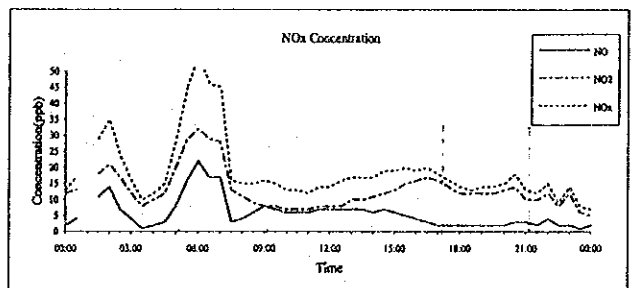
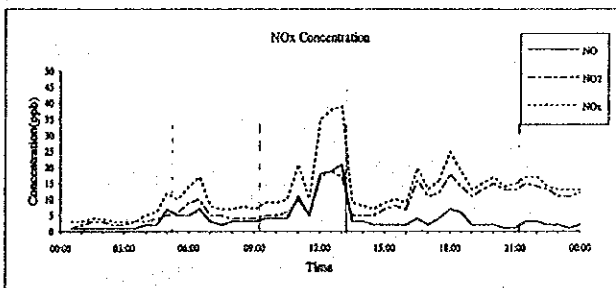
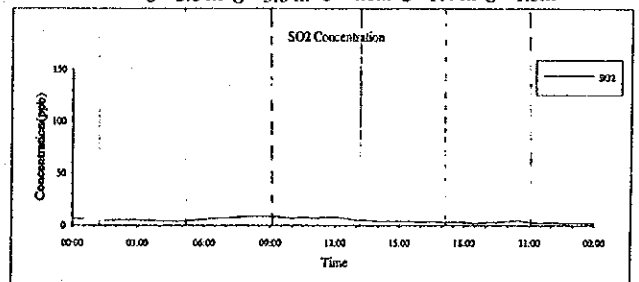
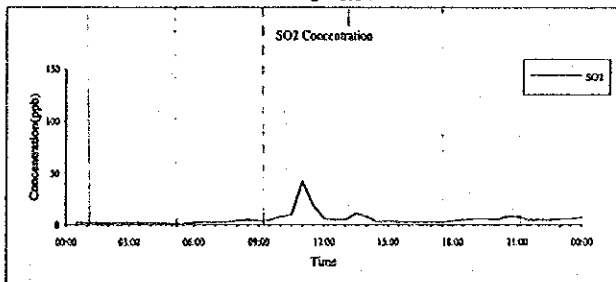
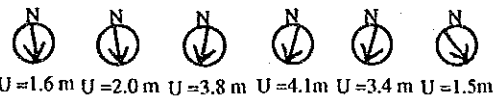
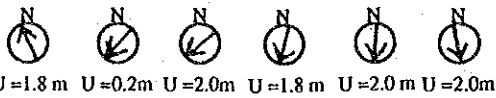
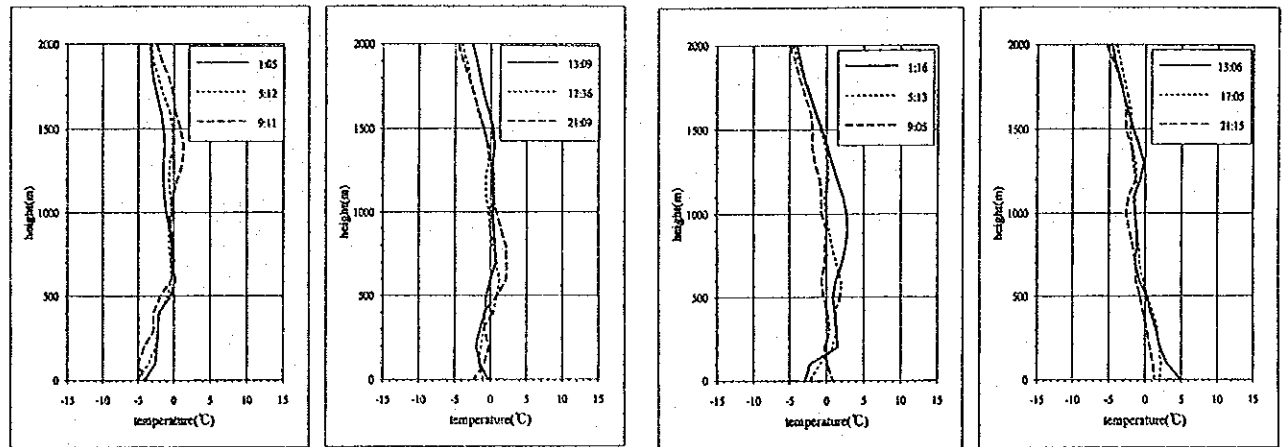
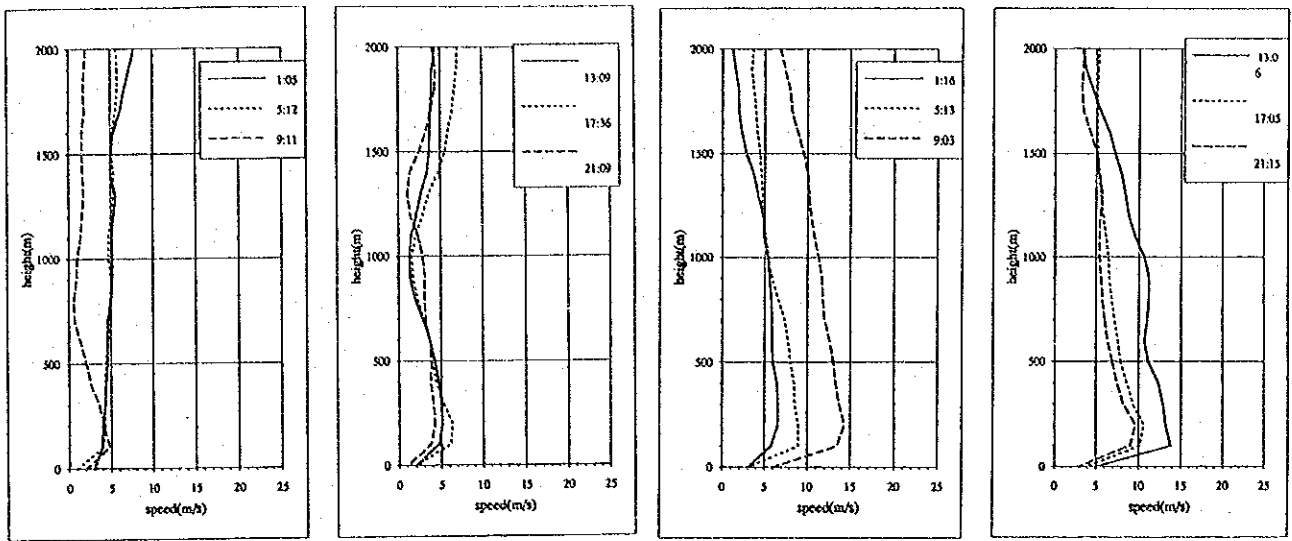


Figure D3.2.47 Vertical Profiles of Wind Speed and Temperature with Hourly Variation of Pollutant Concentration (JF2 October 5, 6)



January 20

January 21

Figure D3.2.48 Vertical Profiles of Wind Speed and Temperature with Hourly Variation of Pollutant Concentration (JF2 January 20, 21)

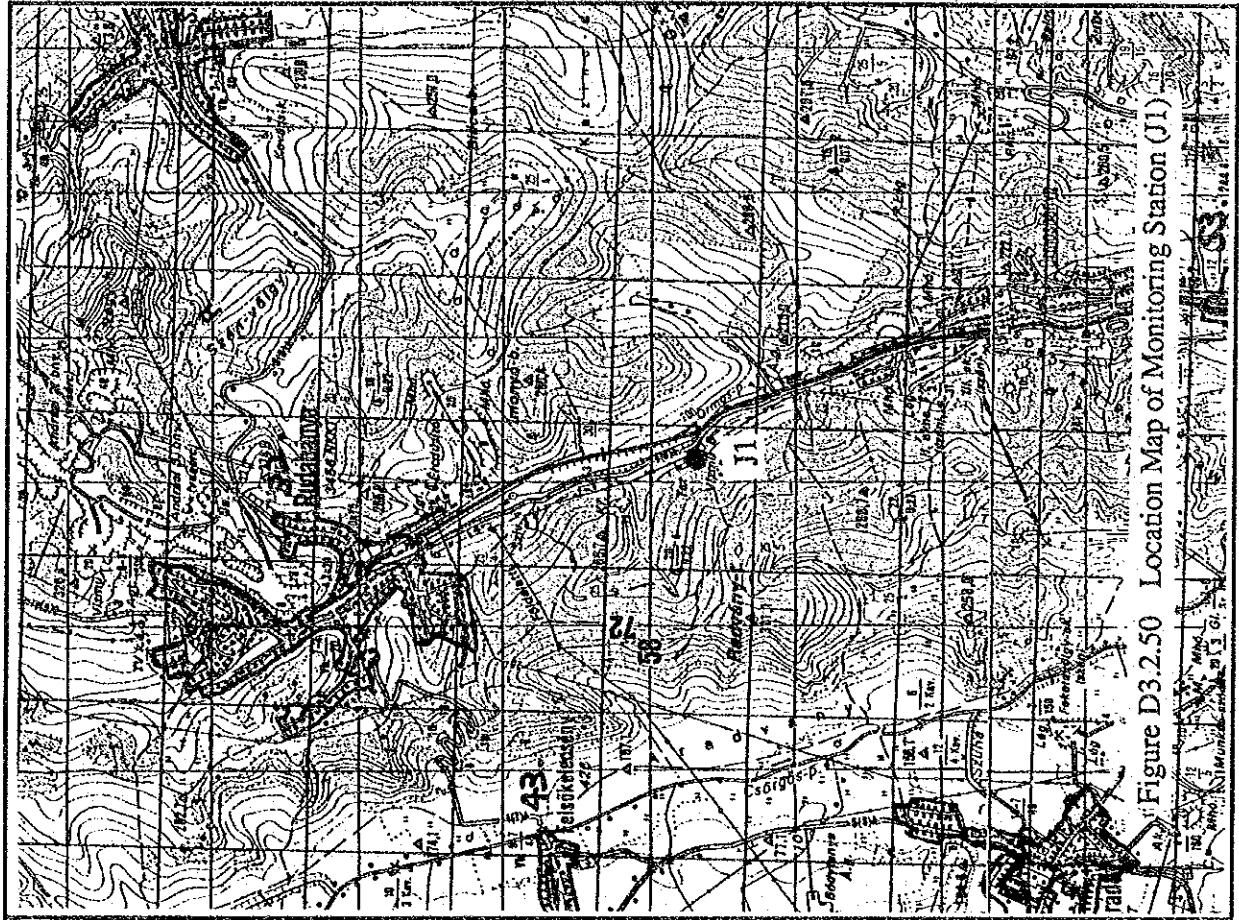


Figure D3.2.50 Location Map of Monitoring Station (J1)

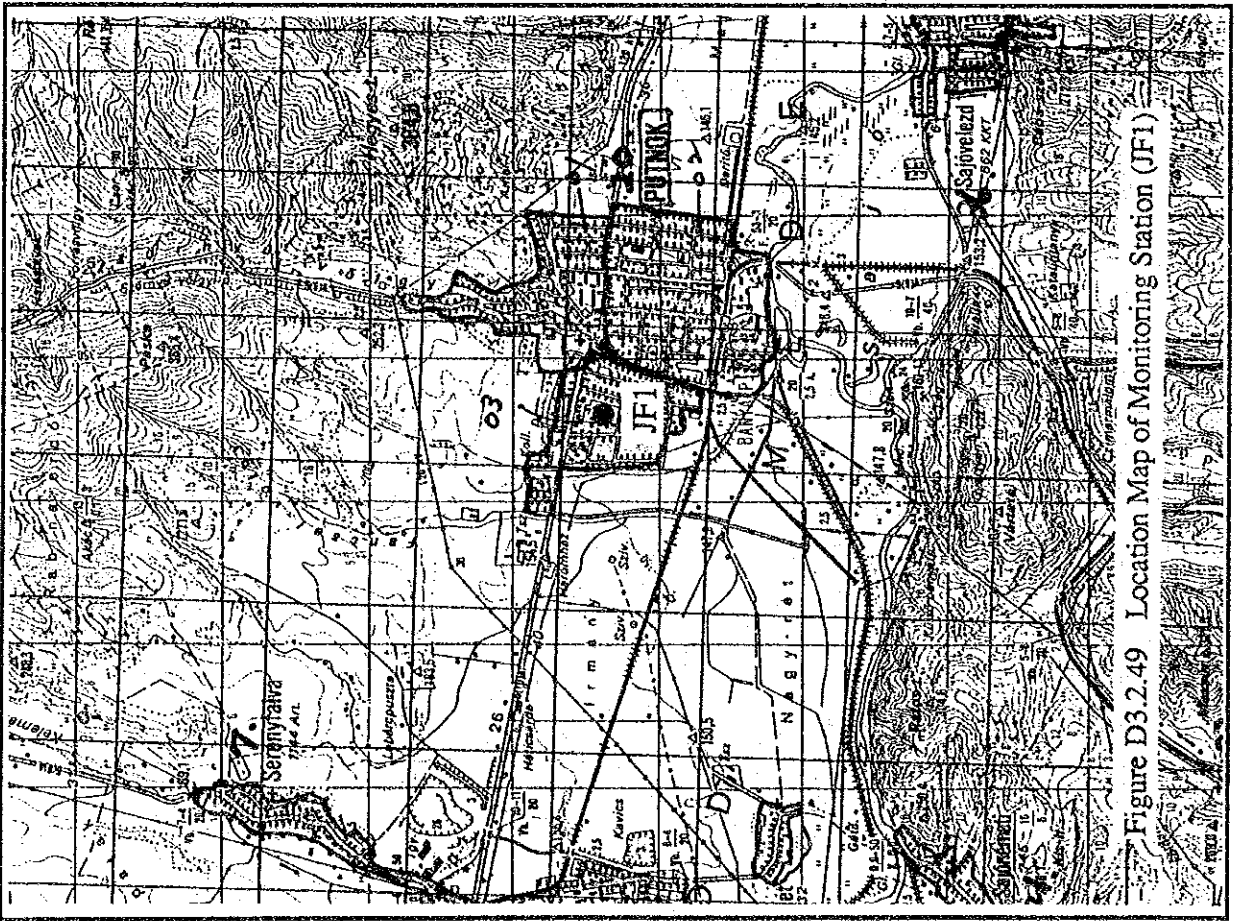


Figure D3.2.49 Location Map of Monitoring Station (JF1)

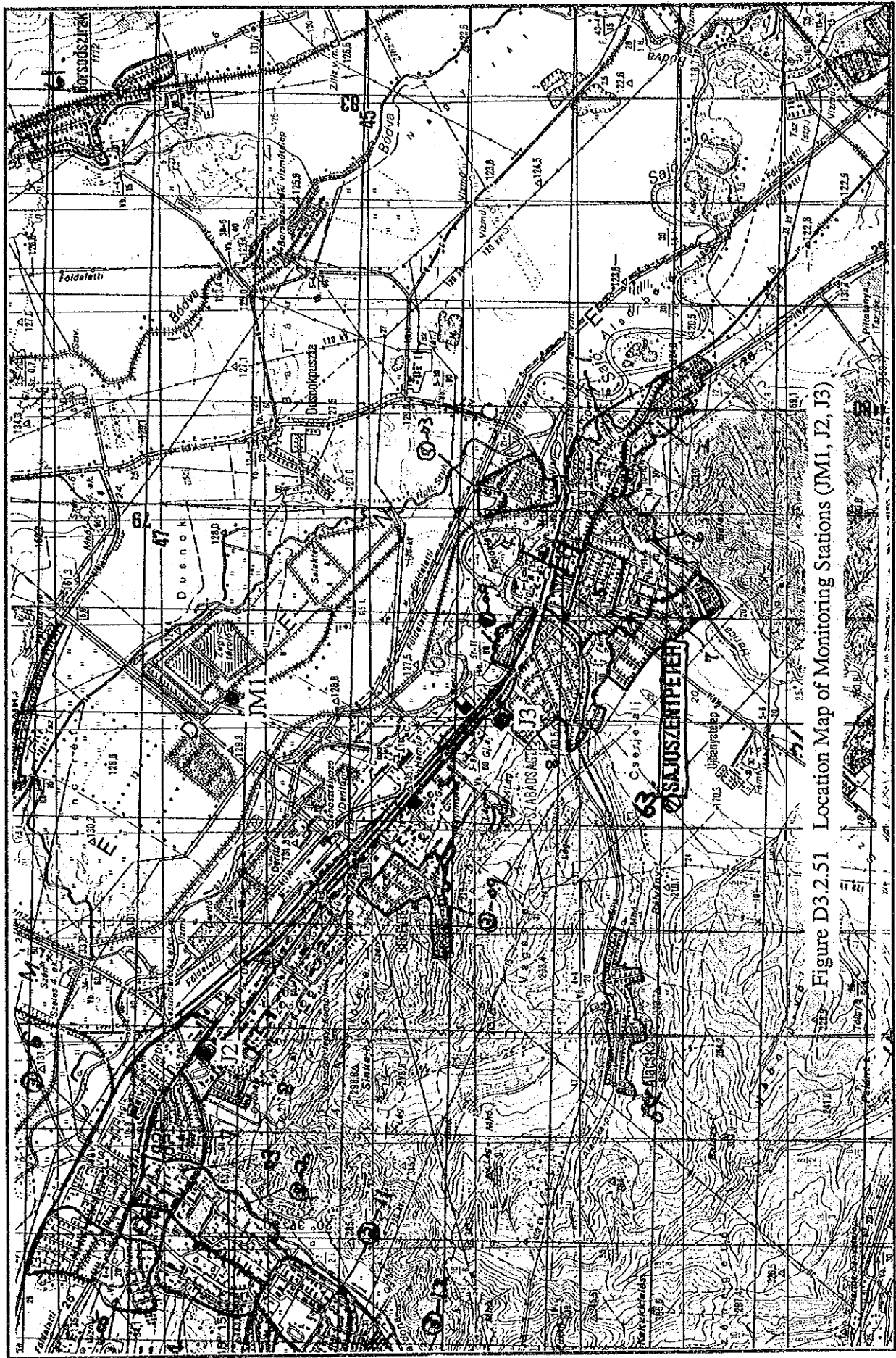


Figure D3.2.51 Location Map of Monitoring Stations (JMI, J2, J3)

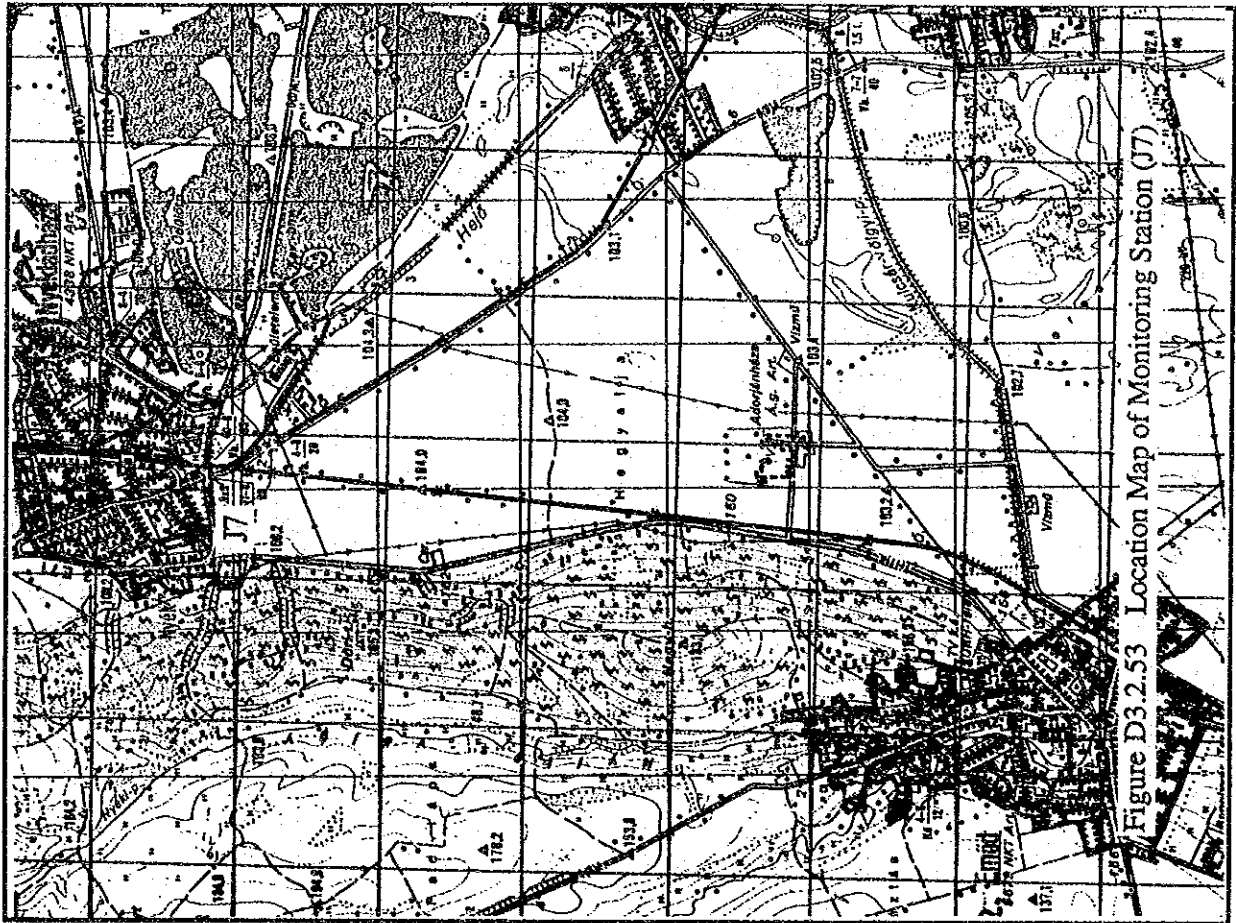


Figure D3.2.53 Location Map of Monitoring Station (J7)



Figure D3.2.52 Location Map of Monitoring Station (JF2)

Table D3.2.4 - (1) Mean Concentration of NOx by Wind Direction and Wind Speed (JF1 : all seasons)

Wind speed	Wind direction (ppb)																	TOTAL
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	
0~0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.1	15.1
0.4~0.9	10.0	9.5	11.1	12.6	13.5	15.7	13.4	8.6	5.8	7.1	7.6	9.4	11.8	11.5	10.6	10.6	0.0	11.9
1.0~1.9	6.3	5.3	7.5	8.0	11.3	12.0	11.4	4.9	3.9	5.0	3.9	5.2	7.6	8.2	8.4	7.8	0.0	9.2
2.0~2.9	3.2	2.9	3.0	5.4	8.1	10.7	8.9	2.9	3.9	3.6	2.8	3.5	4.3	4.3	4.9	3.7	0.0	6.9
3.0~3.9	2.8	3.6	3.4	5.3	8.3	11.0	9.0	1.6	3.5	3.3	3.5	3.6	3.3	3.4	2.1	2.1	0.0	5.5
4.0~4.9	2.0	2.0	3.0	6.5	5.8	10.8	4.0	1.0	2.0	2.7	3.9	4.4	3.0	3.2	0.8	3.0	0.0	4.0
5.0~5.9	0.0	0.0	0.0	5.0	8.9	15.5	0.0	0.0	1.0	1.3	4.5	4.1	3.3	2.9	0.7	0.0	0.0	4.0
6.0~6.9	0.0	0.0	0.0	4.5	3.0	3.0	0.0	0.0	4.0	0.0	7.0	7.0	3.3	3.3	4.0	0.0	0.0	3.5
7.0~7.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	4.8	3.3	0.0	0.0	0.0	4.4
8.0~8.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.6	0.0	0.0	0.0	0.0	4.6
9.0~9.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10.0~	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Average	8.3	7.0	9.2	9.3	10.8	12.5	11.4	5.6	4.4	4.8	4.6	5.6	6.8	8.3	9.1	9.3	15.1	10.8

Table D3.2.4 - (2) Mean Concentration of NOx by Wind Direction and Wind Speed (JF1 : non-heating season)

Wind speed	Wind direction (ppb)																	TOTAL
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	
0~0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.5	8.5
0.4~0.9	6.0	5.5	7.6	8.3	8.3	7.4	6.6	4.5	4.2	4.3	4.0	5.6	7.3	7.4	7.2	6.9	0.0	7.0
1.0~1.9	3.6	3.6	6.0	5.7	6.8	6.2	5.8	3.4	2.1	3.1	2.3	2.8	4.1	5.3	4.2	4.4	0.0	5.0
2.0~2.9	3.2	2.9	3.0	3.6	5.4	5.8	5.8	2.7	2.2	1.8	1.6	2.0	2.3	2.3	2.9	2.9	0.0	3.7
3.0~3.9	2.8	3.6	3.4	3.6	7.4	5.9	3.8	1.0	2.5	2.2	1.5	1.8	1.9	2.3	2.1	2.1	0.0	3.0
4.0~4.9	2.0	2.0	3.0	2.0	3.5	4.3	4.0	1.0	1.0	1.9	2.4	1.2	1.6	1.8	0.8	3.0	0.0	1.8
5.0~5.9	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	1.0	1.3	1.7	1.0	1.1	1.4	0.7	0.0	0.0	1.2
6.0~6.9	0.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.8	4.0	0.0	0.0	0.8
7.0~7.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	2.0	2.0	0.0	0.0	0.0	1.8
8.0~8.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	0.0	0.0	0.0	0.0	3.5
9.0~9.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10.0~	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Average	4.9	4.2	6.4	6.4	6.9	6.3	5.9	3.4	2.9	3.0	2.5	2.9	3.7	5.1	5.6	5.8	8.5	5.9

Table D3.2.4 - (3) Mean Concentration of NOx by Wind Direction and Wind Speed (JF1 : heating season)

Wind speed	Wind direction (ppb)																	TOTAL
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	
0~0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.7	20.7
0.4~0.9	14.9	14.9	16.6	19.0	18.4	20.3	16.9	14.0	10.0	13.2	13.9	13.5	15.9	16.2	15.7	15.4	0.0	16.9
1.0~1.9	10.7	14.7	14.2	12.9	15.9	15.9	16.7	10.0	8.1	8.8	8.5	9.9	11.4	12.1	13.2	12.3	0.0	14.0
2.0~2.9	0.0	0.0	0.0	8.0	10.5	13.8	12.5	5.0	5.5	5.3	5.5	7.5	7.5	8.1	8.5	7.3	0.0	10.9
3.0~3.9	0.0	0.0	0.0	7.7	8.9	15.3	12.6	4.0	4.0	4.1	5.8	7.7	6.4	8.0	0.0	0.0	0.0	9.3
4.0~4.9	0.0	0.0	0.0	6.8	6.8	15.1	0.0	0.0	4.0	3.7	6.8	5.9	5.1	6.1	0.0	0.0	0.0	6.3
5.0~5.9	0.0	0.0	0.0	7.4	8.9	15.5	0.0	0.0	0.0	0.0	7.3	6.2	5.3	5.2	0.0	0.0	0.0	6.5
6.0~6.9	0.0	0.0	0.0	7.0	3.0	4.0	0.0	0.0	4.0	0.0	7.0	7.0	5.0	6.7	0.0	0.0	0.0	5.2
7.0~7.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.5	4.0	0.0	0.0	0.0	5.3
8.0~8.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.0	0.0	0.0	0.0	0.0	9.0
9.0~9.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10.0~	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Average	13.8	14.9	16.1	13.6	14.4	16.5	15.9	11.7	7.0	7.4	9.1	9.8	10.5	12.9	14.2	14.3	20.7	16.0

Table D3.2.5 - (1) Mean Concentration of SO2 by Wind Direction and Wind Speed (JF1 : all seasons)

Wind speed	Wind direction																CALM	TOTAL	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW			
0~0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.6	35.6
0.4~0.9	21.3	26.6	26.1	31.3	38.3	54.2	43.2	27.8	13.6	21.1	19.4	21.2	23.1	22.7	19.6	19.5	0.0	29.8	29.8
1.0~1.9	13.7	8.7	16.1	20.5	33.0	39.3	36.1	13.0	13.4	16.1	10.9	11.9	15.3	17.5	21.3	16.7	0.0	25.4	25.4
2.0~2.9	3.0	2.0	2.1	13.6	25.7	39.4	31.0	7.0	12.2	14.5	7.0	7.7	8.7	11.0	15.1	7.1	0.0	21.8	21.8
3.0~3.9	2.3	1.6	3.3	15.8	24.5	40.6	32.9	2.0	11.7	10.6	7.8	6.5	5.4	8.3	2.0	1.7	0.0	15.5	15.5
4.0~4.9	2.0	1.0	2.7	25.8	17.3	27.0	3.0	1.0	4.3	8.4	9.3	7.2	4.4	8.3	0.7	1.0	0.0	8.6	8.6
5.0~5.9	0.0	0.0	0.0	18.9	26.8	39.2	0.0	0.0	2.0	6.0	6.3	3.7	4.2	8.1	1.3	0.0	0.0	7.6	7.6
6.0~6.9	0.0	0.0	0.0	18.0	13.5	12.0	0.0	0.0	4.0	0.0	2.5	4.0	4.5	6.0	3.0	0.0	0.0	5.2	5.2
7.0~7.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	6.9	4.7	0.0	0.0	0.0	6.5	6.5
8.0~8.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8	0.0	0.0	0.0	0.0	3.8	3.8
9.0~9.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10.0~	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Avarage	17.4	16.7	20.8	24.4	31.8	42.8	37.1	16.3	12.8	15.4	11.8	12.1	12.9	17.3	19.3	17.9	35.6	27.7	27.7

