 71					

- 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: SEPTEMBER  
 YEAR : 2011  
 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	6	8	16	17	17	16	13	15	13	10	8	14	11	6	4	4	3	4	6	4	4	****	11	10		
2	11	12	16	17	16	17	22	17	23	26	23	15	20	17	16	5	3	4	11	15	11	7	****	5	14		
3	7	3	4	<-----POWER FAILURE----->																							
4																											
5																											
6	0	4	21	18	10	10	10	11	18	10	8	M	5	5	2	2	3	1	0	0	0	1	0	****	1		
7	2	2	2	2	2	1	3	5	3	3	3	4	3	3	4	4	4	4	4	2	5	3	****	3	7		
8	4	7	6	5	5	4	5	7	8	7	2	3	2	1	2	2	3	3	2	2	2	2	****	1	4		
9	2	1	2	1	2	3	6	6	5	5	2	7	5	5	1	2	2	6	6	3	2	2	****	3	3		
10	2	1	1	2	3	6	3	4	5	5	5	7	7	6	6	7	4	5	5	7	5	7	****	6	5		
11	5	6	6	7	10	9	7	7	10	7	7	8	7	7	6	7	3	3	2	3	3	3	****	0	6		
12	3	4	1	2	6	6	10	11	6	7	6	8	8	4	5	2	2	2	3	3	5	4	****	2	5		
13	2	4	3	2	6	11	20	23	8	5	5	4	3	3	6	4	3	4	4	4	4	6	****	5	6		
14	4	4	7	7	8	9	11	12	12	5	3	1	1	2	2	3	3	2	3	2	2	3	****	3	5		
15	2	2	2	2	1	1	2	3	7	7	4	4	7	4	3	4	5	4	3	4	3	3	****	4	3		
16	3	4	2	2	7	7	10	6	12	7	5	4	4	3	4	3	6	4	4	4	2	2	****	3	5		
17	3	1	2	3	5	8	11	7	11	13	10	9	3	1	1	2	2	2	2	2	1	3	****	3	5		
18	2	3	2	1	1	1	1	2	1	2	2	2	4	2	3	2	2	3	3	3	4	4	****	2	2		
19	3	2	2	2	3	3	4	2	4	4	5	4	3	4	4	3	7	9	7	5	9	12	****	13	5		
20	14	6	6	6	4	4	5	5	4	5	4	3	4	4	4	5	5	5	6	5	5	5	****	5	5		
21	4	4	3	3	4	4	6	6	7	7	7	7	10	7	7	7	8	9	13	21	21	****	14	8			
22	12	11	10	11	11	15	13	11	10	10	11	10	10	10	7	8	9	13	15	13	11	15	****	12	11		
23	12	11	11	10	9	13	12	15	13	16	15	7	7	12	13	11	10	9	7	8	8	7	****	4	10		
24	4	6	7	6	8	11	12	10	11	9	7	7	6	6	7	8	9	7	7	10	9	8	****	13	8		
25	12	6	10	12	11	10	14	12	12	11	8	8	8	7	6	4	3	4	6	9	5	2	****	2	8		
26	2	3	2	2	4	5	6	9	7	5	4	4	5	11	6	6	6	7	3	6	3	4	****	2	5		
27	3	4	3	3	4	5	9	7	12	12	6	<-- D -->	10	10	11	6	8	10	13	13	11	****	9	8			
28	11	12	17	24	29	14	11	11	10	10	13	12	11	8	7	8	8	5	4	3	3	1	****	1	10		
29	1	4	5	5	6	7	7	9	8	6	1	1	2	1	1	2	2	1	2	2	4	3	****	3	4		
30	3	4	3	4	3	3	2	1	2	3	3	5	3	3	3	6	5	5	3	2	3	5	****	3	3		

