## 5.4   Ambient Air Quality After Implementation of Source Control Measures

5.4.1   Pollutant Concentration With the Short-term Control Measures

Figures 5.4.1 through 5.4.10 show the ambient concentration of SO_2, CO, NOx and NO_2 with contribution of each type of source corresponding to the implementation of the short-term air pollution control measures.

5.4.2   Pollutant Concentration With the Long-term Control Measures

Figures 5.4.11 through 5.4.20 show the ambient concentration of SO_2, CO, NOx and NO_2 with contribution of each type of source corresponding to the implementation of the long-term air pollution control measures.
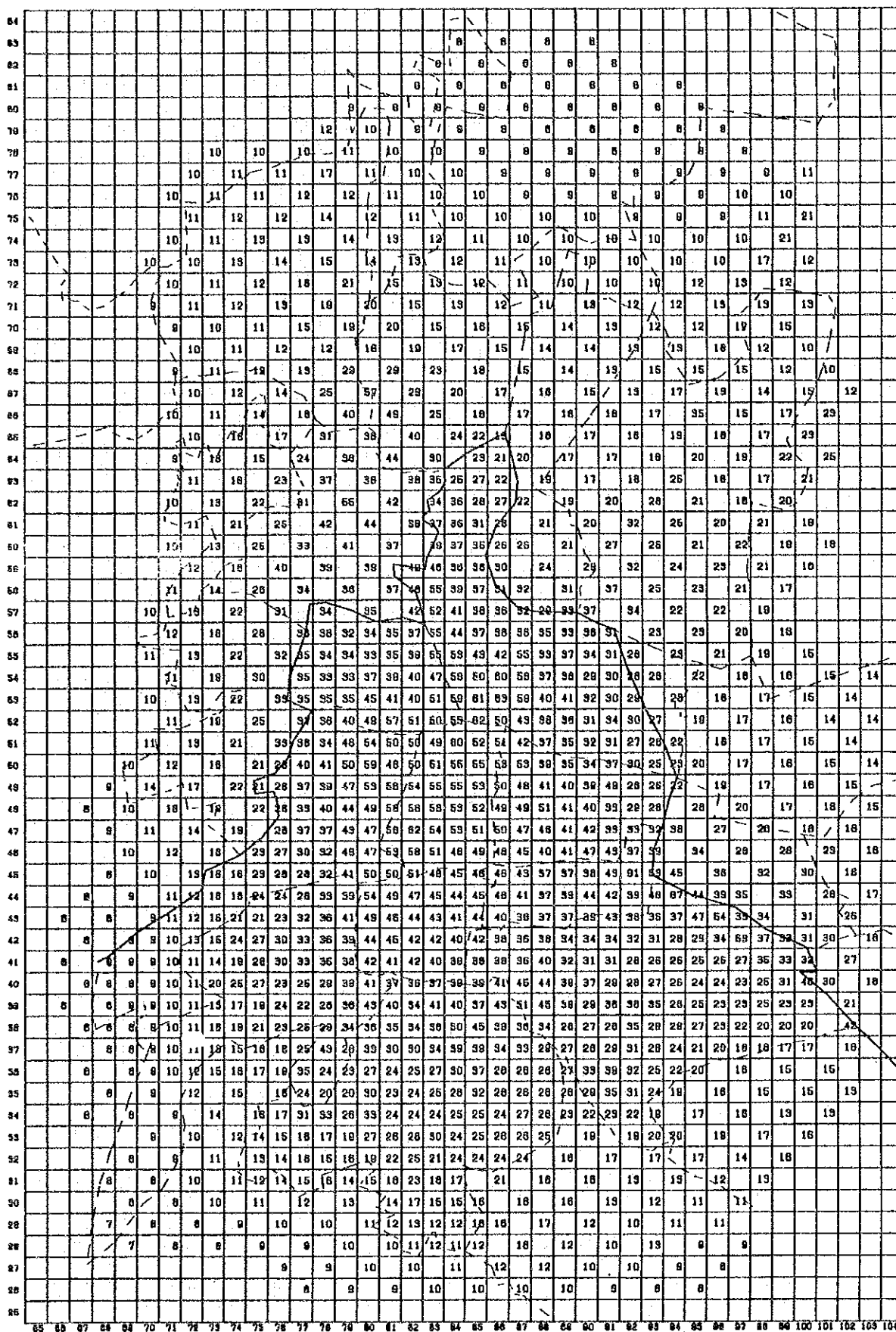
(Background concentration of 5.87 ppb included)   Unit: ppb