Table D3.2.5 - (2) Mean Concentration of SO2 by Wind Direction and Wind Speed (JF1 : non-heating season)

Wind speed	Wind direction																CALM	TOTAL	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW			
0~0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.7	6.7	6.7
0.4~0.9	5.5	5.2	7.8	10.5	10.7	11.5	10.7	8.4	6.2	9.6	7.5	8.6	9.1	8.3	6.3	5.5	0.0	8.4	8.4
1.0~1.9	3.8	3.5	7.7	9.0	11.3	11.4	12.0	7.3	5.7	5.6	5.0	4.5	6.7	7.8	6.2	6.2	0.0	8.3	8.3
2.0~2.9	3.0	2.0	2.1	5.0	13.5	16.2	14.5	4.7	6.7	7.4	3.9	3.4	3.5	4.6	4.4	3.5	0.0	8.5	8.5
3.0~3.9	2.3	1.6	3.3	4.3	23.3	16.0	7.2	1.3	8.7	5.9	4.8	2.1	2.7	5.1	2.0	1.7	0.0	6.3	6.3
4.0~4.9	2.0	1.0	2.7	2.0	6.9	5.4	3.0	1.0	4.0	10.1	4.8	2.2	1.6	5.2	0.7	1.0	0.0	3.0	3.0
5.0~5.9	0.0	0.0	0.0	3.3	0.0	0.0	0.0	0.0	2.0	6.0	7.7	0.3	1.6	4.4	1.3	0.0	0.0	2.4	2.4
6.0~6.9	0.0	0.0	0.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	2.5	3.0	0.0	0.0	1.5	1.5
7.0~7.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	2.3	4.0	0.0	0.0	0.0	3.0	3.0
8.0~8.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8	0.0	0.0	0.0	0.0	3.8	3.8
9.0~9.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10.0~	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Avarage	4.6	3.8	6.9	8.7	12.2	12.7	12.0	6.6	6.1	7.3	5.4	4.6	5.1	7.1	5.8	5.5	6.7	7.6	7.6

Table D3.2.5 - (3) Mean Concentration of SO2 by Wind Direction and Wind Speed (JF1 : heating season)

Wind speed	Wind direction																CALM	TOTAL	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW			
0~0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	59.7	59.7	59.7
0.4~0.9	38.9	52.6	50.7	60.4	63.6	78.0	60.2	53.8	33.9	45.7	39.4	34.3	35.7	38.3	39.0	35.9	0.0	51.3	51.3
1.0~1.9	27.7	31.4	47.8	44.2	55.3	57.8	58.9	31.8	31.1	35.2	27.8	25.8	24.7	30.0	37.0	28.8	0.0	44.4	44.4
2.0~2.9	0.0	0.0	0.0	25.6	36.9	53.9	49.7	25.5	17.1	20.8	13.9	18.1	16.1	19.6	27.5	20.8	0.0	37.4	37.4
3.0~3.9	0.0	0.0	0.0	31.8	25.3	61.8	50.9	5.0	13.1	14.3	11.3	16.0	10.5	15.6	0.0	0.0	0.0	28.7	28.7
4.0~4.9	0.0	0.0	0.0	27.0	21.7	41.3	0.0	0.0	5.0	6.3	18.2	9.6	8.4	13.9	0.0	0.0	0.0	14.6	14.6
5.0~5.9	0.0	0.0	0.0	31.4	26.8	39.2	0.0	0.0	0.0	0.0	5.0	6.0	6.5	12.4	0.0	0.0	0.0	12.0	12.0
6.0~6.9	0.0	0.0	0.0	30.0	13.5	24.0	0.0	0.0	4.0	0.0	2.5	4.0	6.6	8.8	0.0	0.0	0.0	7.5	7.5
7.0~7.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.0	5.0	0.0	0.0	0.0	7.6	7.6
8.0~8.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0	4.0	4.0
9.0~9.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10.0~	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Avarage	35.9	48.5	50.2	45.8	49.6	62.0	57.5	42.4	24.0	27.0	24.9	23.3	21.6	30.1	37.2	33.2	59.7	47.9	47.9

Table D3.2.6 - (1) Mean Concentration of NOx by Wind Direction and Wind Speed (J2 : all seasons)

Wind speed	Wind direction																	CALM	TOTAL		
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW					
0~0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	47.3	47.3
0.4~0.9	39.6	42.1	42.9	38.4	36.8	43.9	47.3	48.6	44.1	32.2	42.0	40.1	34.9	41.7	46.4	46.9	0.0	0.0	0.0	42.9	42.9
1.0~1.9	33.8	29.7	30.5	32.4	34.7	34.8	40.6	44.8	38.1	29.6	24.4	21.6	20.1	25.2	35.4	40.1	0.0	0.0	0.0	36.2	36.2
2.0~2.9	29.0	23.4	25.0	27.2	28.6	30.5	37.1	40.5	32.4	24.8	17.7	15.6	11.7	13.5	26.6	34.6	0.0	0.0	0.0	30.6	30.6
3.0~3.9	22.8	18.7	20.5	22.4	24.3	35.9	34.5	34.8	25.3	22.2	20.6	18.1	14.2	12.0	18.6	24.3	0.0	0.0	0.0	24.3	24.3
4.0~4.9	20.9	17.3	19.9	23.7	21.3	19.5	32.0	30.6	24.5	17.9	16.1	10.8	11.3	10.8	13.0	20.3	0.0	0.0	0.0	20.7	20.7
5.0~5.9	15.7	22.5	24.5	22.1	20.4	25.8	34.7	29.2	23.5	23.1	13.7	13.9	9.0	11.3	11.3	12.5	0.0	0.0	0.0	19.2	19.2
6.0~6.9	10.8	41.4	22.6	20.2	20.2	18.5	39.6	25.8	31.0	17.8	11.0	0.0	7.8	10.5	11.2	11.5	0.0	0.0	0.0	18.3	18.3
7.0~7.9	8.0	32.0	13.5	16.0	16.3	0.0	47.8	34.0	25.2	20.4	22.0	11.0	14.1	8.8	11.6	15.5	0.0	0.0	0.0	17.7	17.7
8.0~8.9	0.0	0.0	15.5	23.0	18.0	0.0	27.3	34.1	31.7	13.0	0.0	0.0	9.5	10.1	11.4	12.6	0.0	0.0	0.0	16.1	16.1
9.0~9.9	9.0	0.0	0.0	9.0	0.0	0.0	0.0	26.0	42.0	16.0	0.0	0.0	8.7	15.0	12.8	12.0	0.0	0.0	0.0	13.5	13.5
10.0~	6.8	0.0	15.3	19.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.2	12.3	12.0	0.0	0.0	0.0	12.2	12.2
Average	32.3	29.7	29.7	27.8	30.4	34.9	38.5	38.8	33.7	26.7	27.8	23.6	17.7	19.3	26.8	34.5	47.3	0.0	0.0	32.6	32.6

Table D3.2.6 - (2) Mean Concentration of NOx by Wind Direction and Wind Speed (J2 : non-heating season)

Wind speed	Wind direction																	CALM	TOTAL		
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW					
0~0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.1	35.1
0.4~0.9	29.8	31.2	34.4	28.7	25.1	31.4	34.4	35.0	30.8	26.3	27.1	26.4	27.0	33.8	35.7	32.3	0.0	0.0	0.0	31.5	31.5
1.0~1.9	23.4	20.7	24.7	24.3	26.6	27.6	30.5	34.5	28.0	26.8	14.7	15.0	18.1	23.0	30.8	29.0	0.0	0.0	0.0	27.4	27.4
2.0~2.9	18.5	18.4	22.6	19.7	22.1	23.8	30.1	31.3	27.5	21.7	14.2	9.2	10.5	13.0	23.3	26.1	0.0	0.0	0.0	23.1	23.1
3.0~3.9	19.3	16.3	19.2	17.8	17.7	22.6	29.9	25.2	23.4	19.5	15.4	8.2	12.3	11.5	17.7	19.4	0.0	0.0	0.0	19.0	19.0
4.0~4.9	22.3	16.9	21.4	22.8	20.5	19.2	29.2	27.3	22.0	11.0	13.0	7.7	8.2	10.1	11.6	15.6	0.0	0.0	0.0	17.8	17.8
5.0~5.9	15.5	23.0	23.8	19.0	19.0	21.4	29.4	25.3	17.4	14.6	10.4	6.4	8.2	9.0	8.7	8.1	0.0	0.0	0.0	15.6	15.6
6.0~6.9	9.3	41.4	22.6	31.5	24.6	24.0	27.4	25.5	16.3	15.2	11.0	0.0	7.4	7.7	8.8	6.6	0.0	0.0	0.0	16.0	16.0
7.0~7.9	8.0	32.0	12.6	25.9	23.5	0.0	24.0	19.5	20.2	14.8	0.0	6.0	9.3	6.1	9.2	11.5	0.0	0.0	0.0	14.0	14.0
8.0~8.9	0.0	0.0	15.5	23.0	0.0	0.0	19.0	22.0	32.0	16.0	0.0	0.0	6.3	5.4	9.5	9.0	0.0	0.0	0.0	14.2	14.2
9.0~9.9	9.0	0.0	0.0	0.0	0.0	0.0	0.0	26.0	0.0	16.0	0.0	0.0	7.0	4.0	6.1	5.0	0.0	0.0	0.0	10.2	10.2
10.0~	0.0	0.0	15.3	19.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.7	0.0	0.0	0.0	0.0	12.1	12.1
Average	22.8	22.2	24.1	22.3	23.3	26.1	30.5	30.2	25.9	22.3	17.9	14.7	15.1	16.5	23.4	25.7	35.1	0.0	0.0	24.6	24.6

Table D3.2.6 - (3) Mean Concentration of NOx by Wind Direction and Wind Speed (J2 : heating season)

Wind speed	Wind direction																	CALM	TOTAL		
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW					
0~0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	55.5	55.5
0.4~0.9	45.5	50.8	47.1	43.1	41.3	48.5	56.0	58.7	61.6	40.9	60.8	63.1	47.5	48.3	58.0	57.1	0.0	0.0	0.0	52.2	52.2
1.0~1.9	42.8	41.8	36.2	37.6	40.9	40.6	47.1	53.7	49.4	35.8	46.8	35.9	30.9	33.3	41.5	51.6	0.0	0.0	0.0	45.6	45.6
2.0~2.9	37.1	31.7	28.1	35.4	36.8	38.4	41.4	47.2	39.7	31.5	28.2	30.3	16.4	16.2	32.7	42.9	0.0	0.0	0.0	39.4	39.4
3.0~3.9	24.9	25.1	25.4	27.2	29.4	40.7	37.6	41.8	29.0	27.9	28.1	37.1	16.9	13.4	20.0	29.8	0.0	0.0	0.0	30.5	30.5
4.0~4.9	19.8	22.5	15.4	24.5	21.8	19.9	34.2	33.7	29.7	27.1	23.8	15.6	15.0	11.5	15.9	25.1	0.0	0.0	0.0	24.3	24.3
5.0~5.9	16.0	13.0	26.0	24.9	22.2	48.0	36.0	33.7	34.6	36.9	21.3	35.0	10.1	13.2	14.2	17.4	0.0	0.0	0.0	23.5	23.5
6.0~6.9	17.0	0.0	22.5	17.0	8.6	13.0	43.4	26.0	42.7	21.0	0.0	0.0	8.1	12.6	13.4	14.0	0.0	0.0	0.0	20.1	20.1
7.0~7.9	0.0	0.0	18.0	11.4	9.0	0.0	63.7	37.1	30.2	27.0	22.0	16.0	16.5	12.1	12.9	16.3	0.0	0.0	0.0	20.1	20.1
8.0~8.9	0.0	0.0	0.0	0.0	18.0	0.0	31.5	39.0	31.6	7.0	0.0	0.0	11.4	13.6	11.9	12.8	0.0	0.0	0.0	16.7	16.7
9.0~9.9	0.0	0.0	0.0	9.0	0.0	0.0	0.0	0.0	42.0	0.0	0.0	0.0	12.0	16.2	13.9	12.2	0.0	0.0	0.0	14.1	14.1
10.0~	6.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.2	12.7	12.0	0.0	0.0	0.0	12.2	12.2
Average	39.6	41.8	36.7	31.9	36.1	41.5	43.4	45.5	44.5	34.2	46.2	41.2	22.4	23.9	31.1	42.7	55.5	0.0	0.0	40.4	40.4

Table D3.2.7 - (1) Mean Concentration of SO2 by Wind Direction and Wind Speed (J2 : all seasons)

Wind speed	Wind direction (ppb)																	TOTAL
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	
0~0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.9	21.9
0.4~0.9	26.9	16.7	34.9	21.8	22.2	36.7	22.1	25.0	20.2	19.7	22.4	16.1	18.1	18.8	19.8	21.3	0.0	22.5
1.0~1.9	15.7	14.5	14.3	15.1	15.7	17.1	25.1	26.5	26.4	25.6	16.9	7.9	8.6	8.4	13.5	17.8	0.0	17.9
2.0~2.9	13.0	9.0	8.6	8.0	9.9	14.9	21.3	30.3	29.5	15.3	11.1	8.3	4.7	3.0	8.3	14.6	0.0	15.1
3.0~3.9	9.2	5.4	5.2	6.9	8.7	13.0	21.0	26.0	24.6	12.5	10.4	5.2	5.8	3.5	5.9	9.6	0.0	12.2
4.0~4.9	6.3	3.0	3.3	7.9	9.1	6.5	20.2	29.1	18.8	6.1	8.0	3.0	3.4	4.0	3.7	4.9	0.0	11.4
5.0~5.9	4.7	3.0	5.8	7.5	6.2	28.2	11.7	27.5	9.1	6.0	10.6	2.7	2.4	4.2	3.1	3.5	0.0	9.7
6.0~6.9	3.0	3.0	3.2	16.7	6.1	57.0	15.9	22.8	9.7	4.5	1.0	0.0	2.6	3.2	3.1	4.4	0.0	8.9
7.0~7.9	0.0	3.0	5.0	13.9	9.4	0.0	25.6	12.7	8.6	6.0	12.0	2.5	1.9	2.2	3.7	3.2	0.0	6.8
8.0~8.9	0.0	0.0	0.0	2.7	19.0	0.0	32.3	26.5	8.1	4.0	0.0	0.0	4.1	2.7	3.9	5.1	0.0	7.1
9.0~9.9	4.0	0.0	0.0	5.0	0.0	0.0	0.0	23.3	61.0	1.0	0.0	0.0	2.0	4.6	4.0	4.7	0.0	5.4
10.0~	4.5	0.0	0.3	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.3	2.6	3.5	0.0	3.0
Average	16.7	11.5	15.2	12.0	13.6	19.5	22.0	27.0	22.3	16.6	16.3	9.1	7.7	7.0	9.8	14.7	21.9	16.2

Table D3.2.7 - (2) Mean Concentration of SO2 by Wind Direction and Wind Speed (J2 : non-heating season)

Wind speed	Wind direction (ppb)																	TOTAL
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	
0~0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.8	5.8
0.4~0.9	9.0	6.6	9.6	13.3	6.0	13.7	14.1	8.5	12.8	13.9	9.7	9.1	6.8	4.6	4.9	5.0	0.0	8.2
1.0~1.9	6.3	9.6	10.4	8.4	13.6	14.8	26.3	23.9	21.6	22.2	12.5	6.2	7.8	6.2	4.9	3.4	0.0	10.8
2.0~2.9	2.8	4.7	5.7	4.8	8.3	15.9	30.6	39.0	31.3	16.9	10.4	5.6	3.9	2.4	3.1	3.2	0.0	10.8
3.0~3.9	5.0	2.9	2.6	4.4	7.2	22.9	31.6	29.5	21.9	13.4	14.1	2.4	5.6	3.0	3.2	2.7	0.0	10.0
4.0~4.9	3.9	3.0	2.8	3.8	6.9	8.2	26.2	36.6	19.3	5.0	7.0	2.4	1.8	2.7	2.9	2.2	0.0	11.1
5.0~5.9	2.8	3.2	4.7	3.7	3.9	31.6	3.3	29.6	12.0	5.3	7.7	1.6	1.6	2.6	2.4	0.9	0.0	8.8
6.0~6.9	2.8	3.0	3.0	2.2	3.1	88.0	17.1	32.0	6.4	3.7	1.0	0.0	1.5	2.1	1.8	1.1	0.0	7.1
7.0~7.9	0.0	3.0	3.0	2.9	0.0	0.0	18.0	16.8	6.1	4.7	0.0	0.0	1.8	0.9	2.6	2.0	0.0	3.8
8.0~8.9	0.0	0.0	0.0	2.7	0.0	0.0	65.0	38.8	5.0	1.5	0.0	0.0	0.0	0.3	2.3	2.0	0.0	7.0
9.0~9.9	4.0	0.0	0.0	0.0	0.0	0.0	0.0	23.3	0.0	1.0	0.0	0.0	1.0	0.5	0.6	0.0	0.0	4.8
10.0~	0.0	0.0	0.3	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0	1.0
Average	5.7	6.0	6.3	6.1	9.1	15.8	26.5	28.6	19.9	14.5	10.8	5.6	5.0	3.6	3.7	3.3	5.8	9.7

Table D3.2.7 - (3) Mean Concentration of SO2 by Wind Direction and Wind Speed (J2 : heating season)

Wind speed	Wind direction (ppb)																	TOTAL
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	
0~0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.2	33.2
0.4~0.9	38.3	25.1	48.1	26.2	28.6	45.6	27.7	38.2	30.8	28.5	39.5	28.1	39.0	31.8	36.9	33.5	0.0	34.7
1.0~1.9	24.6	21.8	18.3	19.6	17.4	19.0	24.3	28.8	32.0	32.8	27.3	12.3	12.9	16.7	25.5	34.0	0.0	25.9
2.0~2.9	21.2	16.4	12.5	11.6	12.0	13.7	15.2	23.8	26.7	11.8	12.9	14.9	8.1	6.4	18.8	26.7	0.0	20.4
3.0~3.9	12.0	12.7	14.8	9.5	9.9	9.2	13.7	23.4	29.7	10.6	5.1	11.0	6.0	5.3	10.5	18.1	0.0	15.0
4.0~4.9	9.0	2.0	4.6	11.4	10.6	3.8	15.4	22.1	17.7	7.6	10.5	3.8	5.5	5.7	5.6	8.3	0.0	11.9
5.0~5.9	7.5	0.0	8.3	10.9	9.0	11.0	13.7	25.2	3.7	7.1	17.3	5.7	3.6	5.6	4.1	6.5	0.0	10.7
6.0~6.9	4.0	0.0	5.0	20.9	13.8	26.0	15.5	17.9	12.1	5.4	0.0	0.0	3.4	4.2	4.5	6.0	0.0	10.5
7.0~7.9	0.0	0.0	15.0	19.1	18.8	0.0	30.7	11.8	11.4	7.6	12.0	5.0	2.0	3.9	4.3	3.4	0.0	8.7
8.0~8.9	0.0	0.0	0.0	0.0	19.0	0.0	16.0	21.6	9.8	9.0	0.0	0.0	6.6	4.6	4.4	5.2	0.0	7.2
9.0~9.9	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	61.0	0.0	0.0	0.0	4.0	5.2	4.6	4.9	0.0	5.5
10.0~	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.3	2.7	3.5	0.0	3.2
Average	25.6	21.1	26.6	16.6	17.3	22.5	19.1	25.7	25.7	20.2	26.6	16.3	12.8	13.3	17.8	26.3	33.2	23.0

Table D3.2.8 - (1) Mean Concentration of NOx by Wind Direction and Wind Speed (J3 : all seasons)

Wind speed	Wind direction																CALM	TOTAL	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW			
0~0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.8	20.8
0.4~0.9	21.2	21.2	20.9	20.3	20.7	25.5	22.6	20.7	17.4	17.7	15.6	15.1	15.8	19.5	20.7	22.7	0.0	20.4	
1.0~1.9	19.3	16.2	18.7	17.9	18.8	20.4	23.0	19.8	17.8	11.8	9.8	11.3	9.9	14.2	19.7	22.7	0.0	19.5	
2.0~2.9	18.0	10.2	10.5	14.7	13.2	16.0	22.0	19.4	13.4	10.4	7.0	6.0	5.4	9.3	16.7	23.3	0.0	17.8	
3.0~3.9	12.8	8.7	7.6	10.7	11.3	15.3	18.3	17.3	9.4	8.0	6.7	4.8	5.0	7.0	10.9	21.2	0.0	13.9	
4.0~4.9	8.9	6.2	6.8	10.8	12.3	11.8	17.7	14.3	9.6	5.0	4.9	3.6	4.4	4.9	7.9	16.4	0.0	10.6	
5.0~5.9	6.6	7.7	8.6	10.0	14.1	8.3	13.5	12.1	7.7	6.0	5.0	4.8	3.7	4.8	4.2	6.9	0.0	7.8	
6.0~6.9	6.0	11.3	7.5	9.2	7.6	9.5	17.0	11.8	10.4	5.1	4.0	0.0	3.5	5.6	4.2	3.0	0.0	7.5	
7.0~7.9	8.0	9.5	7.3	8.6	7.6	0.0	12.4	12.9	8.9	5.5	6.0	3.5	3.1	3.7	3.7	3.4	0.0	6.4	
8.0~8.9	0.0	0.0	3.0	7.0	14.0	0.0	10.0	11.5	8.6	4.7	0.0	0.0	3.7	5.0	3.9	2.2	0.0	5.1	
9.0~9.9	8.0	0.0	0.0	3.0	0.0	0.0	0.0	24.7	13.0	5.0	0.0	0.0	3.0	6.3	4.4	2.0	0.0	4.7	
10.0~	0.3	0.0	3.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.2	3.9	2.1	0.0	3.4	
Average	18.4	14.5	14.4	14.3	16.0	19.4	21.0	17.6	13.8	11.5	10.4	9.3	7.8	10.2	14.3	21.4	20.8	16.8	

Table D3.2.8 - (2) Mean Concentration of NOx by Wind Direction and Wind Speed (J3 : non-heating season)

Wind speed	Wind direction																CALM	TOTAL	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW			
0~0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.3	15.3
0.4~0.9	14.3	15.4	14.5	12.0	13.0	18.2	12.5	14.1	13.4	14.4	10.7	10.8	11.7	16.5	16.3	16.7	0.0	14.5	
1.0~1.9	13.0	11.5	13.2	10.4	13.4	14.4	15.1	14.6	11.7	9.9	7.5	8.0	9.3	13.2	15.1	16.3	0.0	13.9	
2.0~2.9	11.0	7.6	8.1	9.3	9.8	12.4	14.4	13.4	9.4	9.2	6.3	4.2	5.1	8.8	13.0	15.6	0.0	12.0	
3.0~3.9	11.4	7.6	6.9	7.7	8.6	9.1	14.6	11.3	8.7	6.6	6.9	3.8	4.7	7.6	10.5	14.3	0.0	10.4	
4.0~4.9	7.4	6.4	7.3	11.0	11.5	13.5	11.7	10.8	10.6	4.1	4.4	3.2	4.3	4.6	7.1	13.7	0.0	8.8	
5.0~5.9	6.2	7.9	8.5	10.6	15.7	8.0	7.8	9.4	7.9	5.1	4.0	2.7	2.9	4.0	4.8	5.3	0.0	6.8	
6.0~6.9	6.5	11.3	7.4	7.7	8.0	8.0	11.1	11.3	10.6	5.8	4.0	0.0	2.8	3.8	4.5	5.0	0.0	6.7	
7.0~7.9	8.0	9.5	5.4	7.5	5.0	0.0	8.0	10.3	9.7	4.8	0.0	3.0	3.8	2.6	3.9	4.0	0.0	5.5	
8.0~8.9	0.0	0.0	3.0	7.0	0.0	0.0	11.0	11.0	7.2	5.0	0.0	0.0	2.3	3.9	4.4	2.0	0.0	5.3	
9.0~9.9	8.0	0.0	0.0	0.0	0.0	0.0	0.0	24.7	0.0	5.0	0.0	0.0	2.0	4.5	3.1	5.0	0.0	7.8	
10.0~	0.0	0.0	3.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	3.7	
Average	12.3	10.2	9.9	9.8	11.5	13.7	14.0	12.7	10.6	9.7	7.7	6.6	6.9	9.4	12.1	15.3	15.3	12.1	

Table D3.2.8 - (3) Mean Concentration of NOx by Wind Direction and Wind Speed (J3 : heating season)

Wind speed	Wind direction																CALM	TOTAL	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW			
0~0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.3	24.3
0.4~0.9	25.3	26.0	23.9	24.4	23.6	28.2	29.2	25.5	22.4	22.7	21.4	22.4	22.0	22.0	25.4	26.8	0.0	25.0	
1.0~1.9	24.7	22.5	24.0	22.6	22.9	25.1	27.9	24.1	24.5	15.7	15.1	18.7	13.5	18.0	25.9	29.4	0.0	25.5	
2.0~2.9	23.3	14.8	13.5	20.5	17.5	20.4	26.7	23.7	18.9	12.7	9.1	10.0	6.3	11.4	23.6	30.8	0.0	24.4	
3.0~3.9	13.6	11.8	10.0	13.8	13.4	17.6	20.8	21.5	10.7	10.9	6.4	6.6	5.4	5.4	11.7	29.2	0.0	17.9	
4.0~4.9	10.3	3.0	5.1	10.6	12.8	9.0	22.1	17.5	7.4	6.3	6.3	4.3	4.5	5.2	9.3	19.0	0.0	12.9	
5.0~5.9	7.3	3.0	8.8	9.5	12.2	10.0	14.9	15.3	7.4	7.5	7.3	11.0	4.9	5.5	3.6	8.7	0.0	9.0	
6.0~6.9	4.0	0.0	8.5	9.7	6.8	11.0	18.8	12.0	10.1	4.2	0.0	0.0	4.1	6.9	3.9	2.0	0.0	8.1	
7.0~7.9	0.0	0.0	17.0	9.2	10.3	0.0	15.3	13.5	8.0	6.2	6.0	4.0	2.8	5.2	3.6	3.3	0.0	7.0	
8.0~8.9	0.0	0.0	0.0	0.0	14.0	0.0	9.5	11.6	9.4	4.0	0.0	0.0	4.8	5.9	3.8	2.2	0.0	5.1	
9.0~9.9	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	13.0	0.0	0.0	0.0	4.0	6.5	4.6	1.9	0.0	4.2	
10.0~	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.2	3.9	2.1	0.0	3.4	
Average	22.9	21.4	19.9	17.7	19.5	23.6	25.3	21.5	18.0	14.7	15.3	14.5	9.4	11.4	16.9	27.0	24.3	21.3	

Table D3.2.9 - (1) Mean Concentration of SO2 by Wind Direction and Wind Speed (J3 : all seasons)

Wind speed	Wind direction																CALM	TOTAL	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW			
0~0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.6	22.6
0.4~0.9	30.1	20.0	28.9	25.7	24.9	34.7	27.2	27.5	21.0	17.5	20.3	20.3	29.9	27.1	21.8	21.5	0.0	24.8	
1.0~1.9	18.1	18.7	23.5	16.9	16.2	20.2	22.8	26.7	28.2	17.0	15.1	9.7	18.2	15.3	17.4	17.6	0.0	19.5	
2.0~2.9	19.0	9.5	12.1	8.7	9.2	10.6	16.4	20.7	18.1	14.1	11.9	9.3	3.8	5.7	10.6	15.2	0.0	13.9	
3.0~3.9	10.7	11.6	4.6	6.5	8.9	13.2	15.2	17.3	12.0	10.0	6.4	4.5	4.7	3.4	7.2	12.6	0.0	10.6	
4.0~4.9	5.5	7.8	6.1	10.2	8.8	4.3	13.8	14.8	7.3	8.6	4.4	2.6	3.0	4.2	4.6	7.3	0.0	8.3	
5.0~5.9	6.3	6.3	6.6	6.8	6.2	6.2	10.5	11.5	10.4	5.4	11.6	5.4	2.5	4.7	3.5	4.2	0.0	6.8	
6.0~6.9	9.2	14.5	3.1	11.7	7.9	12.5	10.4	13.6	13.7	7.1	1.0	0.0	3.3	4.6	4.2	3.9	0.0	7.5	
7.0~7.9	19.0	13.5	3.8	11.9	12.9	0.0	8.8	13.7	7.1	6.8	15.0	2.5	2.3	3.2	3.7	3.3	0.0	6.8	
8.0~8.9	0.0	0.0	1.5	4.7	28.0	0.0	12.0	16.1	7.6	5.7	0.0	0.0	5.0	3.5	4.2	4.0	0.0	5.8	
9.0~9.9	19.0	0.0	0.0	5.0	0.0	0.0	0.0	2.7	20.0	1.0	0.0	0.0	3.5	6.3	4.6	4.1	0.0	4.9	
10.0~	2.3	0.0	1.3	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.6	3.5	3.0	0.0	3.5	
Average	20.0	15.3	17.3	13.1	14.2	19.2	18.8	20.6	18.5	13.8	14.6	10.9	11.5	10.4	11.9	15.3	22.6	16.2	