MONTHLY STATISTICS:													NO. OF TIMES				
GEOM	ARITH		<-----PERCENTILE----->					<-----RANGE----->				STD GEOM	PERCENT	ABOVE OBJECTIVE			
MEAN	MEDIAN	MEAN	50	90	95	98	99	1-HR	24-HR		DEVIATION	VALID DATA	1-HR	24-HR			
5	5	6	5	12	15	18	22	0	-	29	2	-	14	2	88	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 : NITROGEN DIOXIDE  
 MONTH: SEPTEMBER  
 YEAR : 2011  
 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	78	58	65	66	62	63	63	38	40	33	41	29	38	44	32	34	35	31	37	75	32	27	****	42	46
2	37	57	70	63	53	62	69	52	55	46	47	34	40	35	18	9	9	13	17	39	42	12	****	14	39
3	15	12	36	<-----POWER FAILURE----->																					
4																									
5	-----> 1 6 13 6 1 1 0 3 2 1 **** 1																								
6	2	31	47	45	36	37	35	22	27	19	15	M	2	3	1	3	3	6	7	2	0	2	****	2	16
7	0	1	0	0	0	0	3	12	5	9	4	3	1	3	4	6	7	5	3	1	4	1	****	4	3
8	3	5	3	6	8	4	10	18	34	31	2	3	2	0	0	0	2	5	3	2	1	1	****	1	6
9	1	0	1	0	1	3	10	11	8	11	5	10	7	6	0	0	2	18	13	6	1	1	****	4	5
10	1	0	0	1	7	18	5	8	17	17	12	7	1	4	6	1	2	3	6	3	8	****	4	6	
11	4	5	7	8	18	14	13	20	30	17	7	10	7	9	9	8	1	3	1	1	0	1	****	0	8
12	5	10	0	3	17	12	19	14	9	9	7	8	6	6	5	0	0	1	3	3	7	6	****	1	7
13	3	6	2	1	21	46	56	46	25	7	5	4	1	1	0	5	1	1	3	2	2	6	****	8	11
14	3	5	10	18	23	29	38	32	23	7	3	1	1	2	4	6	9	2	7	2	3	7	****	14	11
15	4	2	1	7	2	3	26	27	26	21	9	7	6	2	0	1	1	1	3	11	1	1	****	5	7
16	1	8	0	5	45	36	44	31	41	33	24	6	3	0	2	1	7	6	5	8	1	7	****	8	14
17	2	0	1	6	18	29	33	22	23	32	32	36	9	1	1	0	1	3	3	3	3	6	****	7	12
18	4	10	8	0	3	7	15	14	8	10	6	10	14	2	7	11	3	10	17	6	3	2	****	2	8
19	2	6	1	1	3	12	9	4	13	15	9	6	4	4	5	6	15	16	13	46	85	77	****	57	18
20	46	31	26	22	15	16	19	24	25	36	26	30	31	38	42	52	57	67	76	65	44	42	****	31	38
21	24	16	14	12	15	17	20	26	29	36	38	38	40	48	39	33	36	39	54	64	81	65	****	49	36
22	42	40	25	21	20	31	31	27	27	42	47	46	37	30	29	36	45	63	80	77	51	78	****	64	43
23	52	37	31	21	23	30	28	38	53	54	48	33	34	49	51	48	50	43	36	55	45	26	****	10	39
24	21	24	23	16	19	31	34	26	35	39	33	29	30	29	38	43	44	40	46	47	41	37	****	52	34
25	43	26	26	26	20	23	31	27	29	45	32	29	27	26	30	28	18	22	38	51	28	10	****	5	28
26	3	5	4	3	5	10	21	27	14	12	8	9	9	14	5	5	10	17	7	15	8	14	****	3	10
27	5	4	5	9	6	11	19	15	34	39	8	<-- D -->		10	7	16	5	11	16	19	15	24	****	29	15
28	48	73	83	79	82	52	33	32	32	39	43	44	43	31	23	30	39	28	29	12	9	5	****	3	39
29	1	8	10	10	10	14	12	17	14	11	2	1	3	0	2	2	1	1	4	1	7	3	****	4	6
30	4	3	4	8	5	3	1	0	3	3	3	5	3	6	5	13	9	12	6	3	9	16	****	7	6

MONTHLY STATISTICS:											NO. OF TIMES						
GEOM	ARITH		<-----PERCENTILE----->					<-----RANGE----->			STD GEOM	PERCENT	ABOVE OBJECTIVE				
MEAN	MEDIAN	MEAN	50	90	95	98	99	1-HR	24-HR	DEVIATION	VALID DATA	1-HR	24-HR				
9	10	19	10	46	57	72	78	0	-	85	3	-	46	4	88	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

## 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 2011

Week Ending	No. of Samples	Suspended Solids, mg/L			pH		
		Maximum	Minimum	Average	Maximum	Minimum	Average
02/07/11	3*	19	13	16	7.9	7.9	7.9
09/07/11	4*	16	12	14	7.9	7.8	7.9
16/07/11	5*	18	13	15	8.2	7.8	8.0
23/07/11	3*	16	13	15	8.2	7.8	8.0
30/07/11	6*	20	12	16	7.9	7.8	7.8
06/08/11	7	19	12	14	8.2	7.8	8.0
13/08/11	7	18	12	15	7.9	7.8	7.9
20/08/11	7	20	10	14	7.9	7.8	7.8
27/08/11	7	15	10	12	8.0	7.8	7.9
03/09/11	5*	13	10	12	8.0	7.9	8.0
10/09/11	7	18	12	14	8.0	7.8	7.9
17/09/11	7	18	11	14	8.0	7.8	7.9
24/09/11	7	16	13	15	8.0	7.8	7.9

Remark :

\* - No sampling for the remaining day(s) of the week / no sampling 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 2011

Sampling date		5/7/2011	3/8/2011	6/9/2011
Barium,	ug/L	<150	<150	<150
Mercury,	ug/L	<0.5	<0.5	<0.5
Cadmium,	ug/L	<1	1	<1
Iron,	ug/L	<400	<400	<400
Total Phosphorous,	mg/L	<0.8	<0.8	<0.8
Total Nitrogen,	mg/L	32	27	95
Cyanide,	mg/L	0.02	<0.01	0.02

Remark:

According to the WPCO Ash Lagoon Discharge Licence, contents at exact levels of trace metals below 1/10 th of the WPCO Licence permitted limits will not be reported. When the concentration of a metal exceeds 1/10 th 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 projects unless otherwise agreed by EPD.	Complied
	<b>WATER QUALITY</b>	
B1	All wastewater arising from the operation of the projects 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 projects 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