Figure 5.4.1   Ambient Concentration of SO_2 (All Sources)
(1993, With short-term control measures)

AP—378
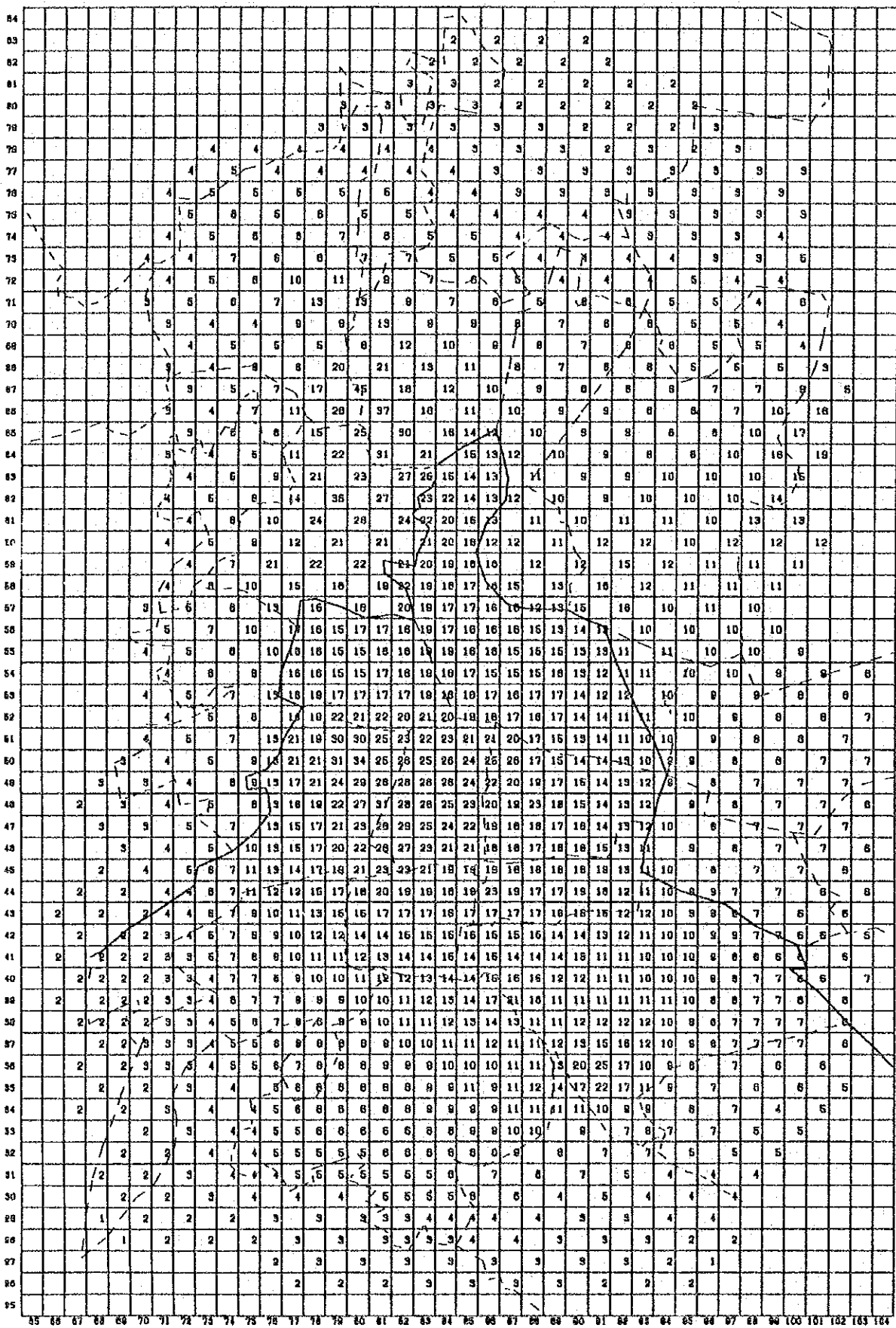
Figure 5.4.2 Contribution of Mobile Sources to SO₂ Concentration
(1993, with short-term control measures)