Table D3.2.9 - (2) Mean Concentration of SO2 by Wind Direction and Wind Speed (J3 : non-heating season)

Wind speed	Wind direction																CALM	TOTAL
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW		
0~0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.8	5.8
0.4~0.9	11.6	11.5	7.5	5.0	9.9	12.5	9.5	7.3	6.1	10.7	12.0	11.4	18.1	13.7	9.8	9.0	0.0	10.3
1.0~1.9	11.1	11.1	18.8	6.4	9.5	11.0	10.2	12.1	8.4	10.4	10.5	5.9	18.4	10.9	9.6	6.4	0.0	9.9
2.0~2.9	12.5	4.8	11.2	4.9	5.6	5.8	6.1	7.6	8.4	12.5	8.8	5.2	2.4	4.5	5.9	5.2	0.0	6.3
3.0~3.9	9.6	10.9	2.8	4.8	6.0	5.6	6.4	5.8	8.3	6.1	5.5	2.5	2.7	2.4	3.5	6.0	0.0	5.1
4.0~4.9	3.1	8.4	7.2	12.1	5.2	3.6	6.1	6.8	5.8	3.9	2.4	2.2	0.8	2.0	2.1	2.9	0.0	4.6
5.0~5.9	6.5	6.5	6.3	3.7	5.0	6.8	1.2	6.6	5.8	2.5	3.7	1.4	0.6	1.7	1.8	1.1	0.0	3.7
6.0~6.9	10.8	14.5	3.2	3.8	4.3	9.0	9.1	6.8	6.0	4.0	1.0	0.0	0.7	1.3	1.7	3.1	0.0	3.9
7.0~7.9	19.0	13.5	2.2	4.5	2.0	0.0	4.5	6.0	2.8	1.7	0.0	0.0	2.3	1.0	1.7	1.5	0.0	2.9
8.0~8.9	0.0	0.0	1.5	4.7	0.0	0.0	6.0	7.3	1.8	0.5	0.0	0.0	1.0	0.8	1.9	1.0	0.0	2.2
9.0~9.9	19.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	1.0	0.0	0.0	1.0	1.0	1.1	1.0	0.0	2.5
10.0~	0.0	0.0	1.3	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0	1.6
Average	11.3	9.5	9.8	6.1	7.3	8.8	7.8	8.3	7.2	8.9	9.2	6.1	8.8	6.0	6.2	5.9	5.8	7.2

Table D3.2.9 - (3) Mean Concentration of SO2 by Wind Direction and Wind Speed (J3 : heating season)

Wind speed	Wind direction																CALM	TOTAL
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW		
0~0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.5	33.5
0.4~0.9	40.7	26.8	39.2	35.8	30.6	42.7	39.1	42.1	40.0	27.8	30.1	35.4	47.7	38.3	34.8	30.3	0.0	36.3
1.0~1.9	24.0	29.2	28.0	23.4	21.3	27.3	30.7	39.1	50.0	31.0	25.6	18.1	17.3	31.8	27.9	29.1	0.0	29.8
2.0~2.9	24.0	17.4	13.3	12.8	13.7	16.5	22.8	30.1	31.4	17.4	20.7	18.2	9.2	12.4	19.4	24.7	0.0	22.7
3.0~3.9	11.3	13.4	11.2	8.3	11.2	16.0	21.2	25.6	19.0	17.8	7.6	8.1	7.5	6.4	13.0	20.1	0.0	17.1
4.0~4.9	7.6	0.0	3.0	8.6	11.1	5.5	19.4	22.3	10.4	15.0	9.3	3.2	5.6	6.6	9.6	11.6	0.0	12.8
5.0~5.9	6.0	1.0	7.2	9.7	7.8	3.0	12.7	17.0	18.8	10.1	30.0	16.8	5.1	7.1	5.3	7.6	0.0	10.4
6.0~6.9	3.0	0.0	1.5	14.0	15.7	16.0	10.8	17.0	19.3	10.8	0.0	0.0	5.1	7.0	6.3	4.3	0.0	10.3
7.0~7.9	0.0	0.0	12.0	15.4	23.8	0.0	11.7	15.3	11.8	13.0	15.0	5.0	2.4	6.1	4.8	3.7	0.0	9.3
8.0~8.9	0.0	0.0	0.0	0.0	28.0	0.0	15.0	18.7	10.8	16.0	0.0	0.0	8.0	5.7	4.8	4.1	0.0	7.2
9.0~9.9	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	20.0	0.0	0.0	0.0	6.0	6.9	5.1	4.2	0.0	5.4
10.0~	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.6	3.6	3.0	0.0	3.6
Average	26.5	24.7	26.5	18.3	19.6	26.8	25.6	30.1	33.6	22.3	24.1	20.2	16.4	17.6	18.8	24.1	33.5	25.0

Table D3.2.10 - (1) Mean Concentration of NOx by Wind Direction and Wind Speed (JF2 : all seasons)

Wind speed	Wind direction																	CALM	TOTAL	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW				
0~0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.4	10.4
0.4~0.9	9.6	8.7	8.8	9.1	8.1	7.2	6.3	4.7	5.5	8.3	9.0	9.7	8.9	9.6	9.1	8.7	0.0	0.0	8.3	8.3
1.0~1.9	12.2	7.4	7.9	7.3	5.8	4.4	3.6	2.7	3.1	5.7	6.1	6.3	5.4	8.4	7.6	7.4	0.0	0.0	6.4	6.4
2.0~2.9	17.6	6.3	4.8	4.0	3.7	2.4	2.2	1.6	2.1	4.4	5.3	3.7	2.3	2.8	2.7	3.0	0.0	0.0	5.0	5.0
3.0~3.9	21.5	5.8	4.1	3.0	2.5	1.4	0.9	1.1	1.8	3.3	3.4	2.6	1.8	3.1	2.1	2.7	0.0	0.0	4.0	4.0
4.0~4.9	11.5	6.9	4.6	2.3	2.3	0.0	1.2	0.6	1.5	2.8	3.0	2.6	1.6	1.7	1.1	4.7	0.0	0.0	3.0	3.0
5.0~5.9	0.0	0.0	3.1	2.1	1.9	0.0	0.0	0.0	1.6	2.5	3.0	2.0	1.1	1.7	1.3	0.0	0.0	0.0	2.4	2.4
6.0~6.9	0.0	0.0	2.5	1.4	0.0	0.0	0.0	0.0	2.0	2.0	2.4	2.2	1.2	1.5	2.0	0.0	0.0	0.0	2.1	2.1
7.0~7.9	0.0	0.0	3.0	1.5	0.0	0.0	0.0	0.0	3.0	2.3	2.5	1.4	1.5	2.0	2.0	0.0	0.0	0.0	2.1	2.1
8.0~8.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	1.8	2.0	1.5	1.0	2.0	0.0	0.0	0.0	1.8	1.8
9.0~9.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	1.0	1.0	0.0	0.0	0.0	0.0	0.0	1.4	1.4
10.0~	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	1.3	1.0	0.0	0.0	0.0	0.0	0.0	1.8	1.8
Average	13.1	7.1	6.2	5.2	5.3	4.9	3.9	2.9	2.9	4.2	4.3	3.8	3.7	6.6	7.4	7.9	10.4	5.9	5.9	5.9

Table D3.2.10 - (2) Mean Concentration of NOx by Wind Direction and Wind Speed (JF2: non-heating season)

Wind speed	Wind direction																	CALM	TOTAL	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW				
0~0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.9	8.9
0.4~0.9	8.2	7.7	7.7	7.4	7.0	7.4	6.3	4.3	5.2	7.0	9.4	9.6	9.9	10.1	7.5	7.0	0.0	0.0	7.4	7.4
1.0~1.9	9.6	6.9	6.5	6.2	4.6	3.3	3.4	2.3	2.6	6.4	6.2	6.0	4.5	5.9	4.8	5.1	0.0	0.0	5.3	5.3
2.0~2.9	13.6	4.9	4.6	3.3	3.1	2.2	1.2	1.6	1.5	4.7	5.7	3.3	2.0	2.8	2.5	2.6	0.0	0.0	4.2	4.2
3.0~3.9	12.6	3.9	4.6	2.6	2.3	0.5	0.9	1.3	1.4	2.7	3.6	2.4	1.6	3.3	2.1	2.7	0.0	0.0	3.3	3.3
4.0~4.9	6.6	4.0	4.4	1.8	2.2	0.0	1.3	0.0	2.2	2.0	2.5	1.9	1.0	1.8	1.1	6.5	0.0	0.0	2.5	2.5
5.0~5.9	0.0	0.0	1.2	1.0	0.0	0.0	0.0	0.0	2.0	1.8	2.7	1.4	0.7	3.0	1.0	0.0	0.0	0.0	1.7	1.7
6.0~6.9	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	2.3	1.4	0.7	0.7	0.0	0.0	0.0	0.0	1.7	1.7
7.0~7.9	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	2.1	1.7	1.4	0.8	4.0	0.0	0.0	0.0	0.0	1.7	1.7
8.0~8.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	1.3	2.5	1.0	0.0	0.0	0.0	0.0	0.0	1.8	1.8
9.0~9.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10.0~	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Average	10.1	6.0	5.5	4.3	4.3	4.2	3.6	2.5	2.4	4.5	4.7	3.9	3.3	5.7	5.4	6.0	8.9	5.1	5.1	5.1

Table D3.2.10 - (3) Mean Concentration of NOx by Wind Direction and Wind Speed (JF2 : heating season)

Wind speed	Wind direction																	CALM	TOTAL	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW				
0~0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.6	11.6
0.4~0.9	11.2	9.6	9.7	10.7	9.0	7.0	6.2	5.1	5.8	9.3	8.7	9.8	8.0	9.3	11.5	10.7	0.0	0.0	9.3	9.3
1.0~1.9	14.9	7.8	9.0	8.3	7.3	6.0	3.9	3.3	3.7	4.8	5.9	6.8	6.7	13.9	10.5	10.0	0.0	0.0	7.6	7.6
2.0~2.9	21.5	7.4	5.2	5.0	4.8	2.9	3.5	1.8	2.9	4.1	4.8	4.4	3.2	2.8	5.7	4.7	0.0	0.0	6.1	6.1
3.0~3.9	29.9	7.9	3.4	3.7	2.7	1.7	0.8	1.0	2.0	3.6	3.3	2.8	2.2	2.0	3.0	0.0	0.0	0.0	4.5	4.5
4.0~4.9	36.0	12.0	4.8	2.5	2.3	0.0	1.0	0.9	1.3	3.1	3.2	2.9	2.2	1.6	0.0	1.0	0.0	0.0	3.2	3.2
5.0~5.9	0.0	0.0	3.5	2.4	2.1	0.0	0.0	0.0	1.4	2.8	3.1	2.5	1.9	1.2	1.5	0.0	0.0	0.0	2.7	2.7
6.0~6.9	0.0	0.0	2.5	1.4	0.0	0.0	0.0	0.0	2.0	2.0	2.4	2.6	1.7	1.8	2.0	0.0	0.0	0.0	2.3	2.3
7.0~7.9	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	2.4	3.2	1.4	1.7	1.6	2.0	0.0	0.0	0.0	2.4	2.4
8.0~8.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	2.4	1.5	1.7	1.0	2.0	0.0	0.0	0.0	1.8	1.8
9.0~9.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	2.2	2.2
10.0~	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	1.3	1.0	0.0	0.0	0.0	0.0	0.0	1.8	1.8
Average	16.2	8.2	6.7	6.1	6.4	5.9	4.5	3.4	3.3	3.9	4.0	3.8	4.2	7.9	10.4	10.3	11.6	6.7	6.7	6.7

Table D3.2.11 - (1) Mean Concentration of SO2 by Wind Direction and Wind Speed (JF2 : all seasons)

Wind speed	Wind direction																	CALM	TOTAL	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW				
0~0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.8	10.8
0.4~0.9	8.0	10.3	11.8	12.9	9.4	6.6	6.3	6.7	5.9	18.8	17.3	9.3	10.3	13.9	6.8	6.5	0.0	0.0	9.1	9.1
1.0~1.9	9.5	18.1	20.8	16.4	8.5	6.3	6.9	5.6	6.5	7.5	8.0	7.8	10.2	11.3	8.8	8.7	0.0	0.0	10.8	10.8
2.0~2.9	8.8	17.6	19.5	7.6	6.2	6.1	4.1	4.2	4.4	5.5	5.4	4.9	3.4	2.8	4.9	4.8	0.0	0.0	8.8	8.8
3.0~3.9	9.2	10.2	17.0	4.6	4.6	4.4	5.2	6.1	3.0	5.0	5.1	4.3	3.1	2.4	2.3	2.0	0.0	0.0	6.7	6.7
4.0~4.9	4.3	13.5	17.5	4.5	3.8	0.0	4.0	7.5	2.6	4.7	5.6	5.0	2.5	3.1	1.5	2.3	0.0	0.0	6.3	6.3
5.0~5.9	0.0	0.0	6.7	3.5	4.6	0.0	0.0	0.0	2.0	3.8	4.3	4.4	2.0	3.3	2.7	0.0	0.0	4.0	4.0	
6.0~6.9	0.0	0.0	5.2	1.5	0.0	0.0	0.0	0.0	4.0	3.2	4.2	7.5	2.1	2.5	2.7	0.0	0.0	4.3	4.3	
7.0~7.9	0.0	0.0	7.3	1.0	0.0	0.0	0.0	0.0	4.0	2.8	3.5	4.3	2.4	2.2	3.0	0.0	0.0	3.3	3.3	
8.0~8.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6	3.7	3.5	1.5	1.0	3.0	0.0	0.0	3.1	3.1	
9.0~9.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	3.3	2.0	1.0	0.0	0.0	0.0	0.0	2.4	2.4	
10.0~	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	5.0	1.5	0.0	0.0	0.0	0.0	3.9	3.9	
Avarage	8.8	15.1	17.8	9.9	7.5	6.3	6.2	5.6	5.2	6.1	6.2	5.7	5.6	9.0	6.9	7.1	10.8	8.9	8.9	

Table D3.2.11 - (2) Mean Concentration of SO2 by Wind Direction and Wind Speed (JF2 : non-heating season)

Wind speed	Wind direction																	CALM	TOTAL
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW			
0~0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9	2.9
0.4~0.9	3.8	8.5	7.4	6.0	2.1	4.1	2.7	4.3	2.6	5.1	2.9	2.7	6.9	12.2	3.8	2.9	0.0	4.5	4.5
1.0~1.9	8.4	22.3	20.7	17.1	5.9	5.5	8.1	5.0	5.3	4.0	4.4	4.7	7.1	8.5	4.5	7.0	0.0	9.3	9.3
2.0~2.9	5.6	15.7	24.1	8.0	5.0	6.1	3.6	4.3	3.5	2.7	2.3	3.5	3.0	2.2	4.0	4.4	0.0	7.7	7.7
3.0~3.9	5.2	11.0	23.8	4.2	3.4	2.0	4.8	6.1	1.9	2.1	2.9	3.3	2.1	2.2	2.3	2.0	0.0	6.8	6.8
4.0~4.9	1.6	12.6	24.1	4.6	3.8	0.0	3.3	2.3	2.2	2.0	3.2	4.8	1.4	1.7	1.5	2.0	0.0	6.2	6.2
5.0~5.9	0.0	0.0	4.3	1.9	1.0	0.0	0.0	0.0	2.3	1.4	2.9	3.3	1.3	2.0	1.0	0.0	0.0	2.4	2.4
6.0~6.9	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	2.1	5.1	1.0	0.7	0.0	0.0	0.0	2.2	2.2
7.0~7.9	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.1	1.7	2.6	0.8	1.0	0.0	0.0	0.0	1.6	1.6
8.0~8.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	1.7	1.5	1.0	0.0	0.0	0.0	0.0	1.6	1.6
9.0~9.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0
10.0~	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Avarage	6.0	15.6	20.7	9.4	4.8	5.2	6.0	4.7	4.0	2.9	3.1	3.8	3.9	7.0	3.8	4.4	2.9	6.9	6.9

Table D3.2.11 - (3) Mean Concentration of SO2 by Wind Direction and Wind Speed (JF2 : heating season)

Wind speed	Wind direction																	CALM	TOTAL
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW			
0~0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.8	17.8
0.4~0.9	12.6	11.8	15.4	19.3	15.8	9.0	10.2	9.5	9.0	29.6	30.2	20.3	13.5	15.4	11.0	10.8	0.0	13.9	13.9
1.0~1.9	10.6	14.6	20.9	15.7	11.6	7.5	5.0	6.3	8.1	12.4	13.1	13.0	15.3	17.6	13.3	10.7	0.0	12.6	12.6
2.0~2.9	11.9	19.0	14.3	7.0	8.4	5.9	4.9	3.7	5.6	8.2	9.2	7.5	4.4	5.5	16.7	7.0	0.0	10.3	10.3
3.0~3.9	12.9	9.3	8.1	5.1	5.7	5.1	6.2	6.0	3.8	6.4	6.4	5.3	4.4	3.7	3.0	0.0	0.0	6.5	6.5
4.0~4.9	18.0	15.0	12.6	4.4	3.8	0.0	7.0	9.7	2.7	5.5	6.6	5.2	3.8	4.8	0.0	3.0	0.0	6.3	6.3
5.0~5.9	0.0	0.0	7.2	4.0	5.0	0.0	0.0	0.0	1.9	5.1	4.9	5.2	3.1	3.8	3.5	0.0	0.0	5.0	5.0
6.0~6.9	0.0	0.0	5.3	1.5	0.0	0.0	0.0	0.0	4.0	4.2	5.4	8.5	3.1	3.0	2.7	0.0	0.0	5.3	5.3
7.0~7.9	0.0	0.0	7.3	0.0	0.0	0.0	0.0	0.0	4.0	4.0	4.9	5.9	2.9	2.4	3.0	0.0	0.0	4.4	4.4
8.0~8.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	6.3	5.5	1.7	1.0	3.0	0.0	0.0	4.3	4.3
9.0~9.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.3	2.0	1.0	0.0	0.0	0.0	0.0	3.2	3.2
10.0~	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	5.0	1.5	0.0	0.0	0.0	0.0	3.9	3.9
Avarage	11.7	14.6	15.3	10.5	10.8	7.8	6.6	6.8	6.4	8.6	8.6	7.7	7.9	11.9	11.6	10.6	17.8	10.8	10.8

Table D3.2.12 - (1) Mean Concentration of NOx by Wind Direction and Wind Speed (J7 : all seasons)

Wind speed	Wind direction																(ppb)		
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL	
0~0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	54.5	54.5
0.4~0.9	47.7	33.5	33.0	32.2	33.3	38.7	42.0	47.8	50.4	50.2	38.9	32.6	28.3	18.9	41.9	47.6	0.0	43.2	
1.0~1.9	39.8	25.5	21.8	21.0	23.2	27.8	30.4	30.9	32.8	26.7	19.9	15.7	11.4	9.6	17.7	37.8	0.0	30.8	
2.0~2.9	29.3	20.2	17.5	17.1	18.9	23.8	21.3	21.2	21.2	21.9	16.8	12.5	7.2	8.2	9.5	23.4	0.0	21.1	
3.0~3.9	21.3	16.1	13.6	11.6	17.9	23.1	19.9	15.7	16.7	17.6	14.5	10.7	6.9	7.0	8.0	15.9	0.0	16.1	
4.0~4.9	15.5	15.5	13.5	12.7	17.8	22.0	23.0	12.7	12.6	14.8	13.9	10.5	8.3	4.9	6.7	9.9	0.0	13.8	
5.0~5.9	13.5	14.3	10.6	0.0	0.0	0.0	0.0	8.5	10.4	14.2	13.1	10.8	8.2	3.3	4.4	3.0	0.0	13.0	
6.0~6.9	11.3	14.5	9.6	0.0	0.0	0.0	0.0	0.0	7.3	13.8	12.6	7.5	8.2	5.0	6.9	0.0	0.0	12.4	
7.0~7.9	9.5	12.7	6.5	0.0	0.0	0.0	0.0	0.0	0.0	10.3	11.7	10.7	4.0	0.0	7.0	0.0	0.0	10.8	
8.0~8.9	0.0	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.5	6.6	0.0	12.0	0.0	0.0	0.0	0.0	8.4	
9.0~9.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.0	6.2	0.0	0.0	0.0	0.0	0.0	0.0	9.0	
10.0~	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0	0.0	0.0	0.0	6.0	
Average	33.1	20.9	20.2	21.3	23.9	29.0	31.4	31.8	29.7	22.2	16.5	13.8	11.8	10.6	22.9	40.8	54.5	29.2	

Table D3.2.12 - (2) Mean Concentration of NOx by Wind Direction and Wind Speed (J7 : non-heating season)

Wind speed	Wind direction																(ppb)	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
0~0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	45.2	45.2
0.4~0.9	38.6	26.7	25.6	22.5	28.4	35.0	33.1	37.4	41.1	41.3	42.5	24.4	19.2	11.1	28.3	35.6	0.0	33.8
1.0~1.9	28.6	22.0	18.4	18.8	21.3	24.7	25.3	24.2	28.4	23.2	17.1	12.5	8.0	8.9	13.3	20.7	0.0	22.6
2.0~2.9	20.6	16.6	14.6	14.7	17.8	23.4	20.2	19.3	17.8	19.0	14.2	9.2	5.0	6.3	7.9	14.2	0.0	16.6
3.0~3.9	15.0	13.8	11.6	10.4	16.8	24.4	17.7	16.5	14.2	16.8	12.2	7.6	5.7	6.4	5.5	6.6	0.0	13.4
4.0~4.9	12.0	13.3	12.6	12.0	0.0	0.0	23.0	11.3	11.0	14.1	11.3	6.9	8.2	0.0	0.0	10.3	0.0	12.1
5.0~5.9	13.8	13.0	10.6	0.0	0.0	0.0	0.0	7.0	9.2	11.8	9.8	6.2	5.0	0.0	0.0	0.0	0.0	11.4
6.0~6.9	8.5	12.7	9.6	0.0	0.0	0.0	0.0	0.0	8.5	9.3	8.1	5.7	0.0	0.0	0.0	0.0	0.0	10.2
7.0~7.9	6.9	8.4	6.5	0.0	0.0	0.0	0.0	0.0	0.0	7.0	6.9	0.0	0.0	0.0	0.0	0.0	0.0	7.3
8.0~8.9	0.0	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	5.6	0.0	0.0	0.0	0.0	0.0	0.0	6.1
9.0~9.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10.0~	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Average	26.0	17.5	16.3	17.9	21.4	25.9	25.0	24.7	25.1	19.7	15.2	10.8	8.9	8.9	17.2	28.0	45.2	23.6

Table D3.2.12 - (3) Mean Concentration of NOx by Wind Direction and Wind Speed (J7 : heating season)

Wind speed	Wind direction																(ppb)	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
0~0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	65.0	65.0
0.4~0.9	59.2	39.7	43.6	39.0	37.7	42.2	47.8	54.3	57.9	57.3	34.2	45.8	43.7	35.6	54.8	63.7	0.0	53.4
1.0~1.9	50.7	31.1	26.8	28.1	30.3	36.2	38.5	37.2	35.6	29.5	23.3	22.2	20.6	11.8	31.6	50.5	0.0	40.7
2.0~2.9	36.6	26.5	22.2	20.0	21.3	24.8	26.2	24.3	23.9	23.6	20.0	16.5	9.9	9.5	11.9	33.4	0.0	26.1
3.0~3.9	25.7	19.9	18.3	12.3	18.3	21.8	24.3	14.7	18.7	18.1	15.7	12.7	7.6	7.1	8.2	21.8	0.0	18.1
4.0~4.9	17.4	19.6	17.5	13.0	17.8	22.0	0.0	14.8	13.4	15.3	15.4	12.5	8.3	4.9	6.7	9.6	0.0	15.0
5.0~5.9	13.4	16.4	0.0	0.0	0.0	0.0	0.0	10.0	11.3	15.6	14.7	13.3	8.5	3.3	4.4	3.0	0.0	13.9
6.0~6.9	11.6	16.1	0.0	0.0	0.0	0.0	0.0	0.0	5.0	16.9	14.0	9.0	8.2	5.0	6.9	0.0	0.0	13.4
7.0~7.9	10.3	15.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.0	13.1	10.7	4.0	0.0	7.0	0.0	0.0	12.5
8.0~8.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.6	7.6	0.0	12.0	0.0	0.0	0.0	0.0	10.3
9.0~9.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.0	6.2	0.0	0.0	0.0	0.0	0.0	0.0	9.0
10.0~	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0	0.0	0.0	0.0	6.0
Average	39.0	26.0	27.3	26.5	28.8	35.5	40.9	38.9	33.0	23.9	17.4	16.6	15.3	12.6	28.6	53.7	65.0	34.7

Table D3.2.13 - (1) Mean Concentration of SO2 by Wind Direction and Wind Speed (J7 : all seasons)

Wind speed	Wind direction (ppb)																	TOTAL
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	
0~0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.5	9.5
0.4~0.9	8.7	11.6	13.4	18.2	11.9	10.9	10.7	11.7	9.6	9.0	6.7	9.2	6.4	5.0	7.9	9.6	0.0	9.7
1.0~1.9	11.3	12.2	13.5	8.9	9.1	9.1	11.0	11.3	8.5	6.8	5.6	4.5	4.6	3.9	5.2	10.4	0.0	9.8
2.0~2.9	14.9	10.4	8.5	9.5	8.1	8.5	9.5	7.8	8.0	8.9	6.3	6.2	4.6	4.8	3.5	10.9	0.0	9.8
3.0~3.9	16.6	8.3	5.8	5.7	16.2	13.7	7.0	7.2	6.6	7.5	7.1	6.0	4.5	4.7	5.0	10.2	0.0	9.2
4.0~4.9	10.7	8.0	5.2	13.0	19.6	18.0	21.7	5.8	4.7	5.4	8.0	5.0	4.4	3.9	4.3	7.1	0.0	7.4
5.0~5.9	10.5	7.5	3.4	0.0	0.0	0.0	0.0	5.5	6.4	5.8	7.2	4.3	3.2	2.8	2.8	4.0	0.0	7.4
6.0~6.9	14.5	9.0	3.6	0.0	0.0	0.0	0.0	0.0	4.3	5.8	7.2	2.3	3.0	2.0	3.0	0.0	0.0	8.7
7.0~7.9	12.4	8.4	3.5	0.0	0.0	0.0	0.0	0.0	0.0	7.1	7.5	3.0	4.0	0.0	4.0	0.0	0.0	8.9
8.0~8.9	0.0	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.5	2.9	0.0	2.0	0.0	0.0	0.0	0.0	4.2
9.0~9.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.5	2.2	0.0	0.0	0.0	0.0	0.0	0.0	4.6
10.0~	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0
Average	12.3	10.1	10.1	10.6	9.9	9.5	10.6	10.2	8.1	7.3	6.9	5.7	4.8	4.4	5.6	10.0	9.5	9.4

Table D3.2.13 - (2) Mean Concentration of SO2 by Wind Direction and Wind Speed (J7 : non-heating season)

Wind speed	Wind direction (ppb)																	TOTAL
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	
0~0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	2.4
0.4~0.9	2.3	4.6	5.3	5.2	5.2	4.6	3.0	3.8	3.1	3.5	2.8	3.0	2.7	1.9	2.4	2.5	0.0	3.0
1.0~1.9	3.3	4.5	4.6	6.1	6.9	6.5	7.7	6.6	3.1	3.0	3.6	2.6	2.4	2.7	2.5	2.7	0.0	4.1
2.0~2.9	4.6	4.6	5.2	5.2	5.8	7.7	8.2	5.2	4.7	4.3	3.3	3.0	2.0	2.5	1.6	2.8	0.0	4.4
3.0~3.9	5.3	4.5	3.2	4.3	11.8	12.6	6.5	5.7	5.1	4.1	4.0	2.7	2.4	1.6	2.5	2.4	0.0	4.4
4.0~4.9	4.3	4.8	3.4	1.0	0.0	0.0	21.7	4.3	1.6	3.2	5.8	2.2	2.2	0.0	0.0	5.0	0.0	4.2
5.0~5.9	5.3	4.9	3.4	0.0	0.0	0.0	0.0	3.0	1.4	2.8	4.7	1.8	2.0	0.0	0.0	0.0	0.0	4.1
6.0~6.9	5.4	4.3	3.6	0.0	0.0	0.0	0.0	0.0	2.5	1.4	4.1	1.0	0.0	0.0	0.0	0.0	0.0	3.6
7.0~7.9	5.5	2.2	3.5	0.0	0.0	0.0	0.0	0.0	0.0	1.3	3.6	0.0	0.0	0.0	0.0	0.0	0.0	3.1
8.0~8.9	0.0	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	1.8
9.0~9.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10.0~	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Average	3.7	4.5	4.4	5.7	6.4	6.6	7.2	5.5	3.7	3.5	4.0	2.6	2.3	2.4	2.3	2.6	2.4	3.8

Table D3.2.13 - (3) Mean Concentration of SO2 by Wind Direction and Wind Speed (J7 : heating season)

Wind speed	Wind direction (ppb)																	TOTAL
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	
0~0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.4	17.4
0.4~0.9	16.9	18.0	24.7	27.2	17.8	16.5	15.5	16.6	14.8	13.2	11.8	19.0	12.5	11.4	12.9	19.1	0.0	17.0
1.0~1.9	19.0	24.4	26.6	17.9	17.2	16.4	16.1	15.6	12.0	9.9	8.0	8.6	10.7	7.4	13.5	16.1	0.0	16.6
2.0~2.9	23.4	20.6	13.6	14.9	13.1	11.1	15.2	11.9	10.7	11.6	9.9	10.1	7.7	6.4	6.3	19.7	0.0	15.5
3.0~3.9	24.3	14.5	12.3	6.5	17.7	14.8	8.0	8.9	7.8	9.6	8.9	8.1	5.7	5.4	5.2	15.1	0.0	12.8
4.0~4.9	14.2	14.2	13.2	19.0	19.6	18.0	0.0	8.0	6.2	7.0	9.3	6.5	4.8	3.9	4.3	8.8	0.0	9.6
5.0~5.9	11.7	12.1	0.0	0.0	0.0	0.0	0.0	8.0	10.5	7.6	8.4	5.7	3.3	2.8	2.8	4.0	0.0	9.3
6.0~6.9	15.6	12.9	0.0	0.0	0.0	0.0	0.0	0.0	8.0	8.6	8.2	3.4	3.0	2.0	3.0	0.0	0.0	11.7
7.0~7.9	14.6	12.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.8	8.6	3.0	4.0	0.0	4.0	0.0	0.0	6.1
8.0~8.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.8	4.2	0.0	2.0	0.0	0.0	0.0	0.0	4.6
9.0~9.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.5	2.2	0.0	0.0	0.0	0.0	0.0	0.0	2.0
10.0~	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0
Average	19.4	18.3	20.7	18.1	16.6	15.6	15.6	14.9	11.3	9.9	9.0	8.6	7.7	6.7	8.9	17.5	17.4	14.8

Table D3.2.14 - (1) Cumulative Frequency of SO2 Concentration by Wind Direction (JF1 : all seasons)

Concentration rank	Wind direction																	TOTAL
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	
0~	267	162	311	422	1,141	2,442	853	166	192	217	331	693	1,811	1,479	886	528	4,637	16,538
2~	221	122	278	382	1,076	2,362	820	151	178	203	290	570	1,508	1,366	770	471	4,231	14,999
5~	174	77	193	308	930	2,126	724	106	126	151	183	366	1,031	1,007	573	347	3,403	11,825
10~	119	57	138	240	787	1,839	601	61	83	111	117	244	720	742	435	260	2,835	9,389
15~	105	47	108	190	671	1,620	521	48	59	73	75	186	546	595	380	221	2,576	8,021
20~	89	38	96	160	583	1,409	456	38	40	56	58	144	438	492	333	177	2,341	6,948
30~	62	31	68	125	435	1,127	374	28	22	30	39	87	249	314	235	122	1,884	5,232
40~	35	19	54	80	331	930	301	20	14	18	23	48	127	180	148	76	1,530	3,934
50~	21	15	42	55	246	757	241	17	8	13	17	28	71	101	89	50	1,244	3,015
60~	13	12	33	43	174	612	192	10	3	7	10	15	45	59	52	21	973	2,274
80~	6	8	19	36	108	405	121	7	2	4	3	5	11	20	18	6	635	1,414
100~	2	7	13	23	62	258	65	4	0	2	0	3	2	8	5	1	419	874
120~	2	4	8	8	42	176	30	1	0	0	0	2	0	0	3	1	253	530
150~	0	1	2	0	15	89	14	0	0	0	0	0	0	0	0	0	125	246
200~	0	0	0	0	3	36	5	0	0	0	0	0	0	0	0	0	39	83

Table D3.2.14 - (2) Cumulative Frequency of SO2 Concentration by Wind Direction (JF1 : non-heating season)

Concentration rank	Wind direction																	TOTAL
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	
0~	158	115	211	244	543	948	382	121	120	128	222	417	955	827	506	293	2,104	8,294
2~	112	75	178	204	478	868	349	106	106	114	183	300	667	717	392	237	1,699	6,785
5~	67	30	95	131	334	636	253	61	58	68	87	115	277	381	203	120	904	3,820
10~	17	12	42	68	207	392	145	21	27	43	39	48	117	183	82	45	411	1,899
15~	9	6	24	36	137	260	100	14	12	14	13	31	75	101	47	23	241	1,143
20~	4	2	17	24	110	165	70	7	4	6	6	16	59	63	26	10	134	723
30~	1	0	6	15	59	98	37	2	0	2	2	3	25	26	8	2	65	351
40~	0	0	4	8	42	66	18	1	0	1	0	1	9	8	3	1	26	188
50~	0	0	2	1	20	36	11	1	0	0	0	0	6	5	1	0	17	100
60~	0	0	0	1	10	20	7	0	0	0	0	0	3	3	1	0	9	54
80~	0	0	0	1	3	8	3	0	0	0	0	0	1	2	0	0	3	21
100~	0	0	0	0	1	3	0	0	0	0	0	0	0	2	0	0	2	8
120~	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3
150~	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
200~	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table D3.2.14 - (3) Cumulative Frequency of SO2 Concentration by Wind Direction (JF1 : heating season)

Concentration rank	Wind direction																	TOTAL
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	
0~	109	47	100	178	598	1,494	471	45	72	89	109	276	856	652	380	235	2,533	8,244
2~	109	47	100	178	598	1,494	471	45	72	89	107	270	841	649	378	234	2,532	8,214
5~	107	47	98	177	596	1,490	471	45	68	83	96	251	754	626	370	227	2,499	8,005
10~	102	45	96	172	580	1,447	456	40	56	68	78	196	603	559	353	215	2,424	7,490
15~	96	41	84	154	534	1,360	421	34	47	59	62	155	471	494	333	198	2,335	6,878
20~	85	36	79	136	473	1,244	386	31	36	50	52	128	379	429	307	167	2,207	6,225
30~	61	31	62	110	376	1,029	337	26	22	28	37	84	224	288	227	120	1,819	4,881
40~	35	19	50	72	289	864	283	19	14	17	23	47	118	172	145	75	1,504	3,746
50~	21	15	40	54	226	721	230	16	8	13	17	28	65	96	88	50	1,227	2,915
60~	13	12	33	42	164	592	185	10	3	7	10	15	42	56	51	21	964	2,220
80~	6	8	19	35	105	397	118	7	2	4	3	5	10	18	18	6	632	1,393
100~	2	7	13	23	61	255	65	4	0	2	0	3	2	6	5	1	417	866
120~	2	4	8	8	42	173	30	1	0	0	0	2	0	0	3	1	253	527
150~	0	1	2	0	15	88	14	0	0	0	0	0	0	0	0	0	125	245
200~	0	0	0	0	3	36	5	0	0	0	0	0	0	0	0	0	39	83

Table D3.2.15 - (1) Cumulative Frequency of SO2 Concentration by Wind Direction (J2 : all seasons)

Concentration rank	Wind direction																	CALM	TOTAL
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW			
0~	848	441	466	607	718	689	1,316	1,758	812	323	229	298	515	1,064	2,397	2,893	1,504	16,878	
2~	674	344	385	532	639	621	1,153	1,536	705	265	164	194	331	728	1,746	2,241	1,259	13,517	
5~	508	217	244	373	447	475	959	1,273	497	198	122	122	184	390	1,060	1,539	941	9,549	
10~	341	124	149	226	254	308	663	928	327	111	79	71	79	168	563	1,032	694	6,117	
15~	247	93	112	152	184	220	495	717	246	75	53	50	47	95	381	788	547	4,502	
20~	200	62	83	115	137	174	405	583	194	59	40	32	33	76	302	667	467	3,629	
30~	142	37	53	52	69	112	273	427	149	44	32	20	23	50	199	450	321	2,453	
40~	98	27	33	23	41	79	188	331	122	29	27	14	17	35	139	301	227	1,731	
50~	67	22	24	16	31	63	143	272	98	21	21	10	13	27	91	198	175	1,292	
60~	50	19	16	12	24	50	121	217	79	18	16	6	8	20	63	155	134	1,008	
80~	29	12	9	7	14	34	82	162	58	14	9	5	7	13	30	77	83	645	
100~	17	8	8	6	9	15	53	109	44	9	8	3	4	9	19	49	59	429	
120~	10	6	6	5	6	13	38	84	32	7	7	2	3	5	15	26	45	310	
150~	4	1	5	3	4	10	20	50	23	6	6	2	3	0	9	14	26	186	
200~	4	0	4	0	3	4	5	18	10	2	0	0	2	0	5	5	17	79	

Table D3.2.15 - (2) Cumulative Frequency of SO2 Concentration by Wind Direction (J2 : non-heating season)

Concentration rank	Wind direction																	CALM	TOTAL
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW			
0~	381	279	262	265	324	303	522	786	476	206	150	201	342	690	1,368	1,457	617	8,629	
2~	225	195	192	203	268	270	450	699	409	156	95	111	182	400	826	853	425	5,959	
5~	100	85	84	81	151	170	342	523	261	114	62	55	87	161	344	310	201	3,131	
10~	43	26	30	25	62	96	234	383	163	58	36	26	40	45	104	75	81	1,527	
15~	23	18	24	16	41	68	193	313	122	37	23	18	27	22	44	31	44	1,064	
20~	20	13	16	14	35	58	177	267	102	32	18	10	16	17	21	21	27	864	
30~	15	5	11	10	22	42	137	205	81	26	14	6	12	7	11	10	17	631	
40~	12	5	9	6	16	35	112	178	68	18	12	5	8	3	9	5	12	513	
50~	7	5	5	5	14	31	95	155	56	14	7	3	6	2	7	5	7	424	
60~	4	5	3	4	9	25	82	124	45	12	5	1	3	2	6	3	7	340	
80~	3	5	2	2	5	18	58	102	35	8	3	1	2	1	2	1	3	251	
100~	2	3	1	2	2	5	36	64	25	5	3	1	1	1	0	0	2	153	
120~	1	2	0	1	0	3	24	49	16	4	2	1	0	1	0	0	1	105	
150~	1	0	0	1	0	3	13	27	9	3	2	1	0	0	0	0	1	61	
200~	1	0	0	0	0	0	1	2	4	1	0	0	0	0	0	0	1	10	

Table D3.2.15 - (3) Cumulative Frequency of SO2 Concentration by Wind Direction (J2 : heating season)

Concentration rank	Wind direction																	CALM	TOTAL
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW			
0~	467	162	204	342	394	386	794	972	336	117	79	97	173	374	1,029	1,436	887	8,249	
2~	449	149	193	329	371	351	703	837	296	109	69	83	149	328	920	1,388	834	7,558	
5~	408	132	160	292	296	305	617	750	236	84	60	67	97	229	716	1,229	740	6,418	
10~	298	98	119	201	192	212	429	545	164	53	43	45	39	123	459	957	613	4,590	
15~	224	75	88	136	143	152	302	404	124	38	30	32	20	73	337	757	503	3,438	
20~	180	49	67	101	102	116	228	316	92	27	22	22	17	59	281	646	440	2,765	
30~	127	32	42	42	47	70	136	222	68	18	18	14	11	43	188	440	304	1,822	
40~	86	22	24	17	25	44	76	153	54	11	15	9	9	32	130	296	215	1,218	
50~	60	17	19	11	17	32	48	117	42	7	14	7	7	25	84	193	168	868	
60~	46	14	13	8	15	25	39	93	34	6	11	5	5	18	57	152	127	668	
80~	26	7	7	5	9	16	24	60	23	6	6	4	5	12	28	76	80	394	
100~	15	5	7	4	7	10	17	45	19	4	5	2	3	8	19	49	57	276	
120~	9	4	6	4	6	10	14	35	16	3	5	1	3	4	15	26	44	205	
150~	3	1	5	2	4	7	7	23	14	3	4	1	3	0	9	14	25	125	
200~	3	0	4	0	3	4	4	16	6	1	0	0	2	0	5	5	16	69	

Table D3.2.16 - (1) Cumulative Frequency of SO2 Concentration by Wind Direction (JF2 : all seasons)

Concentration rank	Wind direction																(Times)	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
0~	1,139	1,362	1,614	1,386	857	493	680	709	976	1,688	1,834	1,139	481	292	440	694	1,291	17,075
2~	984	1,248	1,426	1,202	718	372	504	515	697	1,243	1,406	836	321	206	331	518	988	13,515
5~	619	879	972	642	403	201	230	257	370	647	721	420	122	97	169	295	563	7,607
10~	340	493	555	275	169	81	76	96	130	254	258	144	41	43	88	160	294	3,497
15~	195	330	410	178	96	41	47	45	56	122	138	78	33	34	63	83	174	2,123
20~	109	233	335	126	62	25	28	26	25	66	78	51	24	26	37	51	107	1,409
30~	41	157	232	79	28	12	18	17	9	25	30	23	11	18	13	19	58	790
40~	19	116	180	57	17	7	13	11	6	14	15	14	9	10	10	14	46	558
50~	15	88	152	47	13	5	9	8	4	11	14	9	9	10	5	10	39	448
60~	11	68	123	40	11	5	7	6	3	11	11	7	5	8	2	5	35	358
80~	7	45	91	27	6	2	6	2	2	11	9	4	4	7	1	4	29	257
100~	5	35	58	22	4	1	6	1	2	8	8	3	3	7	0	2	27	192
120~	1	21	43	20	2	1	4	0	1	7	8	3	3	4	0	2	26	146
150~	1	12	28	13	2	1	3	0	1	7	7	3	3	3	0	1	24	109
200~	1	7	12	4	2	0	2	0	0	7	7	1	1	1	0	0	24	69

Table D3.2.16 - (2) Cumulative Frequency of SO2 Concentration by Wind Direction (JF2 : non-heating season)

Concentration rank	Wind direction																(Times)	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
0~	576	631	743	717	466	280	398	410	507	727	807	584	273	173	266	386	604	8,548
2~	432	536	604	555	345	170	250	236	282	339	410	290	121	90	160	223	340	5,383
5~	185	303	354	185	102	57	100	98	120	102	140	119	31	24	47	70	56	2,093
10~	74	180	233	83	36	24	38	45	34	37	42	45	14	11	14	22	12	944
15~	41	135	205	72	24	14	28	22	18	20	21	26	12	8	9	12	7	674
20~	27	114	187	62	19	13	21	18	11	10	13	21	9	8	7	9	5	554
30~	17	84	148	48	14	10	15	12	6	7	7	12	4	6	6	7	5	408
40~	10	67	121	38	9	6	11	6	4	5	4	7	4	5	5	6	5	313
50~	8	55	100	29	7	5	7	5	3	2	4	4	4	5	3	6	5	252
60~	7	44	81	24	5	5	5	4	2	2	2	3	3	5	1	5	4	202
80~	5	29	62	18	2	2	4	1	1	2	1	0	2	5	0	4	2	140
100~	3	26	37	16	2	1	4	0	1	0	0	0	1	5	0	2	2	100
120~	1	15	26	15	0	1	3	0	1	0	0	0	1	3	0	2	2	70
150~	1	7	17	11	0	1	2	0	1	0	0	0	1	2	0	1	0	44
200~	1	5	6	3	0	0	1	0	0	0	0	0	1	1	0	0	0	18

Table D3.2.16 - (3) Cumulative Frequency of SO2 Concentration by Wind Direction (JF2 : heating season)

Concentration rank	Wind direction																(Times)	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
0~	563	731	871	669	391	213	282	299	469	961	1,027	555	208	119	174	308	687	8,527
2~	552	712	822	647	373	202	254	279	415	904	996	546	200	116	171	295	648	8,132
5~	434	576	618	457	301	144	130	159	250	545	581	301	91	73	122	225	507	5,514
10~	266	313	322	192	133	57	38	51	96	217	216	99	27	32	74	138	282	2,553
15~	154	195	205	106	72	27	19	23	38	102	117	52	21	26	54	71	167	1,449
20~	82	119	148	64	43	12	7	8	14	56	65	30	15	18	30	42	102	855
30~	24	73	84	31	14	2	3	5	3	18	23	11	7	12	7	12	53	382
40~	9	49	59	19	8	1	2	5	2	9	11	7	5	5	5	8	41	245
50~	7	33	52	18	6	0	2	3	1	9	10	5	5	5	2	4	34	196
60~	4	24	42	16	6	0	2	2	1	9	9	4	2	3	1	0	31	156
80~	2	16	29	9	4	0	2	1	1	9	8	4	2	2	1	0	27	117
100~	2	9	21	6	2	0	2	1	1	8	8	3	2	2	0	0	25	92
120~	0	6	17	5	2	0	1	0	0	7	8	3	2	1	0	0	24	76
150~	0	5	11	2	2	0	1	0	0	7	7	3	2	1	0	0	24	65
200~	0	2	6	1	2	0	1	0	0	7	7	1	0	0	0	0	24	51

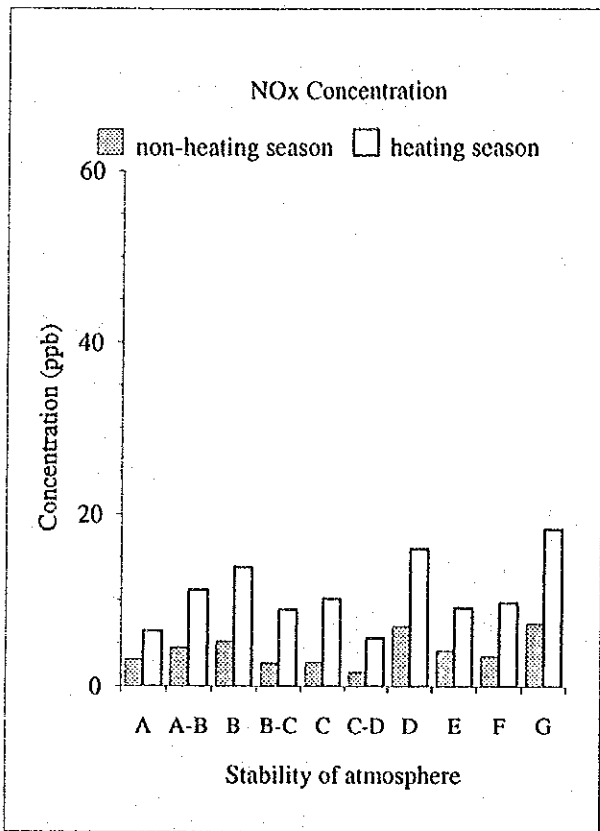


Figure D3.2.54 Mean Concentration of NOx by Stability of Atmosphere (JF1)

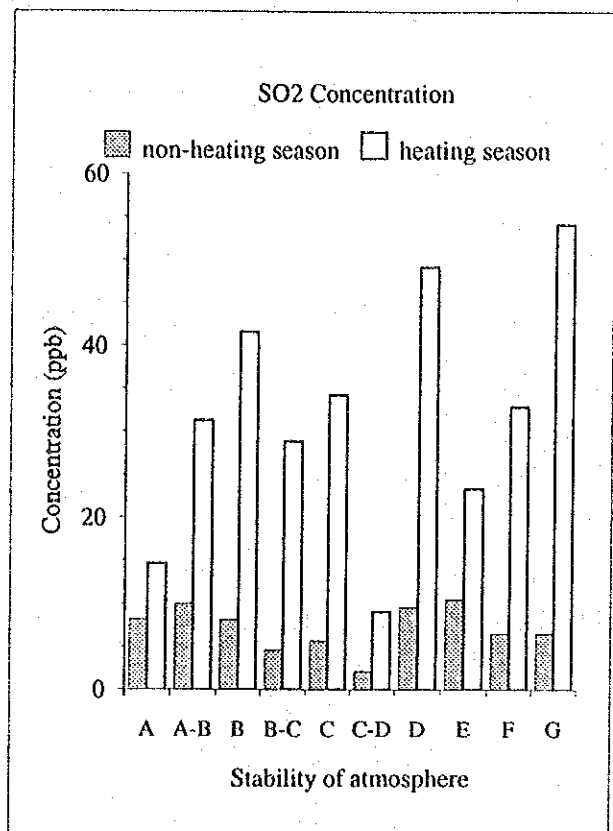


Figure D3.2.55 Mean Concentration of SO2 by Stability of Atmosphere (JF1)

Table D3.2.17 Mean Concentration of NOx by Stability of Atmosphere (JF1)

	Stability of atmosphere (ppb)										
	A	A-B	B	B-C	C	C-D	D	E	F	G	Average
All season	3.4	6.1	8.4	4.6	4.6	3.2	13.9	7.3	6.6	12.0	10.9
Non-heating season	3.2	4.5	5.3	2.7	2.9	1.7	7.0	4.2	3.6	7.3	5.9
Heating season	6.4	11.2	13.9	9.0	10.2	5.6	16.0	9.2	9.8	18.3	16.0

Table D3.2.18 Mean Concentration of SO2 by Stability of Atmosphere (JF1)

	Stability of atmosphere (ppb)										
	A	A-B	B	B-C	C	C-D	D	E	F	G	Average
All season	8.6	15.2	20.4	11.9	12.9	4.9	39.9	19.0	20.5	27.6	27.7
Non-heating season	8.2	10.0	8.2	4.6	5.7	2.1	9.6	10.6	6.5	6.6	7.6
Heating season	14.7	31.2	41.6	28.8	34.2	9.0	49.2	23.4	32.9	54.1	47.9

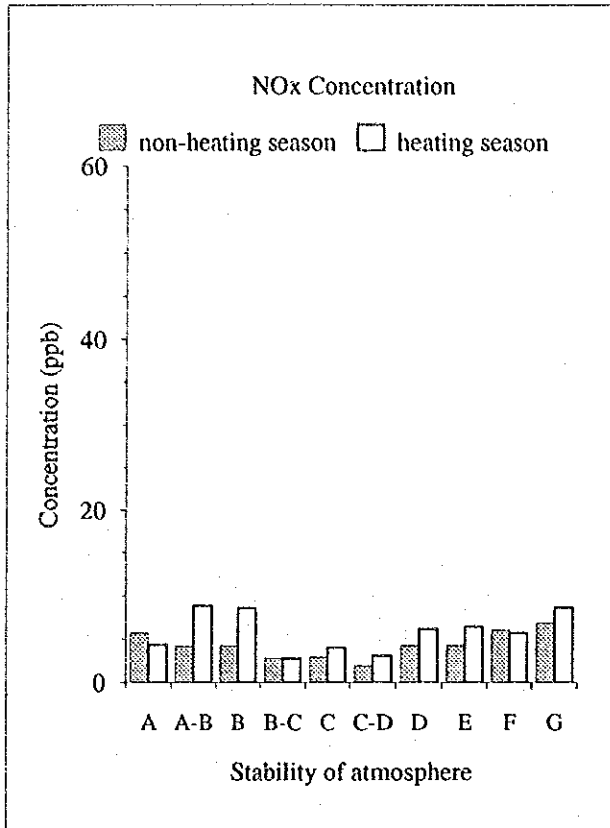


Figure D3.2.56 Mean Concentration of NOx by Stability of Atmosphere (JF2)

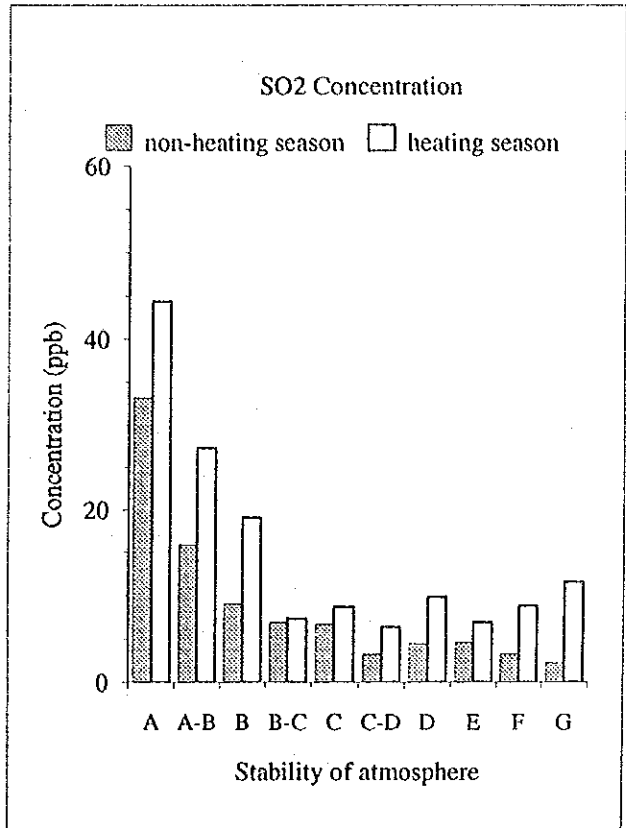


Figure D3.2.57 Mean Concentration of SO2 by Stability of Atmosphere (JF2)

Table D3.2.19 Mean Concentration of NOx by Stability of Atmosphere (JF2)

	Stability of atmosphere (ppb)										Average
	A	A-B	B	B-C	C	C-D	D	E	F	G	
All season	5.6	5.0	5.5	2.8	3.3	2.5	5.7	5.5	5.9	7.6	5.9
Non-heating season	5.7	4.2	4.3	2.8	2.9	1.9	4.3	4.2	6.0	6.8	5.1
Heating season	4.3	8.9	8.6	2.7	4.0	3.1	6.1	6.4	5.7	8.6	6.7

Table D3.2.20 Mean Concentration of SO2 by Stability of Atmosphere (JF2)

	Stability of atmosphere (ppb)										Average
	A	A-B	B	B-C	C	C-D	D	E	F	G	
All season	33.6	18.0	12.0	7.0	7.4	4.8	8.7	5.9	5.4	6.1	8.9
Non-heating season	33.2	15.9	9.0	6.9	6.7	3.2	4.5	4.6	3.3	2.3	6.9
Heating season	44.4	27.3	19.1	7.4	8.7	6.4	9.9	6.9	8.8	11.6	10.8

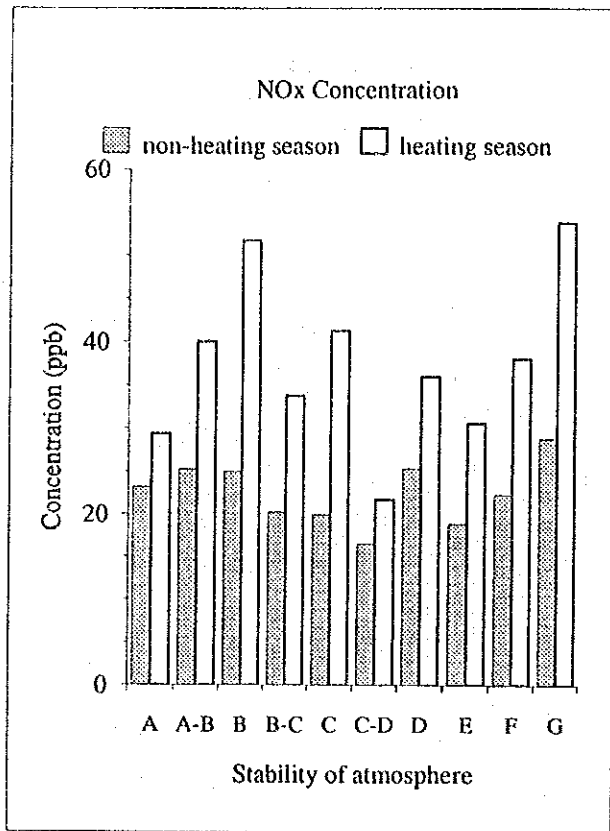


Figure D3.2.58 Mean Concentration of NOx by Stability of Atmosphere (J2)