Unit: ppb

AP–379

Unit: ppb

Figure 5.4.3 Contribution of Mobile Sources to SO$_2$ Concentration
(1993, with short-term control measures)

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(Background concentration of 1.182 ppm included)   Unit: 0.1 ppm

Figure 5.4.4   Contribution of Automobiles to CO Concentration
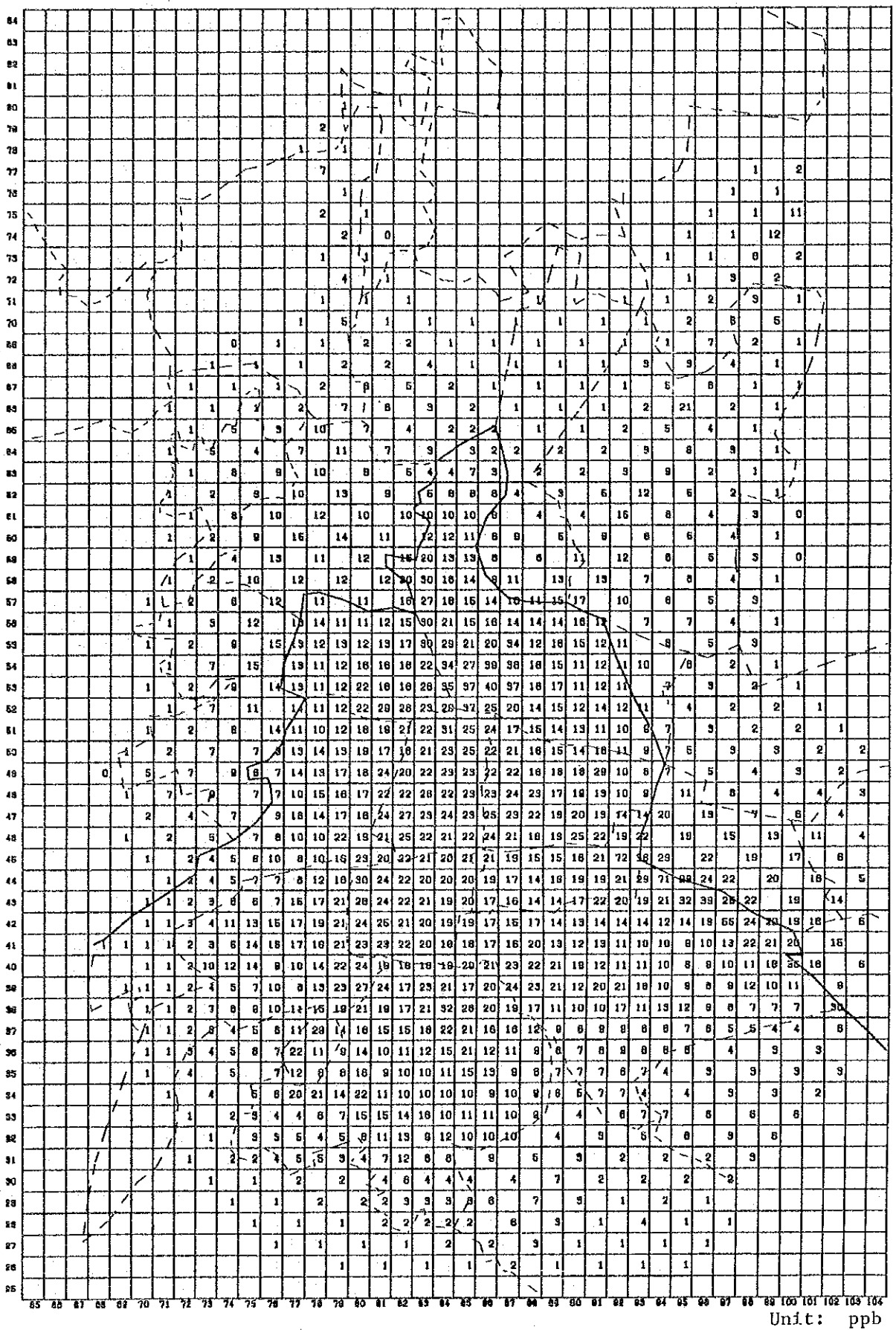(1993, With short-term control measures)