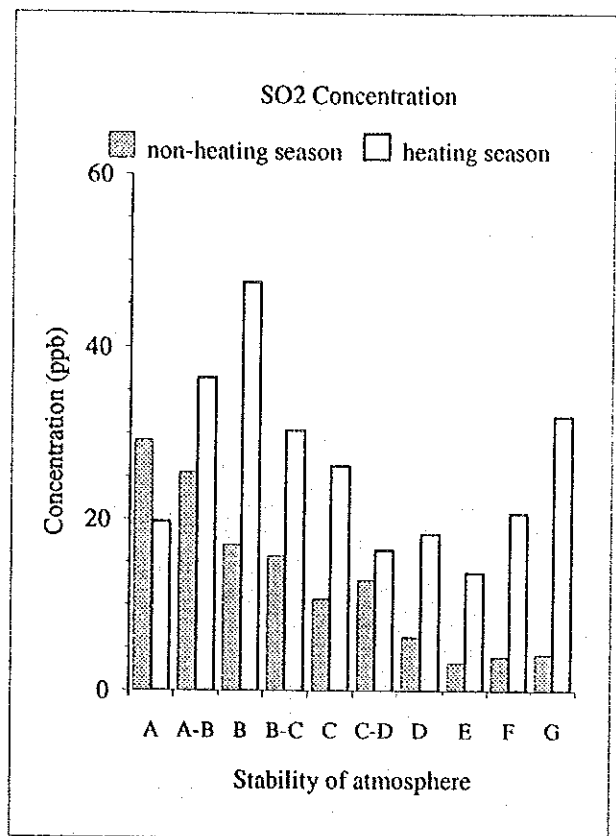


Figure D3.2.59 Mean Concentration of SO2 by Stability of Atmosphere (J2)

Table D3.2.21 Mean Concentration of NOx by Stability of Atmosphere (J2)

	Stability of atmosphere										Average
	(ppb)										
	A	A-B	B	B-C	C	C-D	D	E	F	G	
All season	23.5	28.8	33.3	23.6	25.3	18.4	33.0	24.5	28.5	40.1	32.6
Non-heating season	23.2	25.3	25.0	20.2	19.9	16.5	25.4	18.9	22.3	28.8	24.6
Heating season	29.4	40.0	51.7	33.8	41.3	21.7	36.0	30.6	38.1	53.8	40.4

Table D3.2.22 Mean Concentration of SO2 by Stability of Atmosphere (J2)

	Stability of atmosphere										Average
	(ppb)										
	A	A-B	B	B-C	C	C-D	D	E	F	G	
All season	28.8	27.8	25.6	19.0	14.4	14.0	14.9	8.1	10.3	16.3	16.2
Non-heating season	29.3	25.5	17.1	15.7	10.7	12.9	6.3	3.3	4.0	4.3	9.8
Heating season	19.7	36.4	47.6	30.4	26.3	16.4	18.3	13.8	20.8	32.0	23.0

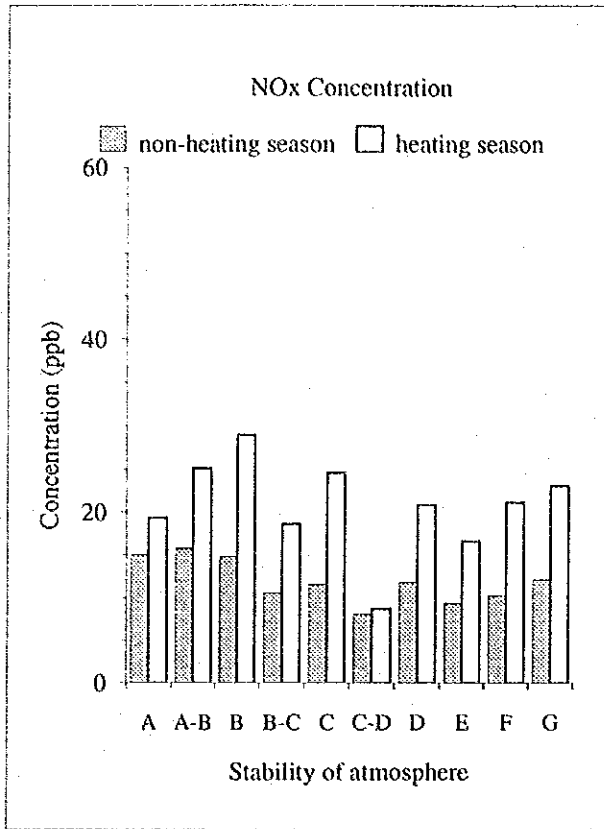


Figure D3.2.60 Mean Concentration of NOx by Stability of Atmosphere (J3)

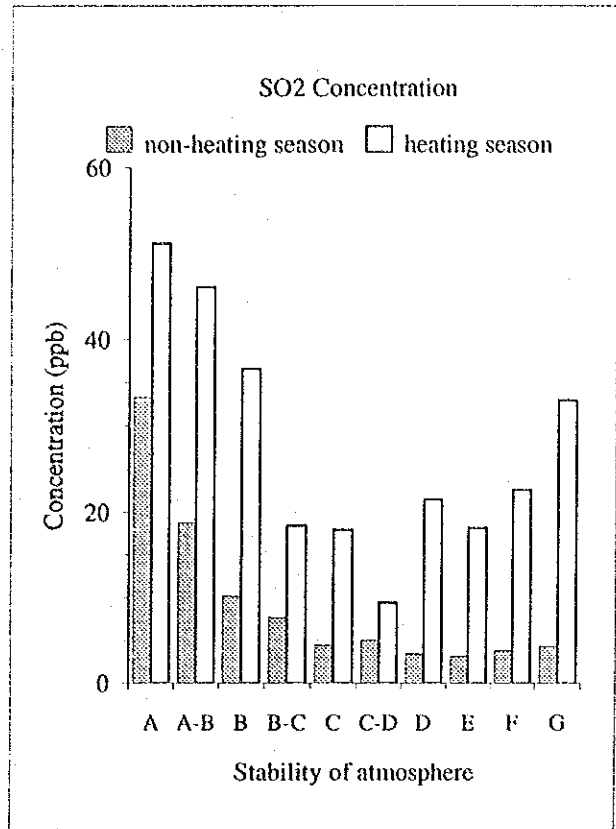


Figure D3.2.61 Mean Concentration of SO2 by Stability of Atmosphere (J3)

Table D3.2.23 Mean Concentration of NOx by Stability of Atmosphere (J3)

	Stability of atmosphere (ppb)										Average
	A	A-B	B	B-C	C	C-D	D	E	F	G	
All season	15.3	18.1	19.3	12.6	14.9	8.3	18.4	12.8	14.6	17.1	16.8
Non-heating season	15.1	15.8	14.8	10.6	11.5	8.1	11.8	9.4	10.3	12.2	12.1
Heating season	19.3	25.1	28.9	18.6	24.5	8.7	20.8	16.6	21.1	23.1	21.3

Table D3.2.24 Mean Concentration of SO2 by Stability of Atmosphere (J3)

	Stability of atmosphere (ppb)										Average
	A	A-B	B	B-C	C	C-D	D	E	F	G	
All season	34.4	25.5	18.6	10.4	8.0	6.6	16.5	10.4	11.2	17.3	16.2
Non-heating season	33.3	18.8	10.2	7.7	4.4	5.0	3.5	3.2	3.8	4.3	7.2
Heating season	51.1	46.1	36.6	18.5	18.0	9.5	21.5	18.2	22.6	33.0	25.0

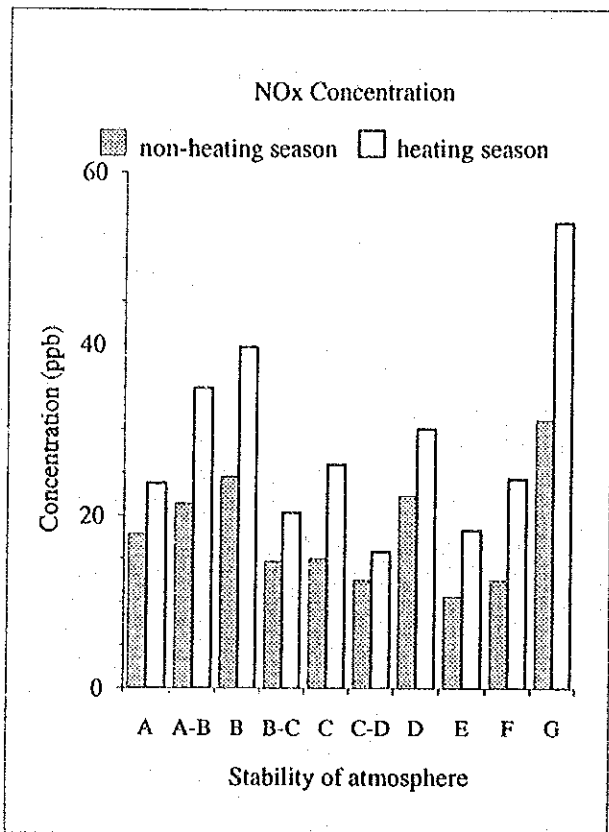


Figure D3.2.62 Mean Concentration of NOx by Stability of Atmosphere (J7)

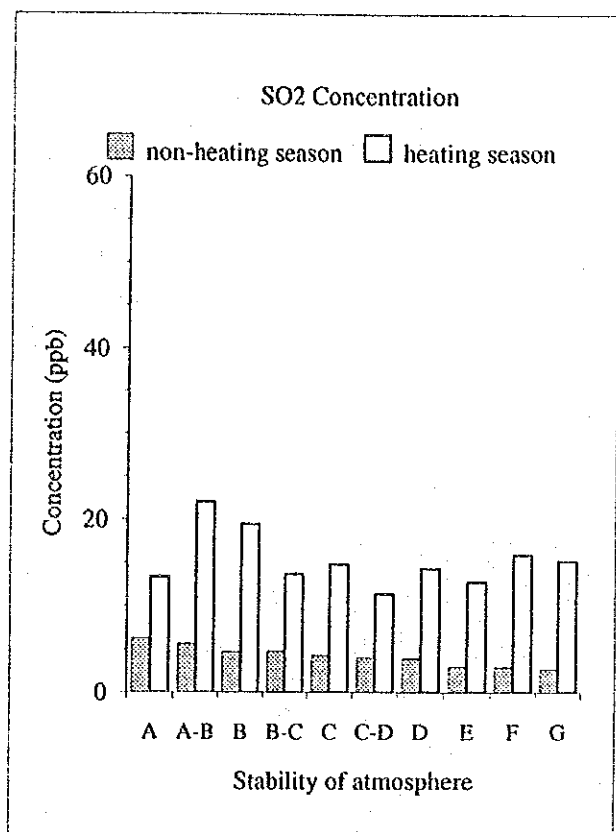


Figure D3.2.63 Mean Concentration of SO2 by Stability of Atmosphere (J7)

Table D3.2.25 Mean Concentration of NOx by Stability of Atmosphere (J7)

	Stability of atmosphere										Average
	(ppb)										
	A	A-B	B	B-C	C	C-D	D	E	F	G	
All season	18.2	23.5	29.0	16.8	18.7	14.1	28.3	15.3	18.4	40.1	29.2
Non-heating season	17.9	21.4	24.5	14.7	15.0	12.6	22.3	10.6	12.6	31.1	23.6
Heating season	23.7	34.9	39.7	20.4	25.9	15.8	30.0	18.3	24.2	54.2	34.7

Table D3.2.26 Mean Concentration of SO2 by Stability of Atmosphere (J7)

	Stability of atmosphere										Average
	(ppb)										
	A	A-B	B	B-C	C	C-D	D	E	F	G	
All season	6.6	8.3	9.1	8.1	7.9	7.4	12.0	8.9	9.4	7.6	9.4
Non-heating season	6.3	5.7	4.7	4.8	4.3	4.1	4.0	3.0	3.0	2.7	3.8
Heating season	13.3	22.1	19.5	13.7	14.8	11.4	14.3	12.8	15.9	15.2	14.8

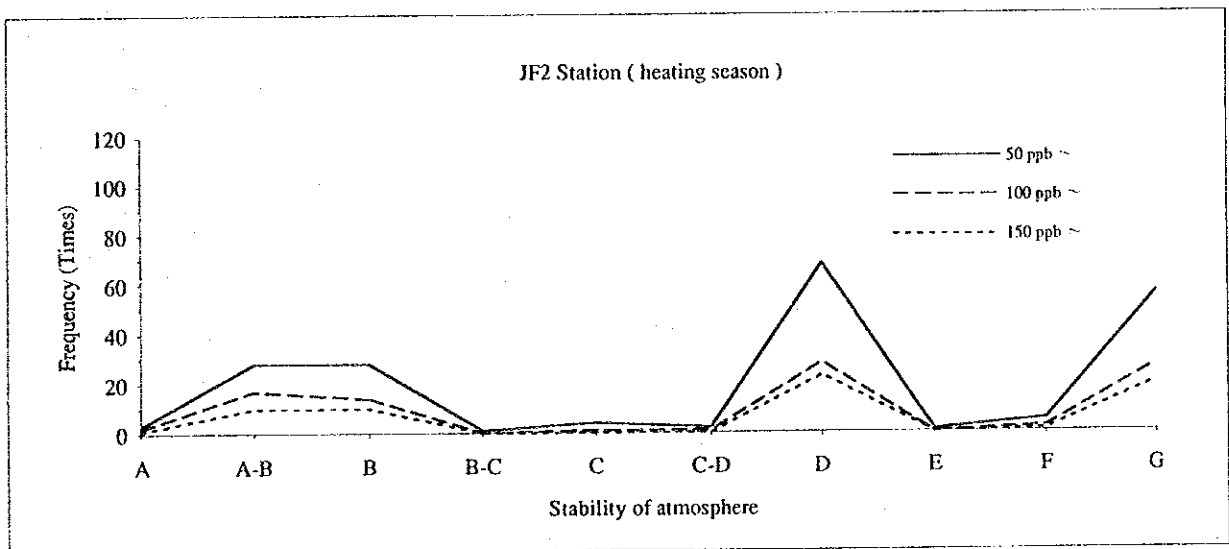
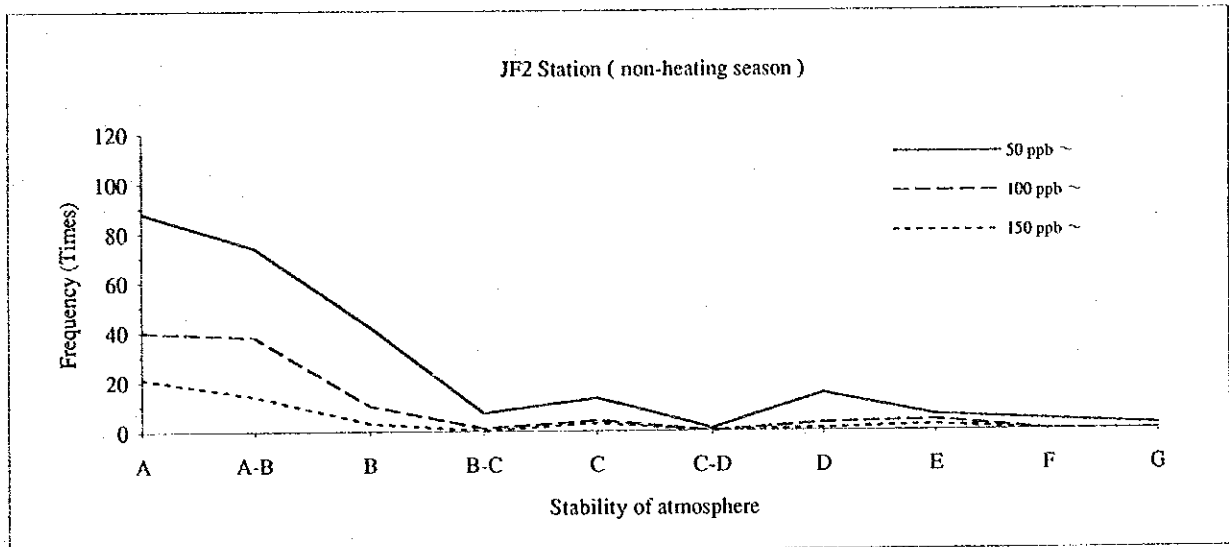
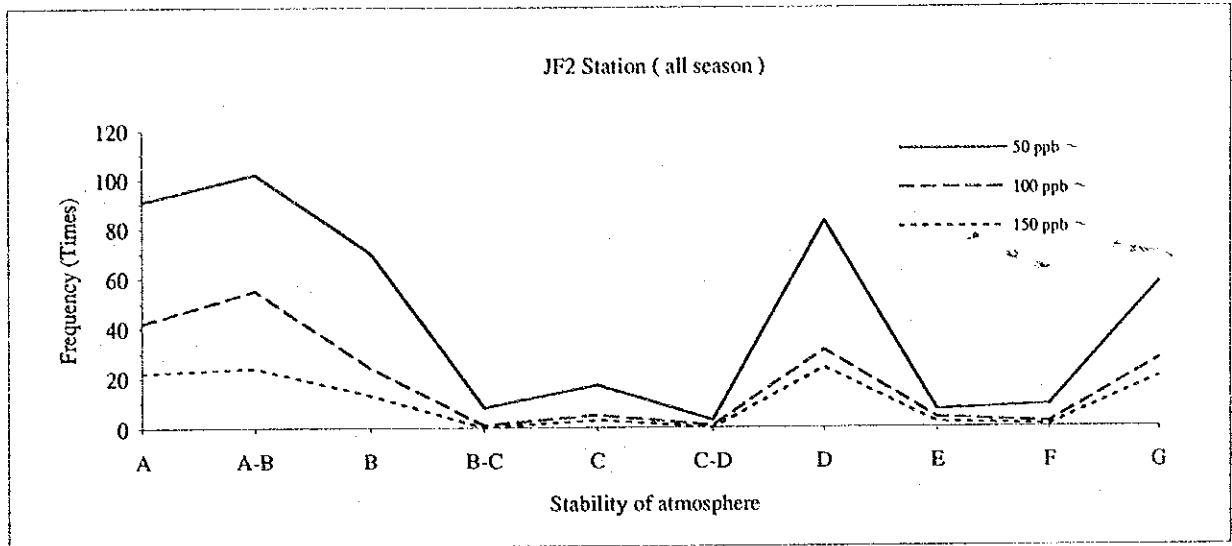


Figure D3.2.64 Cumulative Frequency of SO₂ Concentration by Stability of Atmosphere (JF2)

Table D3.2.27 - (1) Cumulative Frequency of SO2 Concentration by Stability of Atmosphere (JF2 : all seasons)

Concentration rank	Stability of atmosphere (Times)										TOTAL
	A	A-B	B	B-C	C	C-D	D	E	F	G	
0 ~	407	1,139	1,408	293	833	471	5,588	934	949	5,016	17,038
2 ~	367	990	1,129	235	637	348	4,881	732	626	3,549	13,494
5 ~	249	630	681	124	353	159	3,065	368	316	1,649	7,594
10 ~	182	383	384	35	136	37	1,360	125	121	730	3,493
15 ~	159	284	262	24	79	21	766	58	68	400	2,121
20 ~	146	224	191	19	55	12	435	41	42	243	1,408
30 ~	129	161	124	12	34	7	170	16	21	116	790
40 ~	102	127	91	10	23	5	109	9	10	72	558
50 ~	91	102	70	8	17	3	83	7	9	58	448
60 ~	75	83	55	5	13	2	66	6	8	45	358
80 ~	57	66	36	1	10	2	44	5	2	34	257
100 ~	42	55	24	1	5	1	31	4	2	27	192
120 ~	30	40	18	1	3	1	26	3	2	22	146
150 ~	22	24	13	0	3	0	24	2	1	20	109
200 ~	9	14	7	0	1	0	22	0	0	16	69

Table D3.2.27 - (2) Cumulative Frequency of SO2 Concentration by Stability of Atmosphere (JF2 : non-heating season)

Concentration rank	Stability of atmosphere (Times)										TOTAL
	A	A-B	B	B-C	C	C-D	D	E	F	G	
0 ~	391	932	997	218	557	233	1,252	408	592	2,944	8,524
2 ~	351	784	727	163	366	128	772	228	280	1,574	5,373
5 ~	237	468	348	75	166	38	262	74	98	323	2,089
10 ~	176	272	187	25	72	6	91	26	36	53	944
15 ~	154	206	136	18	45	5	58	12	18	22	674
20 ~	141	169	110	15	33	4	44	12	13	13	554
30 ~	124	120	78	9	24	3	29	9	9	3	408
40 ~	99	95	57	9	17	2	22	6	4	2	313
50 ~	88	74	42	7	13	1	15	6	4	2	252
60 ~	73	60	31	5	11	1	11	5	4	1	202
80 ~	55	47	16	1	9	1	6	5	0	0	140
100 ~	40	38	10	1	4	0	3	4	0	0	100
120 ~	29	27	6	1	3	0	1	3	0	0	70
150 ~	21	14	3	0	3	0	1	2	0	0	44
200 ~	8	9	0	0	1	0	0	0	0	0	18

Table D3.2.27 - (3) Cumulative Frequency of SO2 Concentration by Stability of Atmosphere (JF2 : heating season)

Concentration rank	Stability of atmosphere (Times)										TOTAL
	A	A-B	B	B-C	C	C-D	D	E	F	G	
0 ~	16	207	411	75	276	238	4,336	526	357	2,072	8,514
2 ~	16	206	402	72	271	220	4,109	504	346	1,975	8,121
5 ~	12	162	333	49	187	121	2,803	294	218	1,326	5,505
10 ~	6	111	197	10	64	31	1,269	99	85	677	2,549
15 ~	5	78	126	6	34	16	708	46	50	378	1,447
20 ~	5	55	81	4	22	8	391	29	29	230	854
30 ~	5	41	46	3	10	4	141	7	12	113	382
40 ~	3	32	34	1	6	3	87	3	6	70	245
50 ~	3	28	28	1	4	2	68	1	5	56	196
60 ~	2	23	24	0	2	1	55	1	4	44	156
80 ~	2	19	20	0	1	1	38	0	2	34	117
100 ~	2	17	14	0	1	1	28	0	2	27	92
120 ~	1	13	12	0	0	1	25	0	2	22	76
150 ~	1	10	10	0	0	0	23	0	1	20	65
200 ~	1	5	7	0	0	0	22	0	0	16	51

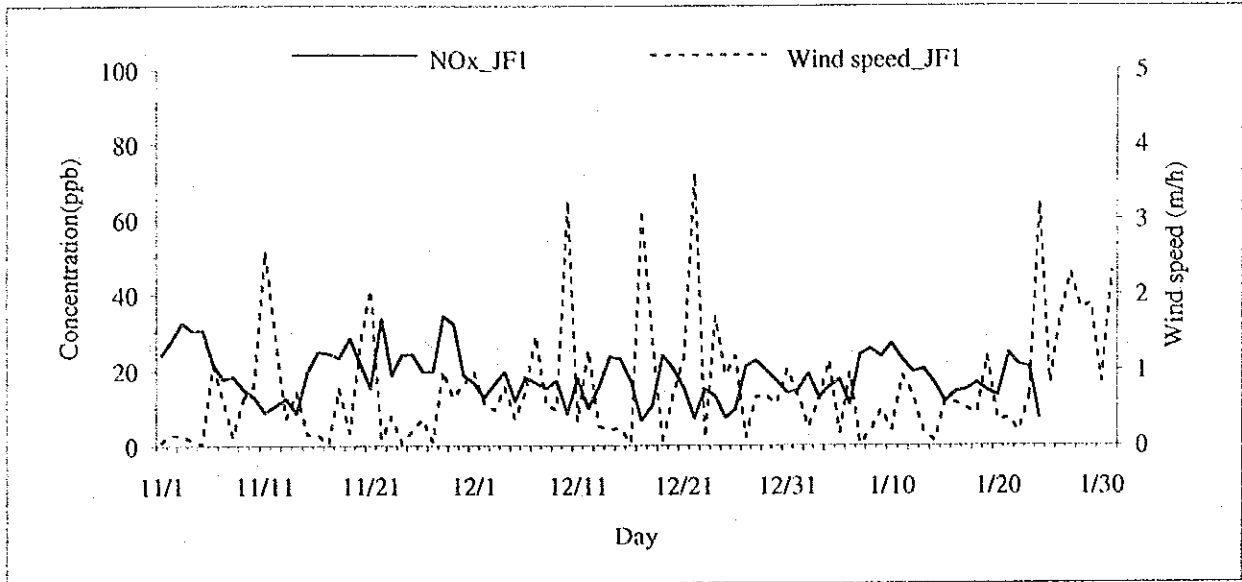


Figure D3.2.65 - (1) Daily Average NOx Concentration and Wind Speed (JF1 : 11/1 -1/31)

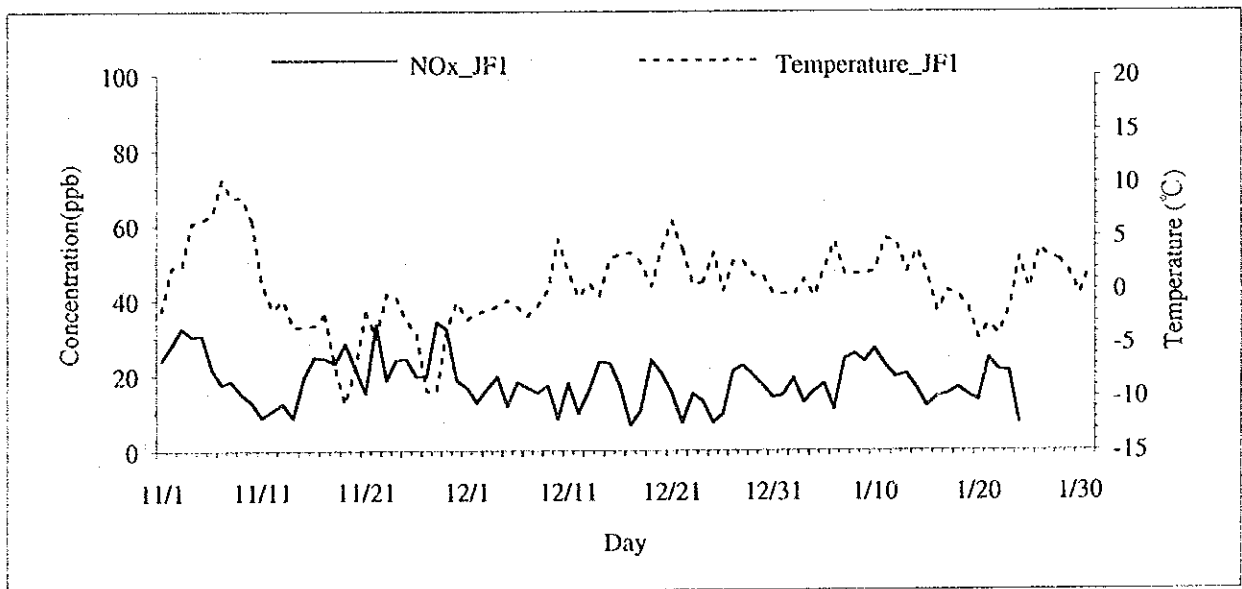


Figure D3.2.65 - (2) Daily Average NOx Concentration and Temperature (JF1 : 11/1 -1/31)

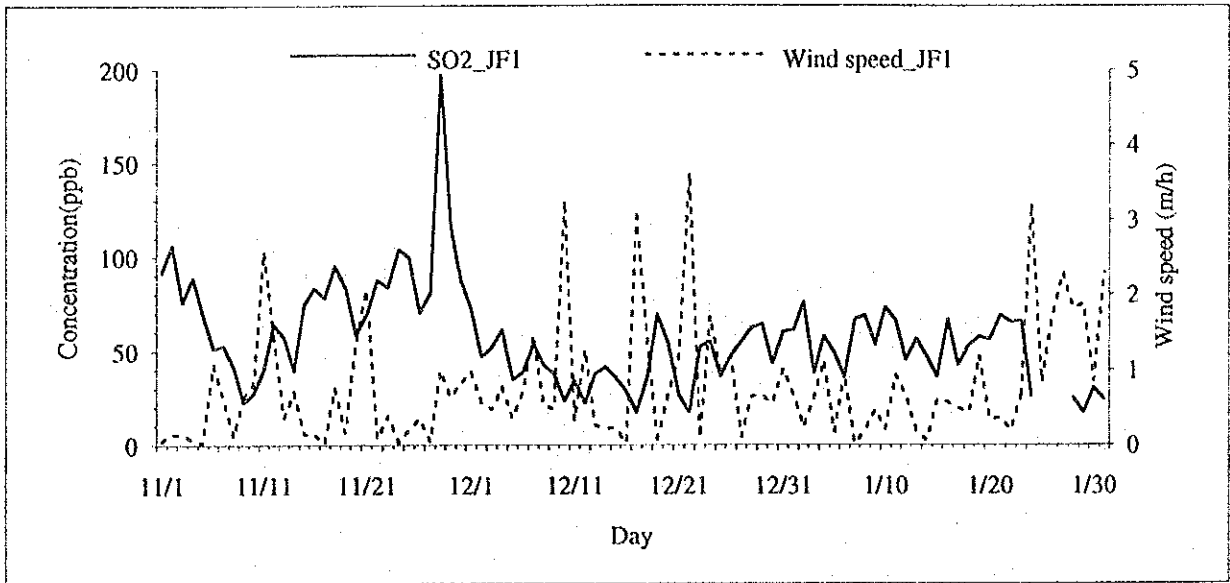


Figure D3.2.66 - (1) Daily Average SO2 Concentration and Wind Speed (JF1 : 11/1 -1/31)

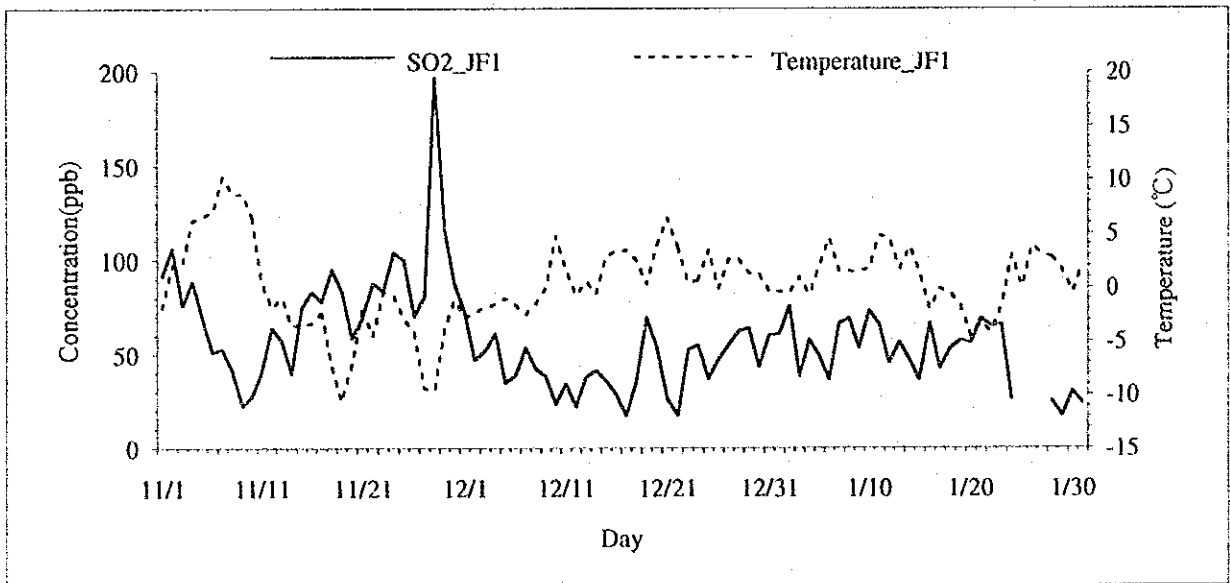


Figure D3.2.66 - (2) Daily Average SO2 Concentration and Temperature (JF1 : 11/1 -1/31)

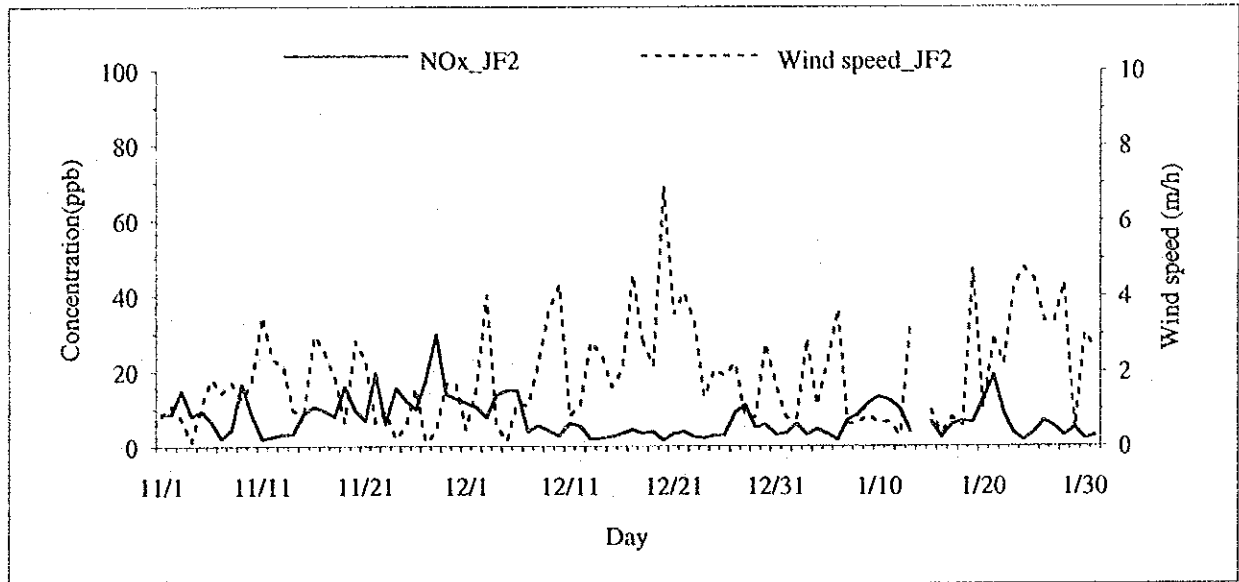


Figure D3.2.67 - (1) Daily Average NOx Concentration and Wind Speed (JF2 : 11/1 -1/31)

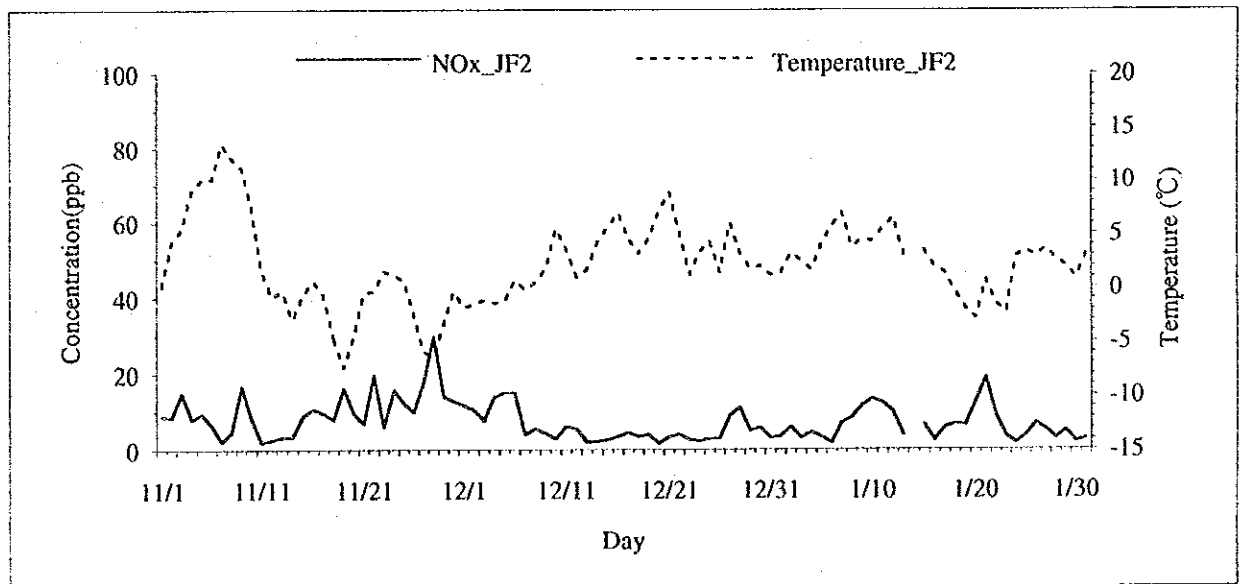


Figure D3.2.67 - (2) Daily Average NOx Concentration and Temperature (JF2 : 11/1 -1/31)

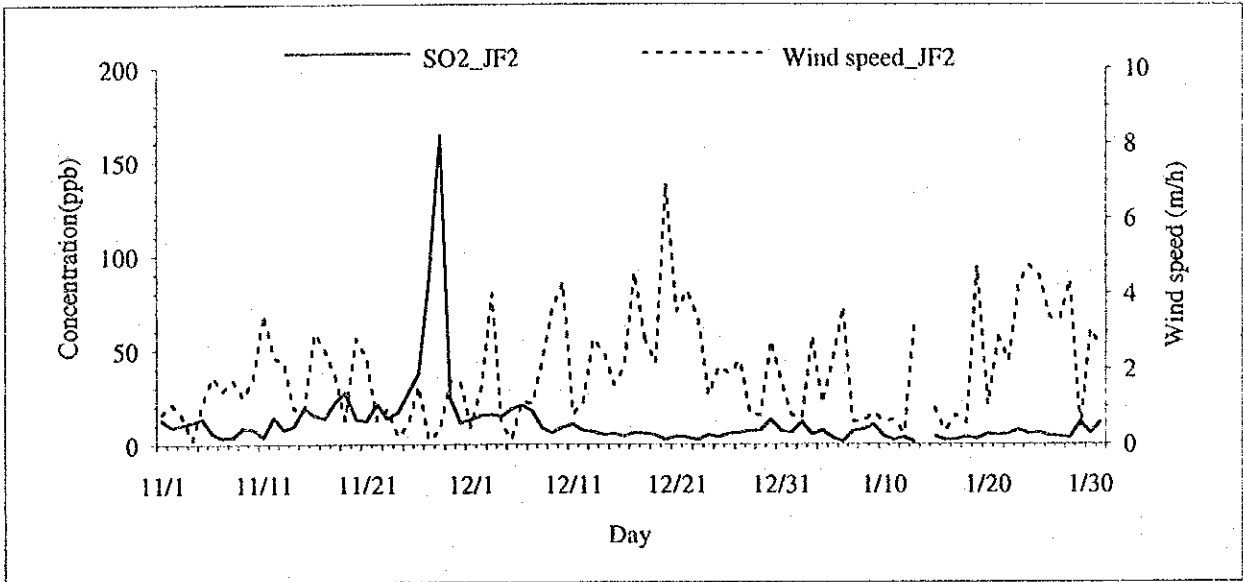


Figure D3.2.68 - (1) Daily Average SO2 Concentration and Wind Speed (JF2 : 11/1 -1/31)

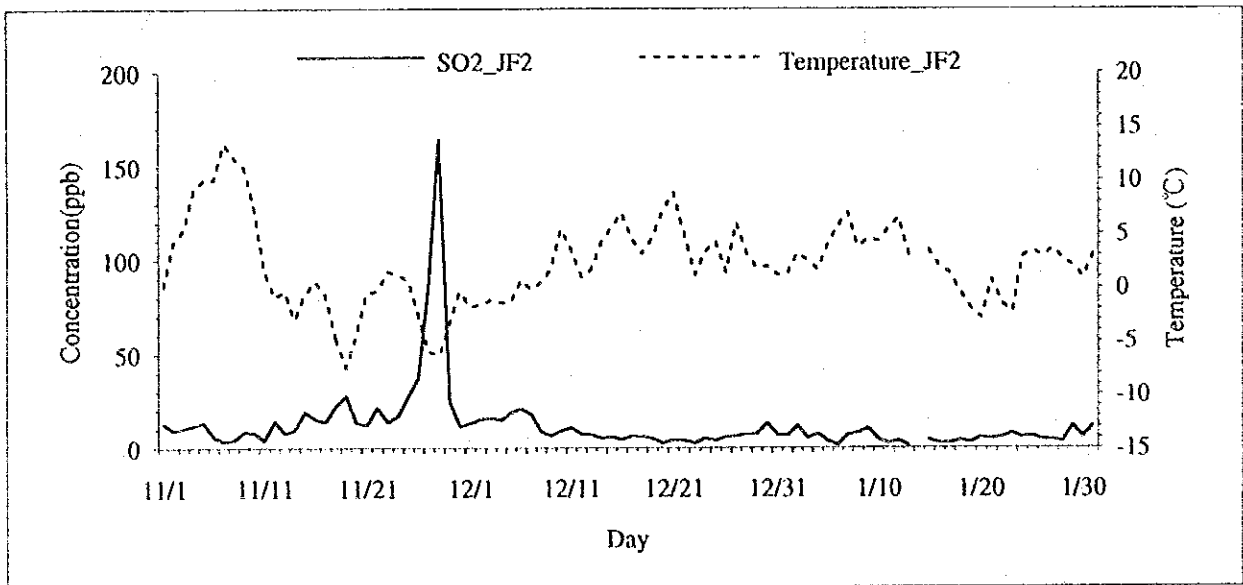


Figure D3.2.68 - (2) Daily Average SO2 Concentration and Temperature (JF2 : 11/1 -1/31)

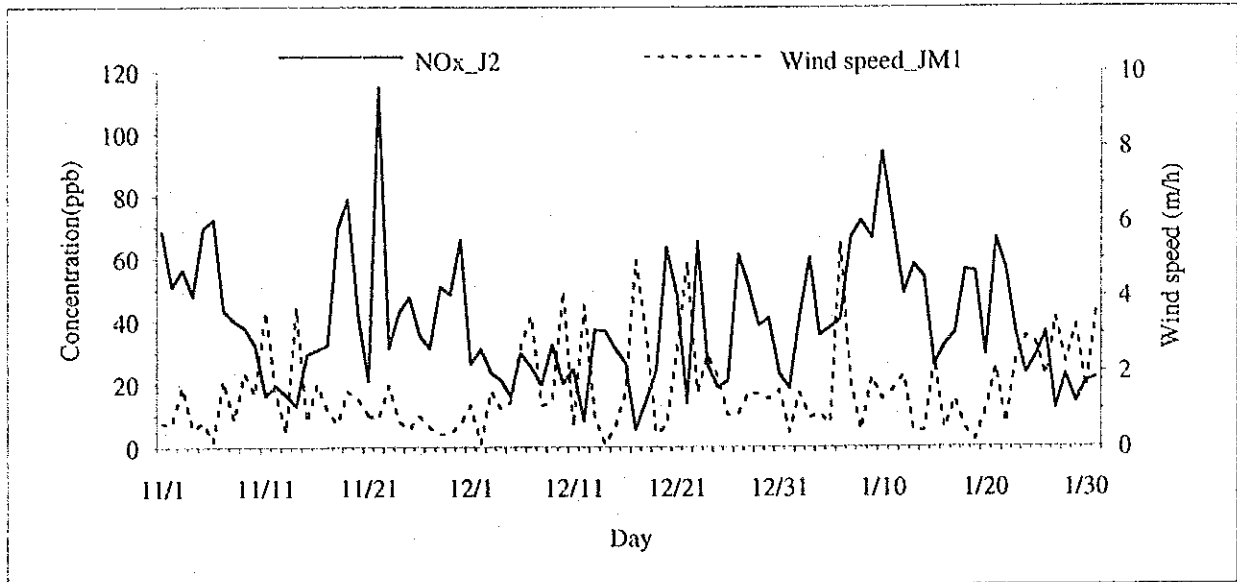


Figure D3.2.69 - (1) Daily Average NOx Concentration and Wind Speed (J2 : 11/1 -1/31)

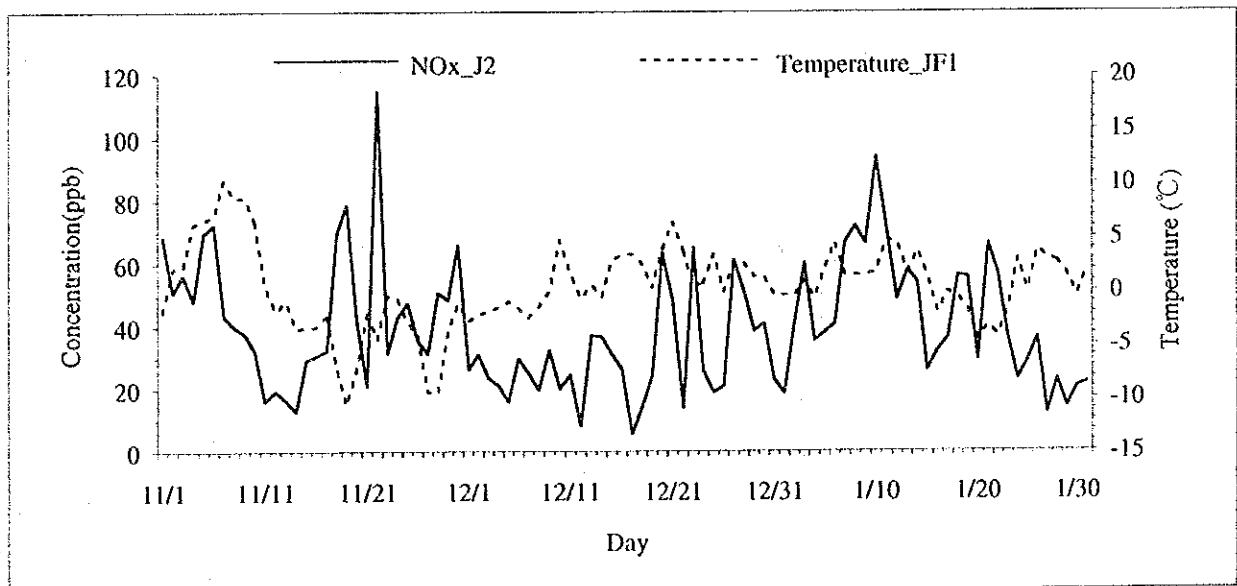


Figure D3.2.69 - (2) Daily Average NOx Concentration and Temperature (J2 : 11/1 -1/31)

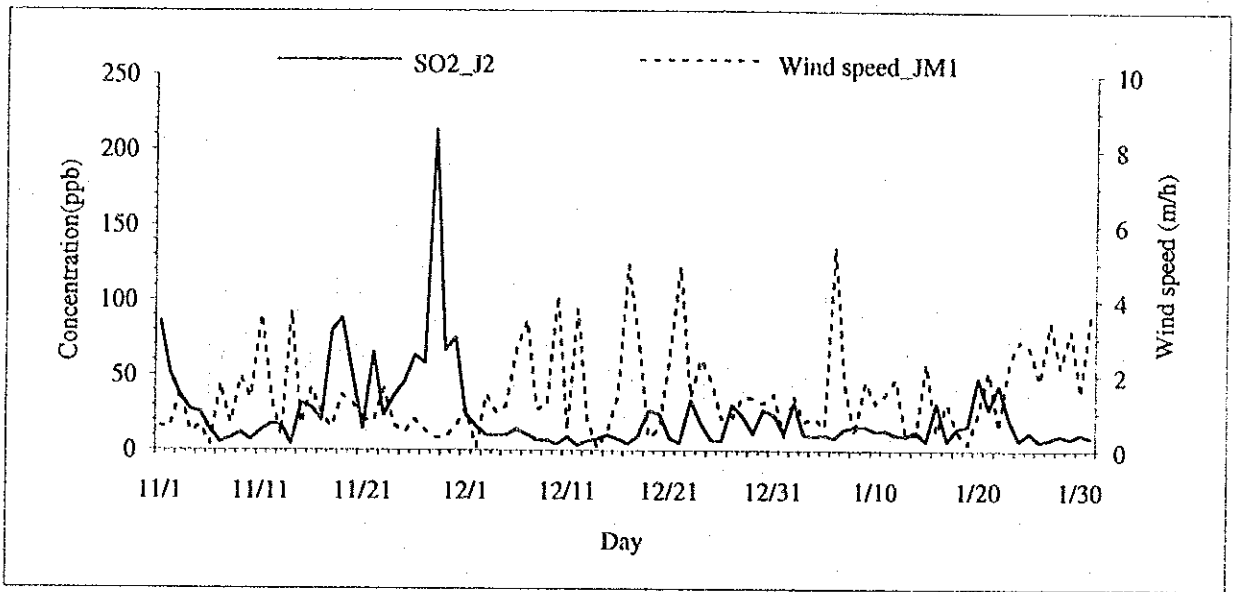


Figure D3.2.70 - (1) Daily Average SO2 Concentration and Wind Speed (J2 : 11/1 -1/31)

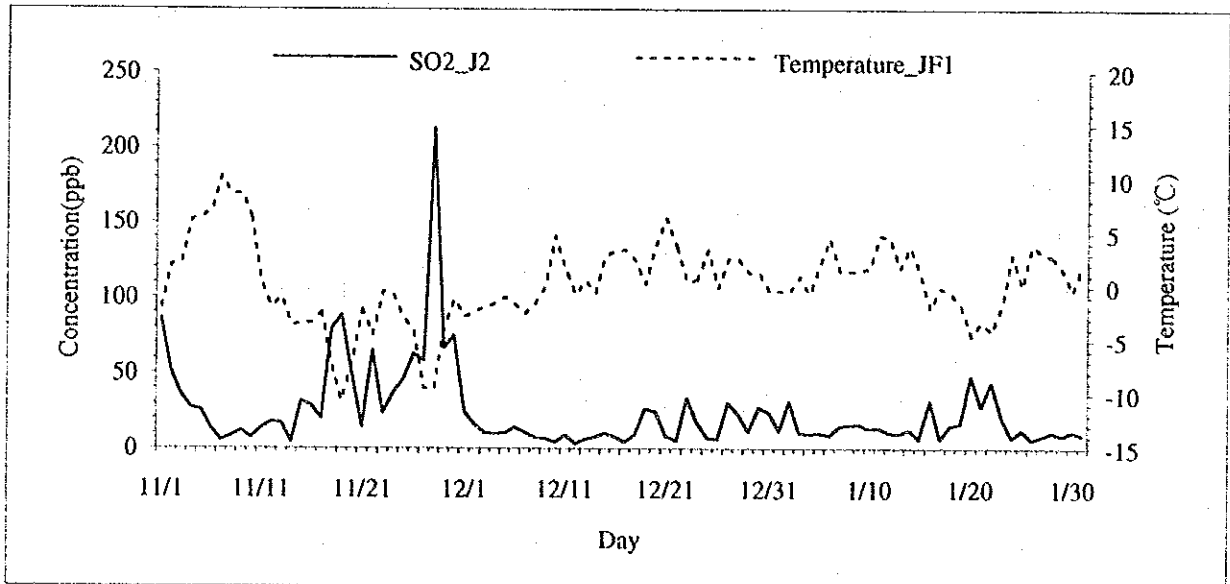


Figure D3.2.70 - (2) Daily Average SO2 Concentration and Temperature (J2 : 11/1 -1/31)

Table D3.3.1 Results of Roadside Measurement of NO, NO₂ and NO_x Concentrations by Simplified Method

(Unit: ppm)

Season		Summer			Winter		
Measuring Term		July 14 - 17, 1993			February 7 - 10, 1994		
Measuring Points		NO	NO ₂	NO _x	NO	NO ₂	NO _x
Along the Trunk Road	Item						
	1-U	0.005	0.011	0.016	0.035	0.029	0.064
	1-D	0.003	0.012	0.015	0.035	0.029	0.064
	2-U	0.005	0.008	0.013	0.039	0.031	0.070
	2-D	0.019	0.019	0.038	0.038	0.028	0.066
	3-U	0.002	0.008	0.010	0.034	0.026	0.060
	3-D	0.003	0.011	0.014	0.030	0.025	0.055
	4-①	0.006	0.020	0.026	0.046	0.038	0.084
	4-②	0.005	0.016	0.021	0.055	0.042	0.097
	4-③	0.009	0.020	0.029	-	-	-
	4-④	0.003	0.019	0.022	0.051	0.035	0.081
	4-⑤	0.003	0.015	0.018	0.046	0.034	0.080
	5-U	0.016	0.022	0.038	0.057	0.038	0.095
	5-D	0.014	0.024	0.038	0.068	0.044	0.112
	6-U	0.008	0.013	0.021	0.032	0.026	0.058
	6-D	0.002	0.009	0.011	0.039	0.028	0.067
	7-U	0.006	0.019	0.025	0.061	0.039	0.100
	7-D	0.004	0.015	0.019	0.054	0.035	0.089
	8-U	0.007	0.017	0.024	0.045	0.030	0.075
	8-D	0.001	0.017	0.018	0.054	0.035	0.089
9-U	-	-	-	0.028	0.024	0.052	
9-D	0.006	0.012	0.018	0.033	0.024	0.057	
10-U	0.011	0.013	0.024	0.033	0.022	0.055	
10-D	0.005	0.015	0.020	0.040	0.026	0.066	
Decrement of the Concentration with Distance	A-U 0m	0.006	0.007	0.013	0.035	0.024	0.059
	A-U 10m	0.002	0.007	0.009	0.029	0.021	0.050
	A-U 20m	0.001	0.006	0.007	0.028	0.021	0.049
	A-U 40m	0.001	0.006	0.007	0.025	0.020	0.045
	A-U 100m	0.000	0.006	0.006	0.025	0.019	0.044
	A-D 0m	0.006	0.009	0.015	0.032	0.021	0.053
	A-D 10m	0.002	0.008	0.010	0.027	0.020	0.047
	A-D 20m	0.002	0.008	0.010	0.025	0.019	0.044
	A-D 40m	0.002	0.007	0.009	0.023	0.018	0.041
	A-D 100m	0.002	0.007	0.009	0.024	0.018	0.042
	B-U 0m	0.004	0.008	0.012	0.043	0.028	0.071
	B-U 10m	0.004	0.006	0.010	0.035	0.026	0.061
	B-U 20m	0.002	0.006	0.008	0.032	0.026	0.058
	B-U 40m	0.001	0.007	0.008	0.031	0.024	0.055
	B-U 100m	0.000	0.008	0.008	0.028	0.024	0.052
	B-D 0m	0.006	0.009	0.015	0.049	0.031	0.080
	B-D 10m	0.002	0.008	0.010	0.040	0.026	0.066
	B-D 20m	0.003	0.006	0.009	0.035	0.026	0.061
B-D 40m	0.001	0.007	0.008	0.031	0.023	0.054	
B-D 100m	0.002	0.006	0.008	0.029	0.022	0.051	

Note: • U: Up line of the road
• D: Down line of the road

Table D3.3.2 Comparison Between Automatic Measuring Method and Simplified Measuring Method for NO, NO₂ and NO_x

(Unit: ppm)

Season	Measuring Points	NO		NO ₂		NO _x	
		Auto. (Y)	Simpli. (X)	Auto. (Y)	Simpli. (X)	Auto. (Y)	Simpli. (X)
Summer	J2	0.003	0.003	0.008	0.004	0.011	0.007
	J3	0.002	0.001	0.008	0.005	0.010	0.006
	J5	0.006	0.003	0.008	0.007	0.014	0.010
	J6	0.003	0.003	0.007	0.005	0.011	0.008
	J7	0.010	0.007	0.014	0.008	0.024	0.015
Winter	J2	0.058	0.056	0.033	0.032	0.091	0.088
	J3	0.025	0.028	0.024	0.023	0.049	0.051
	J5	0.020	0.023	0.023	0.023	0.043	0.046
	J6	0.031	0.030	0.033	0.031	0.064	0.061
	J7	0.028	0.031	0.021	0.022	0.049	0.053
Correlation Factor		Y=0.9672X+0.000679 R=0.99168		Y=0.8961X+0.003496 R=0.9858		Y=0.9334X+0.004301 R=0.9915	

Note : Auto. : Automatic Air Quality Measuring Method
Simpli. : Simplified Measuring Method

Table D3.3.3 The Results of Measurement of Falling Dust

Place	Map Cord	No.	April, 1993			May, 1993			June, 1993			July, 1993			August, 1993			September, 1993		
			Dis-soluble	Solu-ble	Total	Dis-soluble	Solu-ble	Total	Dis-soluble	Solu-ble	Total	Dis-soluble	Solu-ble	Total	Dis-soluble	Solu-ble	Total	Dis-soluble	Solu-ble	Total
Ozd	32077433	1	12.7	2.0	14.7	7.9	1.5	9.4	5.4	2.4	7.8	6.7	1.9	8.6	6.9	3.5	10.4	6.4	2.3	8.7
	32047442	2							14.2	2.1	16.3				1.7	1.4	3.1	4.5	1.3	5.8
	32087446	3	10.2	1.4	11.6	6.1	2.4	8.5	6.7	1.3	8.0	12.7	2.2	14.9	6.6	2.0	8.6	4.1	1.1	5.2
	32047409	4	6.5	0.9	7.4	2.3	1.3	3.6	8.6	1.1	9.7				2.1	1.4	3.5	2.7	1.2	3.9
	31677439	5	5.4	0.9	6.3	5.1	1.3	6.4				7.7	1.3	9.0						
	31877422	6							6.4	2.0	8.4	6.0	3.4	9.4	3.2	2.0	5.2	2.4	1.4	3.8
Kazinc-barcika	32167443	7	10.3	1.4	11.7	5.9	0.8	6.7												
	32497683	1	4.6	2.4	7.0	14.6	2.0	16.6	6.4	1.7	8.1	3.4	1.4	4.8	3.6	2.4	6.0	2.2	2.3	4.5
	32437687	2	3.5	1.5	5.0	6.5	1.4	7.9	11.7	0.2	11.9	9.2	5.5	14.7	6.9	3.0	9.9	4.1	3.2	7.3
	32427676	3	3.8	2.3	6.1	1.7	0.6	2.3	3.8	0.8	4.6	4.8	0.7	5.5	4.0	2.6	6.6	2.4	1.5	3.9
	32267655	4	3.0	1.3	4.3	6.8	3.3	10.1												
	32367663	5	2.6	1.0	3.6	6.3	2.2	8.5	26.1	0.5	26.6									
Sajo-szentpeter	32087724	1	4.3	2.9	7.2	2.8	1.1	3.9	2.1	0.8	2.9	0.5	0.4	0.9	4.6	1.3	5.9	4.1	1.6	5.7
	32117736	2	3.3	1.5	4.8	2.7	1.7	4.4												
	30787782	1							2.6	1.7	4.3	2.6	1.7	4.3	2.1	0.8	2.9	1.9	1.0	2.9
	30797808	2	13.6	0.9	14.5	3.9	1.8	5.7												
	30997798	3				1.3	1.5	2.8	0.4	0.4	0.8	0.4	0.4	0.8	6.7	2.4	9.1	1.6	0.6	2.2
	30917807	4	5.3	3.4	8.7	4.1	1.3	5.4	6.2	1.2	7.4	0.2	1.2	1.4	3.7	4.3	8.0	0.3	0.8	1.1
Miskolc	30797805	5	4.3	0.5	4.8	4.7	1.4	6.1	9.2	1.2	10.4	9.2	1.2	10.4	4.4	3.6	8.0	0.7	0.5	1.2
	30667815	6	1.5	1.6	3.1	2.3	2.8	5.1	3.0	1.8	4.8	3.0	1.6	4.6	4.3	2.1	6.4	1.4	0.9	2.3
	30467828	7													8.0	4.1	12.1	2.8	1.1	3.9
	30417800	8	3.5	2.4	5.9	3.1	1.5	4.6												
	30517780	9							1.8	1.1	2.9	1.8	1.1	2.9				1.0	1.8	2.8
	30607794	10	4.4	2.1	6.5	5.7	1.0	6.7	6.7	1.1	7.8	6.7	1.1	7.8	2.9	2.0	4.9	2.0	0.1	2.1
	30827783	11				7.5	1.6	9.1	6.3	1.9	8.2	6.3	1.9	8.2	1.9	1.2	3.1	2.2	1.6	3.8
	30747767	12				1.8	0.8	2.6	6.6	1.3	7.9	6.6	1.3	7.9				14.2	3.6	17.8
	30757758	13	5.3	1.1	6.4	2.7	1.7	4.4	2.6	1.6	4.2	2.6	1.6	4.2	4.2	2.7	6.9	3.7	1.2	4.9
	30727747	14	9.9	1.2	11.1	7.0	5.8	12.8	11.5	2.2	13.7	11.5	2.2	13.7	2.8	2.7	5.5	2.0	1.2	3.2
	30637760	15	2.7	0.2	2.9	2.8	1.2	4.0							10.1	6.2	16.3	5.2	0.5	5.7
	30507748	16				0.9	3.1	4.0							3.0	3.3	6.3	1.0	1.2	2.2
	30627744	17	1.8	1.6	3.4				7.6	1.1	8.7	7.6	1.1	8.7	3.7	2.4	6.1	1.7	1.2	2.9
	31077715	18												0.0	5.8	2.2	8.0	1.1	1.2	2.3
	30767762	19				1.9	1.6	3.5	1.7	1.4	3.1	1.7	1.4	3.1						
	30757714	20	3.7	2.2	5.9	6.4	2.5	8.9	8.6	7.8	16.4	8.6	7.8	16.4	3.9	4.1	8.0			
	30987692	21													0.9	1.1	2.0	1.6	0.5	2.1
	30787676	22	2.0	1.2	3.2	3.7	1.4	5.1							5.1	5.5	10.6	4.9	2.0	6.9
30387682	24													2.0	2.4	4.4	2.6	1.2	3.8	
Tiszaujvaros	28947986	1	2.8	0.7	3.5	3.3	1.6	4.9										3.4	1.1	4.5
	28947986	2	3.0	2.1	5.1	3.9	1.9	5.8				2.7	0.4	3.1	2.5	1.9	4.4	1.9	2.3	4.2
	28947986	3	2.4	1.1	3.5	3.1	1.4	4.5	8.2	2.8	11.0	2.6	0.9	3.4	3.9	3.4	7.3	2.1	0.3	2.4
	28947986	4							6.2	3.0	9.2	6.1	2.9	9.0	4.7	1.7	6.4	3.8	1.6	5.4
	28947986	5	1.7	2.0	3.7	2.2	1.3	3.5	5.5	3.6	9.1									

(Unit : g/m²/month)

Place	Map Cord	No.	October, 1993			November, 1993			December, 1993			January, 1994			February, 1994			March, 1994			April, 1994		
			Dis-soluble	Solu-ble	Total	Dis-soluble	Solu-ble	Total	Dis-soluble	Solu-ble	Total	Dis-soluble	Solu-ble	Total	Dis-soluble	Solu-ble	Total	Dis-soluble	Solu-ble	Total	Dis-soluble	Solu-ble	Total
Ozd	32077433	1	9.0	1.1	10.1	6.5	1.7	8.2	11.8	2.0	13.8	10.8	3.2	14.0	24.3	4.9	29.2	15.4	4.4	19.8	15.1	4.4	19.5
	32047442	2	31.8	1.6	33.4	5.2	1.5	6.7	20.5	2.0	22.5	25.7	0.5	26.2	6.6	2.1	8.7	14.3	1.9	16.2	12.9	3.2	16.1
	32087446	3	23.8	2.3	26.1	5.1	0.7	5.8	21.1	1.8	22.9	15.3	2.2	17.5	33.4	2.9	36.3	17.3	1.8	19.1	7.7	2.8	10.5
	32047409	4	3.1	0.8	3.9	2.7	1.8	4.5	3.3	1.7	5.0	5.9	1.2	7.1	5.7	1.4	7.1	5.2	2.6	7.8	6.2	3.2	9.4
	31677439	5																					
	31877422	6	4.7	1.8	6.5	2.2	4.8	7.0	6.6	3.3	9.9	4.5	0.6	5.1	12.4	2.6	15.0	5.8	2.3	8.1	5.3	2.9	8.2
Kazinc-barcika	32497683	1	1.1	1.0	2.1	2.1	0.4	2.5	0.9	0.6	1.5	0.6	0.1	0.7	2.8	0.9	3.7	2.0	1.6	3.6	2.4	2.0	4.4
	32437687	2	10.5	10.4	20.9	4.4	2.2	6.6	1.7	0.4	2.1	1.4	1.3	2.7	3.6	0.6	4.2	3.2	0.7	3.9	7.9	3.9	11.8
	32427676	3	1.6	0.2	1.8	2.6	1.8	4.4	2.9	1.6	4.5	1.8	0.6	2.4	2.2	1.9	4.1	4.0	1.0	5.0	2.2	1.1	3.3
	32267655	4																					
	32367663	5																					
	32087724	1	5.1	2.8	7.9	6.7	1.1	7.8	2.9	0.5	3.4	1.7	1.1	2.8	3.6	2.5	6.1	4.9	1.5	6.4	3.9	0.4	4.3
Miskolc	32117736	2				6.0	2.8	8.8	4.9	1.9	6.8	11.3	1.6	12.9	5.1	1.8	6.9	14.6	1.4	16.0	8.6	2.2	10.8
	30787782	1	0.8	0.6	1.4	2.3	0.9	3.2	2.0	0.5	2.5	1.3	1.3	2.6	1.7	1.6	3.3	2.8	2.2	5.0	3.2	1.0	4.2
	30797808	2																					
	30997798	3	4.0	1.5	5.5	7.1	2.0	9.1	7.6	1.8	9.4	4.4	0.3	4.7	5.8	3.4	9.2	1.8	1.5	3.3	3.0	0.8	3.8
	30917807	4	1.8	0.7	2.5	4.7	1.2	5.9	4.5	0.8	5.3	1.1	0.7	1.8	3.1	1.6	4.7	4.6	1.8	6.4	6.2	4.0	10.2
	30797805	5	2.7	0.5	3.2	5.1	1.0	6.1	5.7	0.6	6.3	3.2	2.0	5.2	2.2	1.7	3.9	16.1	2.4	18.5	5.8	3.2	9.0
	30667815	6	2.7	0.8	3.5	3.6	1.2	4.8	3.4	1.4	4.8	1.9	0.9	2.8	0.6	0.6	1.2	3.9	2.7	6.6			
	30467828	7	3.0	0.5	3.5	4.0	0.9	4.9	3.5	0.7	4.2	2.2	2.2	4.4	1.1	1.7	2.8	4.9	2.0	6.9	3.5	3.3	6.8
	30417800	8										2.3	2.9	5.2	2.2	0.7	2.9	8.3	3.6	11.9	6.5	4.0	10.5
	30517780	9				4.1	1.8	5.9	3.8	1.6	5.4										4.5	3.1	7.6
	30607794	10																					

DATA FOR CHAPTER 4

Table D4.1.1 Form of Questionnaire Survey on Factories

Stationary Source

Name of Enterprise			
Location			
Name of Answerer		Connection Point Tel:	
Number of Employee		Facility No.	
Name of Facility		Age	years
Products		Amount of Product t/year	
Amount of Steam Generation	t/h	Common Use	t/h
Name of Fuel			
Calorific Value	kg	kg	kcal/m ³
Sulfur Content	%		
Amount of Fuel Consumption	kg/h		m ³ /h
Number of Hours worked	h/day		h/month
Conditions of Facility / Modern, Old /			
Fuel Ratio (When various fuels are in use)			
Combustion Mode			
Type of Combustion Equipment			
Stack Height	m	Stack Diameter	m Emission of Pollutants
Average Working Hours per Day by Every Quarter of the Year	I.	II.	III. IV.
Facility & Equipment for Pollution Control Measures			
State of Pollution Control Measures			
Cost of Control Measures			
Future Plan to be taken for Control Measures			
Financial Demand of Control Measures			
Other Comments			
Mesh Number		Questioner:	

- Note: - This form is to be filled by pollution source.
 - Simplified process chart is to be attached.
 - On the process chart input and output flows are to be indicated.
 - Summaries of technological description are requested.

Table D4.1.2(1) Summary Result of Questionnaire and Visiting Surveys

No	E/N	Plant name and Location	Type of Industry	Operation Rate	Employee	Main Product	Output	Kind of fuel	Fuels Used	Pollution Source Category	Kind of Pollutants Emitted	Number of Stacks	Equipment of Measures	Cost for Measures	Future Plan	Financial Demand	Remarks
1	02/1	ÖZDI KÖHÁSZATI ÜZEMEK TÖRZSÉGVÁR 3602 ÖZD RÓMBAUER TER. 1	Iron and Steel	65 % in 1992	65	Steam Electricity Steam Hot water	394,200 t/y 4.8 GWh 855,195 GJ 176,155 GJ	Brown Coal Natural Gas	34,824.60 t/y 19,095,000 Nm ³ /y in 1992	1) Sources emitting air pollutants due to fuel combustion	a) SO ₂ , NO _x , CO, dust b) NO _x , CO (natural gas used as main fuel)	4 1	Filter(80%) AWAN-TONGEREN(60%)	-	-	-	Be in bankruptcy
2	02/3	PEKO ACÉLIPARI MŰVEK 3600 ÖZD GYAR U. 1. SZ.	Iron Casting	55 % in 1992 80 % in 1993	395	Hot Rolling Steel	33,700 t/y	Natural Gas	3,686,750 Nm ³ /y in 1992	1) Sources emitting air pollutants due to fuel combustion	b) NO _x , CO (natural gas used as main fuel)	2	-	-	-	-	Private company
3	02/4	ÖZDI ACÉLIPARI RT. 3602 ÖZD	Iron Casting	45 % in 1992	442	Martin Steel Dry ferro alloy Rod & wire Hot water	8,201.35 t/y 25 t/y 24,901 t/y 17,822.5 GJ	Heating Oil Natural Gas Natural Gas	865.61 t/y 486,256 Nm ³ /y 1,121,327 Nm ³ /y 660,133 Nm ³ /y	1) Sources emitting air pollutants due to fuel combustion 3) Sources of dust	a) SO ₂ , NO _x , CO, dust b) NO _x , CO (natural gas used as main fuel) c) Dust	2 3 1	E.P.(97.4%) and SZINKTI 240 Bag Filter (98%)	1,500,000 FT/Y 50,000 FT/Y	-	-	Be in bankruptcy
4	02/7	FINOMBESZÉRMŰ MUNKÁS KFT 3601 ÖZD, 1.	Rolling Mill	10 % in 1992 13 % in 1993	660	Hot rolling Form Steel and Bar Steel	42,785.85 t/y	Natural Gas	3,893,795.5 Nm ³ /y in 1992	1) Sources emitting air pollutants due to fuel combustion	b) NO _x , CO (natural gas used as main fuel)	3	-	-	Alteration of electric heat exchanger	Procurement by tender	
5	03/0	ESZAKHAGYARORSZÁGI TEGLA ÉS CSÉREPÁRRI VALLALAT PUTNOKI TEGLAGYAR 3729 SERENYFALVA	Brick	30-35 % in 1992	115	Brick	Pre-drying Pro. 25,887,000pc/y Finished Pro. 24,573,000pc/y	Coal (Material) Wood Flour(ditto) Light Oil Coal for boilers	8,081 t/y 2,673 t/y 20 t/y 206 t/y	1) Sources emitting air pollutants due to fuel combustion	a) SO ₂ , NO _x , CO, dust	4 + 5 (by drying process)	-	-	Change to natural gas	Self own funds inside of the site. Municipality's funds outside of the site	Fluorine is contained in clay. Low S coal is short.
6	04/1	BŐRSÓCSEH RT. 3702 KAZINCBARCIKA BOLYAI TER 2.	Chemical	35 % in 1992	4100	Vinyl chloride Polyethylen PVC MDI	146,940 t/y 454.4 t/y 177,034 t/y 5,846 t/y	Natural Gas	18,367,500 Nm ³ in 1992	1) Sources emitting air pollutants due to fuel combustion 2) Sources emitting air pollutants from production processes of chemical products	b) NO _x , CO (natural gas used as main fuel) a) Cl ₂ , HCl, COCl ₂ , etc. b) H ₂ O, dust, etc.	3 14 16	Washing, catalyst, absorption Filters (99.9%) Cyclone (99.9%)	-	-	-	
7	05/0	BORSÓDI ENERGETIKAI KFT. (BORSÓDI MŰKÖRŐMŰ) 3704 KAZINCBARCIKA IPARI 7	Thermal Power	45.1% in 1991 40.5% in 1992 28.4% in 1993	800	Electric power Steam Hot water	599 GWh 2,512,541 GJ 655,196 GJ	Brown Coal Natural Gas Oil	1,174,307 t/y 31,857,000 Nm ³ /y 118 t/y in 1992	1) Sources emitting air pollutants due to fuel combustion	a) SO ₂ , NO _x , CO, dust	3	E.P. (99.5%)	-	Alteration of plant * A circulation fluid bed boiler is to be planned. * Four old boilers are to be converted to hybrid type boilers.	Foreign loan	
8	06/0	YTONG BORSÓD FALAZÓÉLEM 3700 KAZINCBARCIKA IPARI U.17	Construction Materials	30 % in 1992 40 % in 1993	152	Construction materials in use of fly ash	144,190 m ³ /y	- Steam is provided from other company	-	3) Sources of dust only	a) Fly ash	33	Bag filters (98%)	20,000 FT/Y 95,000 FT/Y	-	-	Private company
9	07/0	PANNONGLAS IPARI RT. SAJÓSZENTPÉTERI ÜVEGGYAR 3770 SAJÓSZENTPÉTER GYARTELEP PF. 20	Glass	20 % in 1991 20 % in 1992 30 % in 1993	288	Glasses and Bottles	56,865.5 t/y	Natural Gas	19,263,000 Nm ³ /y in 1992	1) Sources emitting air pollutants due to fuel combustion 3) Sources of dust only	b) NO _x , CO (natural gas used as main fuel) a) dust	12 9	- Bag filters (80%) Cyclone (60%)	-	-	Be in bankruptcy	
10	08/0	BORSÓDI ÉRCELOKESZÍTŐ MŰ ZSOGORITO KFT. 3791 SAJÓKERESZTÜR	Ore Processing	15 % in 1992 30 % in 1993	751	Ore preparation	461,385 t/y	Natural Gas Coke & Coal	2,583,756 Nm ³ /y 30,913 t/y in 1992	1) Sources emitting air pollutants due to fuel combustion 3) Sources of dust only	a) SO ₂ , NO _x , CO, dust NO _x , CO a) dust	1 1 4 5 (Building)	Multi-cyclones (85%) Bag filters (80-95%) Electrostatic filters (99.9%)	1,200,000 FT/Y 5,600,000 FT/Y 6,000,000 FT/Y	Maintenance Maintenance Maintenance	Be in bankruptcy To be closed (1995)	
11	09/1	PORAN POLIURETAN GYÁRTÓ ÉS ERTEKESÍTŐ KFT. 3792 SAJÓBÁBONY PF. 16	Chemical	10-20 % in 1992	236	Soft-polyurethane	4,000 t/y	Propan + Butan	210 kg/h (New) in 1993	1) Sources emitting air pollutants due to fuel combustion 2) Sources emitting air pollutants from production processes of chemical products	b) NO _x , CO Freon-12 (CF ₂ Cl ₂)	1 15 1 (Building)	-	-	-	-	
12	09/2	SÁGRÓCHEM KFT 3792 SAJÓBÁBONY	Chemical	20 % in 1991 20 % in 1992 20 % in 1993	765	Phenil isocinate Acetanilide Steam Electricity	900 t/y 6,000 t/y 172,914 t/y 3.58 GWh	Light Oil Heavy Oil	2.85 t/y 13,396.9 t/y in 1992	1) Sources emitting air pollutants due to fuel combustion 2) Sources emitting air pollutants from production processes of chemical products	a) SO ₂ , NO _x , CO, dust a) Cl ₂ , HCl, COCl ₂ , etc. b) dust, etc.	3 10 3	Flow back water absorber (99%) Alkaline water absorber + charcoal (99%) Cyclone (98%)	1,500 FT/h + 300,000 t/y 3,700 FT/h	Modernization of circuit Modernization of HCl absorption and detoxification of phosgene	3,000,000 FT 58,000,000 FT loan	

Table D4.1.2(2) Summary Result of Questionnaire and Visiting Surveys

No.	R/A	Plant name and Location	Type of Industry	Operation Rate	Employee	Main Product	Output	Kind of Fuel	Fuels Used	Pollution Source Category	Kind of Pollutants Emitted	Number of Stacks	Equipment of Measures	Cost for Measures	Future Plan	Financial Demand	Remarks
13	09/4	INTERHED KFT 3792 SAJOBABONY	Chemical	20 X in 1991 20 X in 1992 20 X in 1993	267	Deuron Formaldehyde Desulphurine	480 t/y 9,426 t/y 9 t/y	Steam is provided from Sagrochem		2) Sources emitting air pollutants from production processes of chemical products	a) Cl2, HCl, COCl2, etc. b) dust, etc.	18 10	Water absorber (90%) Bag filters (80-90%)	-	Modernization of absorber Modernization of bag filters and suckers	32,000,000 FT 13,500,000 FT	
14	10/0	DECEMBER 4. BROTMÜVEK 3501 MISKOLC BESENYOI U. 18. SZ	Wire	35 X in 1991 30 X in 1992 20 X in 1993	1100	Wire, Electric wire, Plating cables Heat energy	27,000 t/y 182,660 GJ	Natural Gas	1,267,306 Nm3/y	1) Sources emitting air pollutants due to fuel combustion 2) Sources emitting air pollutants from production processes of chemical treatments	b) NOx, CO, dust HCl	27 8	Dust showers (80%) Bag filters (80%) Filters (90%)	-	Measures to against vapour of HCl	One's own expenses is impossible. They ask state for expenses. Tender	Be in bankruptcy
15	11/0	MISKOLCI MEZŐGÉP VALLALAT changed to --- MIHIG KFT. 3527 MISKOLC BESENYOI U. 10	Mechanical Parts Farm Machine	50 X in 1992	240	Machine parts Hybride cre-linders, brake valves	200,000,000 FT/Y	Natural Gas	800,000 Nm3/y in 1992	1) Sources emitting air pollutants due to fuel combustion	b) NOx, CO Dust Xylene	5 4 2	Bag filters (91-96%) in the ventilation of finishing process	Unknown Filters change is made once two years	None		Be in bankruptcy Be in limited company as of Jun. 01 1993
16	12/0	BAMAS EAEY ÉPÍTÉSÉPESITŐ ES SZOLGÁLTATÓ KFT 3527 MISKOLC TÜRER UT 12	Heavy Machine Lease	Construction Firm is under Bankruptcy	55	Lease for construction machines Holding 50 large size vehicles	166	Diesel Oil	16,800 l/y in 1992	1) Sources emitting air pollutants due to fuel combustion	b) NOx, CO, SO2	2					Be in bankruptcy
17	13/0	DIOSGYÖRI PAPIRGYAR LEANYVALLALAT 3535 MISKOLC HEGYALJA UT. 203/A	Paper Mill	60 X in 1992	270	Slick Paper Steam	3000-3600 t/y 25,854 t/y	Natural Gas	2,173,000 Nm3/y in 1992	1) Sources emitting air pollutants due to fuel combustion	b) NOx, CO	2			Enlargement of production lines Grade up boiler capacity Low NOx burner	Nothing at present time, they want to check assistance of state, foreign Inter. Organ., Self-funds	Vaporization of formaldehyde there are sewage disposal, not clear std.
18	14/1	DIOSGYÖRI GÉPGYAR I-II. TELEP 3544 MISKOLC KERPELY ÁNTAL U.	Machine	95% in 1987 30-40 X in 1992 20-40 X in 1993 90 X for Hot Rolling	2818	Machine	2.2 - 2.4 billion FT/y	Natural Gas	17,772,000 Nm3/y in 1992	1) Sources emitting air pollutants due to fuel combustion 2) Sources emitting air pollutants from production processes of chemical treatments	b) NOx, CO HCl, dust, etc.	19 22	Mech. dust sepa. (90-95%) E.P. (99%) Bag filters (98%)				Be in bankruptcy
19	14/2	DIOSGYÖRI GÉPGYAR III TELEP 3544 MISKOLC TATARAROK Transfer of firm's name in the register to ARMY COOP KFT. 1993.07.01	Machine					Natural Gas	1,063,200 Nm3/y in 1992	1) Sources emitting air pollutants due to fuel combustion 2) Sources emitting air pollutants from production processes of chemical treatments	b) NOx, CO HCl, dust, etc.	3 6	Mech. dust sepa. (90-95%) Wet type filters (98%)				Be in bankruptcy
20	15/1	HAMOR RESZVENYTARSASAG 3540 MISKOLC HERCEG FERENC 43.	Iron Casting	80 X in 1991 60 X in 1992 <50 X in 1993	406	Semi-goods Iron Wheels Shafts Heat treated M.	3,158 t/y 4,742 t/y 902 t/y 4,060 t/y	Natural Gas	4,690,000 Nm3/y in 1992	1) Sources emitting air pollutants due to fuel combustion	b) NOx, CO	8			From natural gas to electricity (for quality grade up)	Impossible owing self funds. Expecting loan and cooperation of aid	J/V with German co. Overage of facilities Large loss in energy
21	15/2	DIOSGYÖRI ACÉL ES VASONTÓ KFT 3540 MISKOLC HERCEG FERENC 4143	Steel and Holding	11 X in 1992 20 X in 1993	413	Steel casting Iron casting Electrosteel Sand preparation	2,843 t/y 664 t/y 4929 t/y 4,350 t/y	Natural Gas Blast Furnace Gas (Electricity)	1,470,000 Nm3/y 252,000 Nm3/y in 1992	1) Sources emitting air pollutants due to fuel combustion 3) Sources of dust only	b) NOx, CO a) dust (mostly metal factories)	6 8	Bag filters (95%) Wet t. dust filters (85%) Wet type cyclone (85%)	1,000,000 FT/Y 3,000,000 FT/Y 500,000 FT/Y	Maintenance Maintenance Dust suck from Arc furn.	It is impossible to bear self own funds. Expecting loan and cooperation of aid	Be in bankruptcy
22	15/3	CSAVAR- ES MEZŐTÁRÚ RT. 3520 MISKOLC HERCEG FERENC U	Machine Screw and Wire	100 X in 1989 38 X in 1990 27 X in 1991 16 X in 1992 32 X in 1993	436	Blots Metal parts	2,231 t/y 2,103 t/y 4,784 t/y 129.7 t/y	Natural Gas	1,480,000 Nm3/y 337,100 Nm3/y in 1992	1) Sources emitting air pollutants due to fuel combustion 2) Sources emitting air pollutants from production processes of chemical treatments	b) NOx, CO HCl, H2SO4, dust, etc.	13 3	Bag filters (99.7%) Wet type filters (95%)		Maintenance Repair, Exchange gas pipes, Maintenance	2,080,000 FT 1,300,000 FT	
23	15/4	BNI DIOSGYÖRI NEMESACÉL MŰVEK FA. 3540 MISKOLC VASGYAR UT 43	Iron and Steel	54 X in 1992	5000	Pig iron Blast gas Iron and steel Ele. fur. steel Alloy steel Heat resist. G. Steam Hot ingot Polished steel	257,010.5 t/y 496,198,875 Nm3/y 284,524 t/y 34,235 t/y 72,566 t/y 2,936+1,549 t/y 158,383 t/y 178,343 t/y 54,457 t/y	Natural Gas Coke Blast Furnace Gas	63,910,400 Nm3/y 139,377 t/y 40,824,800 Nm3/y in 1992	1) Sources emitting air pollutants due to fuel combustion 3) Sources of dust only	b) NOx, CO, Dust SO2, NOx, CO, Dust b) NOx, CO Dust	5 2 14 + 1 (pause) 7	E.P. (99.5%) Cyclone (78%) Bag filters (85%) Total efficiency: 99.99% Bag, cyclone (85%) Ventril scrubber (99.95%) Flame filters (99%) Multi-cyclone (75-87%), Suckers in bunker, polish	18,089,599 FT/Y 672,430 FT/Y for dust treatment including in above 36,580,781 FT/Y 30,063,493 FT/Y 50,011,476 FT/Y include others	Blast furnace is to be phased out in future.	Be in bankruptcy	
24	16/0	CHINÓIN RT. DIOSGYÖRI TELEP 3531 MISKOLC KISS ERNO UT. 19	Medicine	60 X in 1992	3200 53 for the said plant	Medicine Diuretic Steam	30 t/y 21,830 GJ	Natural Gas	809,423 Nm3/y in 1992	1) Sources emitting air pollutants due to fuel combustion 3) Sources of dust only	b) NOx, CO Dust, vapor, etc.	2 4	Filters (99%)				to be shutdown

Note: X indicates that operation was to stop beyond October 1993
* indicates small scale stationary source

Table D4.1.2(3) Summary Result of Questionnaire and Visiting Surveys

No.	R/N	Plant name and Location	Type of Industry	Operation Rate	Employee	Main Product	Output	Kind of fuel	Fuels Used	Pollution Source Category	Kind of Pollutants Emitted	Number of Stacks	Equipment of Measures	Cost for Measures	Future Plan	Financial Demand	Remarks
25	17/1	MEJOCASABAI CEMENT- ES MESZIPARI RT. KOZPONTI TELEP 3505 MISKOLC FOGARASI U. 6. SZ. MEJOCASABAI CEMENT- ES MESZIPARI RT. KOBANYA UZEM	Cement	50 % in 1992	500 60	Clinker Burned solid lime Cement Line stone	352,175 t/y 78,180 t/y 497,481 t/y 832,880 t/y	Natural Gas Fuel Oil	39,537,972 Nm ³ /y 9,360,480 Nm ³ /y 77.64 t/y in 1992	1) Sources emitting air pollutants due to fuel combustion 3) Sources of dust only 1) Sources emitting air pollutants due to fuel combustion 3) Sources of dust only	a) SO ₂ , NO _x , CO, Dust b) NO _x , CO, Dust Dust b) SO ₂ , NO _x , CO, Dust Dust b) NO _x , CO, Dust	1 8 16 2 2 1	Lurg's filters (99.96%) W-T-120 NT 126 filters (99%) SFD, S2NB Filters(98-99%) VA 112/108(99%) Bag filters	- - - - -	- - - - -	- - - - -	- - - - -
26	18/0	STRABAG HUNGARIA EPTO KFT 3527 MISKOLC PARTIZAN U.	Construction	60-80 % in 1993 Trial test for new facility began from July in 1993	60	Rolling Asphalt	30,000 t/y	Natural Gas	176,000 Nm ³ /y (1993.7.7--1993.10.5)	1) Sources emitting air pollutants due to fuel combustion	b) NO _x , CO, Dust	1	Bag filters	-	-	-	-
27	19/0	MEZOGEP VALLALAT 3561 TELSOZSOLCA ALLOMAS U. 5 SZ.	Farm Machine	30 % in 1992	177 New 50 is to be cut	Pump Parts for farm machine	29 t/y Volumes of aluminum melted	Fuel Oil	135 t/y in 1992	1) Sources emitting air pollutants due to fuel combustion 3) Sources of dust only	b) SO ₂ , NO _x , CO, Dust b) SO ₂ , CO, Dust Dust	1 3 1	- - -	- - -	- - -	- - -	
28	20/0	ALSOZSOLCAI VASBETONIPARI VALLALAT 3571 ALSOZSOLCA GYAR U. SZ.	Construction Materials Cement and Iron	30 % in 1992	540 340 in the end of 1993	Ferrocement utility pole Roof panel	water.(cement sand .beton) 40,000-50,000kg Iron(10,000t)	Fuel Oil(T20/40) Fuel Oil(F60/130) used	47 t/y 1,882 t/y in 1992	1) Sources emitting air pollutants due to fuel combustion 3) Sources of dust only	b) SO ₂ , NO _x , CO, Dust Dust	1 11	- -	- -	- -	- -	
29	21/0	EMO. TEGLA- ES CSEKEPIPARI VALLALAT MALYI TEGLAGYARA 3434 MALYI	Brick	30 % in 1992 35 % in 1993	119	Brick	Pre-drying Pro. 39,864,000pc./y Finished Pro. 38,226,000pc./y	Natural Gas Coal Wood Flour	2,923,000 Nm ³ /y 121 t/y 4,770 t/y in 1992	1) Sources emitting air pollutants due to fuel combustion 3) Sources of dust only	b) SO ₂ , NO _x , CO, Dust b) NO _x , CO Dust	1 45 1	- -	- -	Lubricating oils are to be recycled At company's own expense and funds in aid	12,000,000 Ft Problems of waste disposal Problems of noise	
30	22/0	MISKOLCI UTEPITO KFT NYEKI ASZFALTKEVERO 3433 NYEKLAHAZA VAGOHID U.9.	Asphalt	30 % in 1992	8	Asphalt	71,000 t/y	Natural Gas	666,600 Nm ³ /y in 1992	1) Sources emitting air pollutants due to fuel combustion	b) SO ₂ , NO _x , CO, Dust b) NO _x , CO	1 1	Bag filters	1,500,000 Ft/y	Plan for asphalt recycle (Whole prefecture size) It is desired to be separated into fine asphalt and coarse asphalt.	It is desired to be implemented at company's own expense	Manual ignition for burner
31	23/1	TISZAI VEGYI KOMBINAT RESZVENYARSASAG 3581 TISZAUJVAROS	Chemical	75 % in 1991 90 % in 1992 90 % in 1993 30 % (Fertilizer plant)	5500	Olefin Ethyene Propylene	250,000-280,000 t/y. 280,000t/y	Natural Gas Oil Diesel Pyrolysis Gas Waste(Solid, Liquid, Paint)	66,433,035 Nm ³ /y 44,880 t/y 125,999 t/h 196,720 t/y 4,097.9 t/y in 1992	1) Sources emitting air pollutants due to fuel combustion 2) Sources emitting air pollutants from production processes of chemical productions	b) SO ₂ , NO _x , CO b) NO _x , CO c) HCN, dust, etc. c) NH ₃ , NO ₂ etc. c) NO _x	3 7 22 4 1	Division for measurement and environmental management	Some ten million Ft	Improvement of nitric acid manufacturing plant Pre-treatment of sewage and cooling water	It can't be done at self own expense. Expecting foreign funds	Nitric acid plant exhausts NO ₂ into air. Problem of soil pollution
32	23/2	AKZO-PVK FESZEGYARTO ES KERESKEDELMI RT 3581 TISZAUJVAROS	Paint	35 % in 1991 30 % in 1992 25 % in 1993	382	Paint Bonding agent Solvent	15,000 ton/y	Natural Gas	425,708 Nm ³ /y in 1992	1) Sources emitting air pollutants due to fuel combustion 3) Sources of dust only	b) NO _x , CO c) Dust	2 1	There are facility for labour safety. Measuring is taken once a month.	15,000-50,000 Ft/m Cost/burn:4.5mill/Y Cost/sewage treatm.: 4.5 million Ft/y	Entire structural plan for facilities	Lack of funds Funds will be provided from Holland depend upon the project	Goods are worse than that of West side. J/V with Holland Co.
33	24/0	MOL RT. TISZAI FIKOHITO 3580 TISZAUJVAROS MEZOSATI	Oil Refinery	50 % in 1984-85 31-33 % in 1991 30 % in 1992 30 % in 1993	650	Gasoline Diesel oil Fuel oil Sulfure Burned rubbish by incinerator	138,000 t/y 246,000 t/y 285,000 t/y 3,400 t/h 3,163 t/y	Natural Gas Home generated Gas Sewage, oily sediment, solid waste Natural gas	26,910,028 Nm ³ /y 3,162 t/y 837,000 Nm ³ /y in 1992	1) Sources emitting air pollutants due to fuel combustion 2) Sources emitting air pollutants from production processes of chemical and petroleum products	b) SO ₂ , NO _x , CO, Dust b) NO _x , CO, SO ₂ b) HCN, dust, etc.	2 3	- -	- -	- -	- -	
34	25/1	TISZAI ERŐMŰ RT. I. HÖRÖMŰ 3581 TISZAUJVAROS	Thermal Power	48 %	799	Electric power Steam	932.46 GWh 2,422,451 GJ	Brown Coal Natural Gas Fuel Oil	1,328,871 t/y 39,307,400 Nm ³ /y 476 t/y in 1992	1) Sources emitting air pollutants due to fuel combustion	b) SO ₂ , NO _x , CO, Dust	4 (1 paused among in 1992)	E.P. (99.72%)	106,263,600 Ft/y	Introducing flue gas automatic monitoring system	loan	-
35	25/2	TISZAI ERŐMŰ RT. II HÖRÖMŰ 3581 TISZAUJVAROS	Thermal Power	58 %	552	Electric power	2,615.66 GWh	Natural Gas Inert Gas Fuel Oil	282,938,000 Nm ³ /y 491,524,000 Nm ³ /y 181,230 t/y in 1992	1) Sources emitting air pollutants due to fuel combustion	b) SO ₂ , NO _x , CO	1 (Concentrated from 4 stacks)	-	-	Continuous emission monitoring system with calculation and data acquisition.	loan	-

Note: * indicates small scale stationary source

Table D4.1.2(4) Summary Result of Questionnaire and Visiting Surveys

No.	R/N	Plant name and Location	Type of Industry	Operation Rate	Employee	Main Product	Output	Kind of Fuel	Fuels Used	Pollution Source Category	Kind of Pollutants Emitted	Number of Stacks	Equipment of Measures	Cost for Measures	Future Plan	Financial Demand	Remarks
36	26/0	MISKOLCI HOSZOLGALTO V. BULGARFOLDI KAZANHAZA 3534 MISKOLC STADION UT	Heating Center	60 % in 1992	8	Hot water	87,842 GJ	Natural Gas	2,591,356 Nm3/y	1) Sources emitting air pollutants due to fuel combustion	b) NOX, CO (natural gas used as main fuel)	1	-	-	-	-	Hot water in summer
37	26/1	MISKOLCI HOSZOLGALTO V. 10.SZ. ISKOLA KAZANHAZA 3526 MISKOLC KATONICE U.17.	Heating Center	60 % in 1992	3	steam	3,975 GJ	Natural Gas	117,311 Nm3/y	1) Sources emitting air pollutants due to fuel combustion	b) NOX, CO	1	-	-	-	-	Not work in summer
38	26/2	MISKOLCI HOSZOLGALTO V. SZENTPETERI KAPUI KAZANHAZA 3526 MISKOLC SZENTPETERI KAPU	Heating Center	60 % in 1992	6	steam	12,274 GJ	Natural Gas	362,103 Nm3/y	1) Sources emitting air pollutants due to fuel combustion	b) NOX, CO	1	-	-	-	-	Hot water in summer
39	26/3	MISKOLCI HOSZOLGALTO V. KOROSI CS. UTI KAZANHAZA 3527 MISKOLC KOROSI CS.5	Heating Center	60 % in 1992	6	steam	13,029 GJ	Black and Brown Coal	802.5 t/y	1) Sources emitting air pollutants due to fuel combustion	a) SO2, NOX, CO, dust	2	-	-	Fuel change is to be planned from coal to natural gas in the year of 1994 to 1995.	-	Not work in summer
40	26/4	MISKOLCI HOSZOLGALTO V. FUTU UTI KAZANHAZA 3508 MISKOLC FUTU UT	Heating Center	60 % in 1992	7	steam	23,160 GJ	Natural Gas	643,252 Nm3/y	1) Sources emitting air pollutants due to fuel combustion	b) NOX, CO	1	-	-	-	-	Hot water in summer
41	26/5	MISKOLCI HOSZOLGALTO V. CSABARI KAPUI KAZANHAZA 3529 MISKOLC VOROSHADSEREG UT 17	Heating Center	60 % in 1992	7	steam	3,645 GJ	Natural Gas	107,508 Nm3/y	1) Sources emitting air pollutants due to fuel combustion	b) NOX, CO	1	-	-	-	-	Not work in summer
42	26/6	MISKOLCI HOSZOLGALTO V. DIOSGYORI KAZANHAZA 3534 MISKOLC BANKI DONAT 17. SZ.	Heating Center	60 % in 1992	12	Hot water	267,968 GJ	Natural Gas	7,905,053 Nm3/y	1) Sources emitting air pollutants due to fuel combustion	b) NOX, CO	1	-	-	-	-	Hot water in summer
43	26/7	MISKOLCI HOSZOLGALTO V. SZINYEI M. UTI KAZANHAZA 3534 MISKOLC SZINYEI M.P. UT.13	Heating Center	60 % in 1992	5	Hot water	8,681 GJ	Natural Gas	256,095 Nm3/y	1) Sources emitting air pollutants due to fuel combustion	b) NOX, CO	1	-	-	-	-	Not work in summer
44	26/8	MISKOLCI HOSZOLGALTO V. 22.SZ. ISKOLA KAZANHAZA 3526 MISKOLC KASSAI 15	Heating Center	60 % in 1992	4	steam	5,522 GJ	Natural Gas	162,929 Nm3/y	1) Sources emitting air pollutants due to fuel combustion	b) NOX, CO	1	-	-	-	-	Not work in summer
45	26/9	MISKOLCI HOSZOLGALTO V. KANDO K. UTI KAZANHAZA 3534 MISKOLC GAGARIN UT 52	Heating Center	60 % in 1992	3	Hot water	53,736 GJ	Natural Gas	1,585,451 Nm3/y	1) Sources emitting air pollutants due to fuel combustion	b) NOX, CO	1	-	-	-	-	Not work in summer
46	27/0	MISKOLCI FUTOMU AFT 3511 MISKOLC TATAR U	Heating Center	20 % in 1991 20 % in 1992	118	Hot water Steam	45,114 t/y	Natural Gas Fuel oil	58,759,600 Nm3/y 3,720.8 t/y	1) Sources emitting air pollutants due to fuel combustion	a) SO2, NOX, CO, dust b) NOx, CO	2 2	-	-	-	-	Hot water in summer
47	28/0	MISKOLCI EGYETEM EROMU 3515 MISKOLC EGYETEMVAROS	Heating Center Thermal Generation	20 % in 1992 20 % in 1993	12	Steam	24,000 t/y	Fuel Oil (F-60/130) Coal Natural Gas	1,228 t/y 1,582 t/y 113,081 Nm3/y	1) Sources emitting air pollutants due to fuel combustion	a) SO2, NOX, CO, dust	1	-	-	-	-	Not work in summer

Note: * indicates small scale center

Table D4.1.2(5) Summary Result of Questionnaire and Visiting Surveys

No.	K/A	Plant name and Location	Type of Industry	Operation Rate	Employee	Main Product	Output	Kind of fuel	Fuels Used	Pollution Source Category	Kind of Pollutants Emitted	Number of Stacks	Equipment of Measures	Cost for Measures	Future Plan	Financial Demand	Remarks
48	29/1	SAJOSZENTPETERI HOSZOLGALTATO VALLALAT PETOFI UTI KAZAN 3770 SAJOSZENTPETER PETOFI UT	Heating Center	80-90 % in 1992	7 Serve in other centers	Hot water Heating	5,025 GJ	Natural Gas	191,103 Nm ³ /8784h 170,785 Nm ³ /8540h in 1992 Upper:questionnaire Lower:report to EXF	1) Sources emitting air pollutants due to fuel combustion	b) NOx, CO	1 (1)	-	-	-	-	Hot water in summer
49	29/2	SAJOSZENTPETERI HOSZOLGALTATO VALLALAT KOSSUTH UTI KAZAN 3770 SAJOSZENTPETER KOSSUTH UT 179	Heating Center	80-90 % in 1992	7 Serve in other centers	Hot water Heating	7,681 GJ	Natural Gas	281,091 Nm ³ /8784h 261,172 Nm ³ /8540h in 1992 Ditto	1) Sources emitting air pollutants due to fuel combustion	b) NOx, CO	1 (3)	-	-	-	-	Hot water in summer
50	29/3	SAJOSZENTPETERI HOSZOLGALTATO VALLALAT 24. SZ KAZAN 3770 SAJOSZENTPETER MORA UT 24	Heating Center	80-90 % in 1992		Hot water Heating	3,310 GJ	Natural Gas	124,731 Nm ³ /8784h 112,540 Nm ³ /8540h in 1992 Ditto	1) Sources emitting air pollutants due to fuel combustion	b) NOx, CO	1 (1)	-	-	-	-	Hot water in summer
51	29/4	SAJOSZENTPETERI HOSZOLGALTATO V. MORA F. U.30.SZ. KAZANHAZ 3770 SAJOSZENTPETER MORA F.U. 30	Heating Center	80-90 % in 1992		Hot water Heating	6,335 GJ	Natural Gas	248,913 Nm ³ /8784h 215,509 Nm ³ /8540h in 1992 Ditto	1) Sources emitting air pollutants due to fuel combustion	b) NOx, CO	1 (1)	-	-	-	-	Hot water in summer
52	30/0	EMOD NAGYKOZSEG GONDOSKASAGA VOROSMARTY UTI KAZANHAZ 3432 EMOD VOROSMARTY UT 2	Heating Center	50 % in 1992		3	Heating	5,040 GJ	Heating Oil	125.41 t/4728h in 1992	1) Sources emitting air pollutants	a) SO ₂ , NOx, CO, dust	1	-	-	-	-
53	31/0	PÚTŰK VÁROSÍ HOSZOLGALTATO UZEM 3630 PÚTŰK KOSSUTH UT	Heating Center	52 % in 1992 <50 % in 1993	10 + 1 (Temporary employee)	Hot water Heating	26,000 GJ	Wood Chips Fuel Oil Natural Gas is to be used from Oct. 15, 1993.	2,698.3 t/y 156,075 t/y 8520h/1992 (800,000 Nm ³ /y)	1) Sources emitting air pollutants due to fuel combustion	a) SO ₂ , NOx, CO, dust b) NOx, CO	1	cyclone (80%)	-	Fuel change(from oil to natural gas) 2 burners N. gas is to be used from Oct.15, 1993.	Loan	Hot water in summer.
54	32/0	ÓZDI TÁVIRÓ YELBELO ES HOSZOLGALTATO VALLALAT 3600 ÓZD GYARTELEP	Heating Center	40-50 % in 1992	57	Hot water	438,431 GJ	Natural Gas	3,188,000 Nm ³ /y /3672h/1992	1) Sources emitting air pollutants due to fuel combustion	b) NOx, CO	6	-	-	-	-	Newly established in Aug. 1, 1992

Note: * indicates small scale center

(): Suspension

Table D4.1.3 (1) Outline of Stationary Emission Sources Subject to Measurement of Flue Gas

No.	Name of enterprise	Source No.	Name of combustion facility	Kind of fuel	Capacity of furnace	Load at the time of measurement	Burner type & capacity	Number of burners	Products of furnace	Exhaust gas treatment facility	Energy saving facility
03/0	EMO. TEGLA ES CSEREPIPARI VALLALAT PUTNOKI TEGLAGYAR	P002	No.2 Ring kiln for brick transformed Hoffman type	Brown coal & sawdust	2.250 pcs/h	1.600 pcs/h	Self-sustained combustion	-	Brick	-	Use exhaust gas for dryer
		P014	No.1 Tunnel kiln for brick	Brown coal & sawdust	2.250 pcs/h	1.600 pcs/h	Self-sustained combustion	-	Brick	-	Use exhaust gas for dryer
04/1	BORSODCHEM RT.	P062	Incinerator (Waste solvent)	Waste solvent	35 kg/h	35 kg/h	-	-	-	Air dilution	-
05/0	BORSODI ENERGETIKAI KFT. (BORSODI HOEROMU)	P001-1	No. 1 Water tube boiler for generator	Brown coal & natural gas	100 t/h 495 °C	74 t/h 479 °C	Pulverized coal burner with natural gas & oil	4	Steam for generator	Electrostatic precipitator	Super heater, recuperator & economizer
		P001-3	No. 3 Water tube boiler for generator	Brown coal & natural gas	100 t/h 495 °C	73 t/h 490 °C	Pulverized coal burner with natural gas & oil	4	Steam for generator	Electrostatic precipitator	Super heater, recuperator & economizer
		P001-3	No. 3 Water tube boiler for generator	Brown coal & natural gas	100 t/h 495 °C	76 t/h 493 °C	Pulverized coal burner with natural gas & oil	4	Steam for generator	Electrostatic precipitator	Super heater, recuperator & economizer
		P002-1	No. 4 Water tube boiler for generator	Brown coal & natural gas	100 t/h 495 °C	72 t/h 497 °C	Pulverized coal burner with natural gas & oil	4	Steam for generator	Electrostatic precipitator	Regenerator
07/0	PANNONGLAS IPARI RT. SAJOSZENTPETERI UVEGGYAR	P015	No. 1 Glass melting tank oven	Natural gas	100 t/h 1440 °C	70 t/h 1440 °C	Paired natural gas burner 930 m ³ /h	6	Glass bottle	-	Regenerator
		P019	No. 2 Glass melting tank oven	Natural gas	100 t/h 1440 °C	70 t/h 1440 °C	Paired natural gas burner 930 m ³ /h	6	Glass bottle	-	Regenerator
08/0	BORSODI ERCÉLOKESZITO MUZSGORITO KFT.	P001-1	No. 1 Sintering furnace (D.L type)	Coal & coke	88 t/h	88 t/h	Natural gas burner for ignition	1	Sintering ore for blast furnace	Multicyclone	-
09/2	SAGROCHEM KFT.	P001	HLG Smoke tube boiler	Heavy oil	20 t/h 12 bar	16 t/h 9.4 bar	Rotary type oil burner 800 kg/h	2	Steam for process	-	Super heater
		P001	HLG Smoke tube boiler	Heavy oil	20 t/h 12 bar	13 t/h 9.2 bar	Rotary type oil burner 800 kg/h	2	Steam for process	-	Super heater
		P055	Incinerator (Waste solvent & solid)	Waste solvent, paper & urethane	Solvent: 100 kg/h → Solid: 60 kg/h	-	-	-	-	Flushing with water & air dilution	-
10/0	DECEMBER 4. DROTMUVEK	P033-2	No. 2 Smoke tube boiler	Natural gas	4 t/h 12 bar	3.4 t/h 8.8 bar	Block type natural gas burner 430 m ³ /h	1	Steam for process	-	-
13/0	DIOSGYORI PAPIRGYAR LEANYVALLALAT	P002	No. 1 Smoke tube boiler	Natural gas	5 t/h 12 bar	2.9 t/h 9.6 bar	Block type natural gas burner 430 m ³ /h	1	Steam for process	-	-
15/1	HAMOR RT.	P006-2	No. 5 Forge furnace (Car type)	Natural gas	*24 GJ/h	-	Natural gas burner 15 m ³ /h	5	Billet	-	-
		P009	No. 3 Forge furnace (Box type)	Natural gas	*26 GJ/h	-	Natural gas burner 250 m ³ /h	6	Billet	-	Regenerator chamber
15/2	DIOSGYORI ACEL ES VASONTO KFT.	P014-1	1-A Heating furnace (Car type)	Natural gas	11.3 GJ/h	-	Natural gas burner 15 m ³ /h	27	Billet	-	-
15/4	DNM DIOSGYORI NEMESACEL MUVEK FA.	P002-2-3	Forge furnace for slab (Box type)	Natural gas	1.0 GJ/h x 4 boxes	-	Natural gas burner 25 m ³ /h	2	Billet	-	-
		P046	No.2 Soaking pit	Natural gas	9.4 GJ/h x 6 cells	85 %	Natural gas burner 250 m ³ /h	1	Slab	-	Recuperator
		P095-1	HOK Smoke tube boiler	Natural gas	12 t/h 12 bar	5.1 t/h 8.6 bar	Block type natural gas burner 600 m ³ /h	1	Steam for process	-	Simplified air heater
		P097-2	No.5 Water tube type blast furnace gas boiler	Natural gas & Blast f. gas	24 t/h 420 °C	15 t/h 32 bar	Natural & blast furnace gas burner	4	Steam for process	-	Super heater & economizer
17/1	HEJOCASABAI CEMENT- ES MESZIPARI RT.	P010	Rotary kiln for cement with suspension preheater	Natural gas Waste oil	83 t/h	73.7 t/h	Natural gas burner 10,000 m ³ /h	1	Cement	Electrostatic precipitator	Use exhaust gas for dryer
		P031	Shaft kiln for limestone	Natural gas	19 t/h	13.9 t/h	Natural gas burner 170 m ³ /h	36	Quicklime	Electrostatic precipitator	Use exhaust gas for dryer
18/0	STRABAG HUNGARIA EPITO KFT	P001	Dryer for aggregate	Natural gas	60 t/h	60 t/h	Natural gas burner 450 m ³ /h	1	Asphalt mix for pavement	Bag filter	-
21/0	EMO. TEGLA ES CSEREPIPARI VALLALAT MALYI TEGLAGYARA	P001	No. 1 & No.2 Ring kiln for brick transformed Hoffman type	Natural gas & sawdust	1,970 pcs/h	1,970 pcs/h	Natural gas burner *6 m ³ /h	24	Brick	-	Use exhaust gas for dryer
22/0	MISKOLCI UTEPITO KFT NYEK ASZFALTKEVERO	P001	Dryer for aggregate	Natural gas	70 t/h	70 t/h	Natural gas burner 500 m ³ /h	1	Asphalt mix for pavement	Bag filter	-

Note, *: estimated

Table D4.1.3 (2) Outline of Stationary Emission Sources Subject to Measurement of Flue Gas

No.	Name of enterprise	Source No.	Name of combustion facility	Kind of fuel	Capacity of furnace	Load at the time of measurement	Burner type & capacity	Number of burners	Products of furnace	Exhaust gas treatment facility	Energy saving facility	
23/1	TISZAI VEGYI KOMBINAT RT.	P003-1	Ammonia oxidation furnace		18 t/h	6 t/h			Nitric acid	Denitration by ammonia	Heat recovery	
		-3	Nitric acid manufacturing plant									
		P021-1	Incinerator I-610 (Solid)	Waste polyethylene polypropylene	500 kg/h	-	-	-	-	Steam for process	Multicyclone	Waste heat boiler
		P021-2	Incinerator I-620 (Solvent)	Waste solvent (TK466)	100 kg/h	-	-	-	-	-	Multicyclone Air dilution	-
		P021-3	Incinerator I-600 (Solvent)	Waste solvent (TK55)	100 kg/h	-	-	-	-	-	Multicyclone Air dilution	-
P025-2	No. 2 Water tube boiler	Natural gas & heavy oil	25 t/h 40 bar	21 t/h 38 bar	Natural gas & oil burner 1,000 m ³ /h	2		Steam for process	-	Super heater, air heater & economizer		
24/0	MOL RT.	P004	F102 Heat medium boiler	Natural gas	3.65 Gcal	2.77 Gcal	Gas burner 450 m ³ /h	1	Heat medium for petrolic product	-	-	
25/1	TISZAI EROMU RT. I. HOEROM	P001-1	No. 1 Water tube boiler for generator	Brown coal & natural gas	125 t/h 515 °C	97 t/h 502 °C	Pulverized coal burner with natural gas & oil	4	Steam for generator, process & heating	Electrostatic precipitator	Super heater, air heater & economizer	
		P001-2	No. 2 Water tube boiler for generator	Brown coal & natural gas	125 t/h 515 °C	101 t/h 510 °C	Pulverized coal burner with natural gas & oil	4	Steam for generator, process & heating	Electrostatic precipitator	Super heater, air heater & economizer	
		P002-1	No. 3 Water tube boiler for generator	Brown coal & natural gas	125 t/h 515 °C	120 t/h 510 °C	Pulverized coal burner with natural gas & oil	4	Steam for generator, process & heating	Electrostatic precipitator	Super heater, air heater & economizer	
		P002-2	No. 4 Water tube boiler for generator	Brown coal & natural gas	125 t/h 515 °C	118 t/h 504 °C	Pulverized coal burner with natural gas & oil	4	Steam for generator, process & heating	Electrostatic precipitator	Super heater, air heater & economizer	
		P003-1	No. 5 Water tube boiler for generator	Brown coal & natural gas	125 t/h 515 °C	90 t/h 508 °C	Pulverized coal burner with natural gas & oil	4	Steam for generator, process & heating	Electrostatic precipitator	Super heater, air heater & economizer	
25/2	TISZAI II HOEROMU	P001	No. 1 Water tube boiler for generator	Inert gas & heavy oil	670 t/y 545 °C	593 t/h 545 °C	Gas-oil combination Oil: 7.5 t/h	8	Steam for generator	-	Super heater, air heater & economizer	
		P003	No. 3 Water tube boiler for generator	Inert gas & heavy oil	670 t/y 545 °C	545 t/h 545 °C	Natural gas: 8,000 m ³ /h Inert gas: 11,000 m ³ /h	4	Steam for generator	-	Super heater, air heater & economizer	
-	OZD GOMORHUS KAZAUK	P001	No. 2 Marine boiler	Brown coal & firewood	2 t/h	30 %	Firing by hands	-	Steam for heating & process	-	-	
-	BEFAG LADI FATELEP	P001	No. 1 Locomotive boiler	Waste of sawing	3 t/h	43 %	Firing by hands	-	Steam for heating & process	-	-	
-	BORSODI SORGYAR RT. BOCS	P001	No. 5 Smoke tube boiler	Natural gas	20 t/h	14 t/h	Block type natural gas burner 1000 m ³ /h	2	Steam for heating & process	-	Simplified superheater	
02/1	OZDI KOHASRATI UZEMEK	P036	No. 10 Water tube boiler for heating	Natural gas & coal	20 t/h	16 t/h	Pulverized coal burner Coal-gas combination	4 4	Steam for heating	Cyclone	Super heater, recuperator	
12/0	EAEV. MUNKASSZALLO	P001	Cast iron boiler for heating	Coal, brown coal	1.5 t/d		Firing by hands	-	Steam for heating	note: close the facility 1994 Apr. 15		
14/1	DIGEP II TELEP	P002	No. 14, 15 Water tube boiler for heating	Natural gas	28 t/h	22 t/h	Block type natural gas burner 235 m ³ /h		Steam for heating	-	Super heater, recuperator & economizer	
17/2	HEJOGSABAI CEMENT- ES MESZIPARI RT. KOBANYA UZEM	P030	No. 1 Cast iron boiler for heating (Wet bottom type)	Disel oil	360Mcal/h	210Mcal/h	Mechanical atomizing oil burner 50 kg/h	1	Steam for heating (0.5 kg/cm ²)	-	-	
26/0	MISKOLCI HOSZOLGALTATO V. KILIAUI KAZANHAZA	P001	No. 2 Smoke tube boiler for heating (build boiler into container type)	Natural gas	180 t/h	180 t/h	Block type natural gas burner 400 m ³ /h	1	Hot water for heating	-	-	
26/3	MISKOLCI HOSZOLGALTATO V. KOROSI CS. UTI KAZANHAZA	P001	No. 1 - 3 Cast iron boiler for heating (Wet bottom type)	Coal, brown coal	5 t/d	* 5 t/d	Semiautmatic stoker (overfeed combustion)	-	Hot water for heating	-	-	
26/4	MISKOLCI HOSZOLGALTATO V. FUTOUTI KAZANHAZ	P001	No. 1 Water & smoke rube combination boiler for heating	Natural gas	1.63 t/h	50 %	Block type natural gas burner 235 m ³ /h	1	Steam for heating	-	Simplified economizer	
26/6	MISKOLCI HOSZOLGALTATO V. DIOSGYORI KAZANHAZA	P001	No. 1 Smoke tube boiler for heating	Natural gas	6 Gcal/h	*70 %	Block type natural gas burner 720 m ³ /h	1	Hot water for heating	-	Simplified air heater	
27/0	MISKOLCI FUTOMU KFT	P002	FK 4 Water tube boiler for heating	Heavy oil, natural gas	100Gcal/h	G:1000m ³ /h O:3000m ³ /h	Gas-oil combination burner	16	Hot water for heating	-	-	
		P002	FK 3 Water tube boiler for heating	Natural gas	100Gcal/h	G:5700m ³ /h O: 0m ³ /h	Natural gas: 800m ³ /h Heavy oil : 800kg/h	16	Hot water for heating	-	-	
31/0	MISKOLCI EGYETEM FUTOMU	P001	No. 1 Smoke tube boiler	Heavy oil	7 t/h	4.2 t/h	Mechanical atomizing oil burner 600 kg/h	1	Steam for heating	-	-	

Note, *: estimated