AP-381

(Background concentration of 24.43 ppb included)   Unit: ppb

Figure 5.4.5   Ambient Concentration of NOx (All Sources)
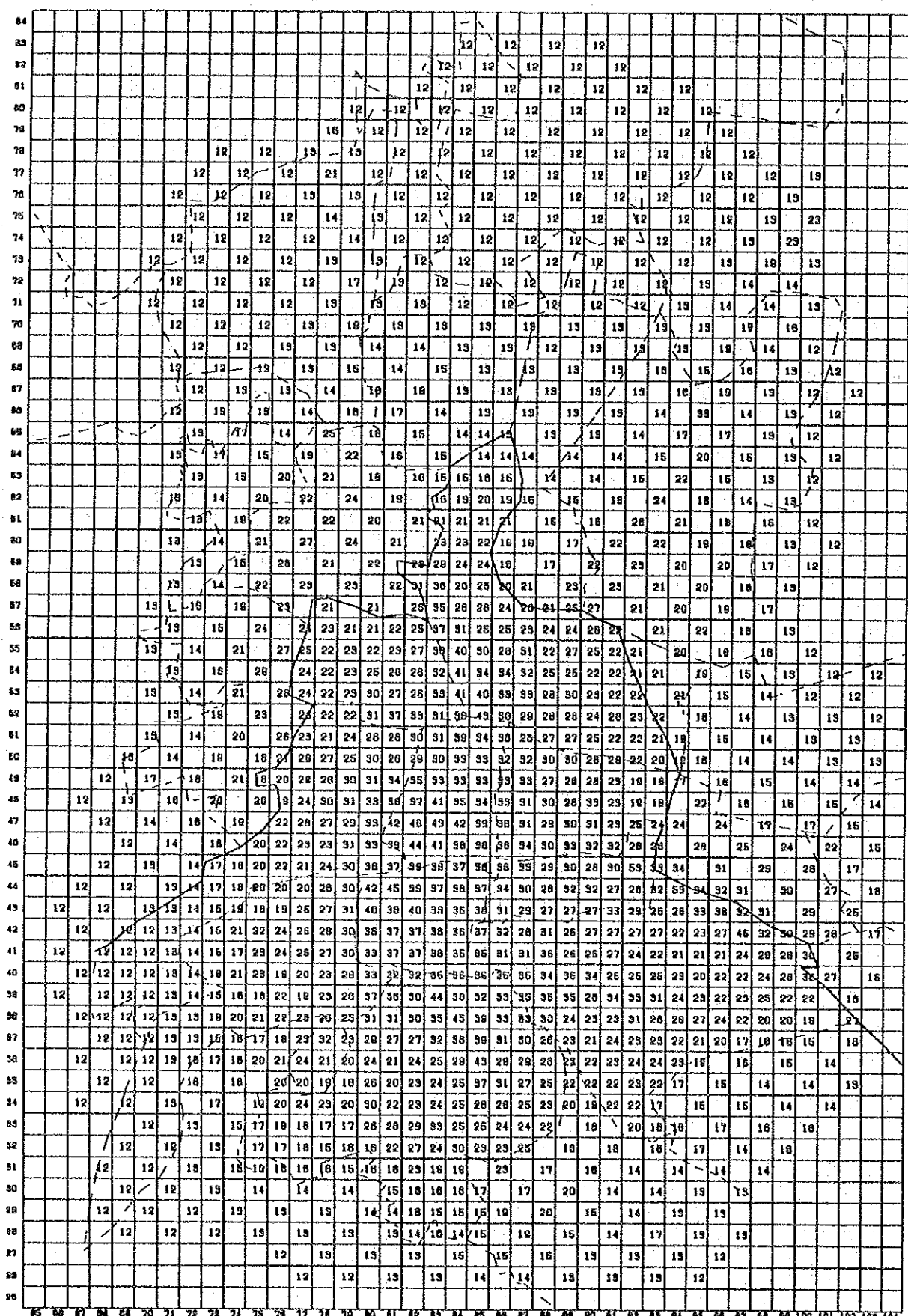(1993, With short-term control measure)

Unit: ppb

Figure 5.4.6   Contribution of Stationary Sources to NOx Concentration
(1993, With short-term control measure)

Unit: ppb

Figure 5.4.7   Contribution of Mobile Sources to NOx Concentration
(1993, With short-term control measure)

(Background concentration of 6.06 ppb included)   Unit: ppb

Figure 5.4.8   Ambient Concentration of NO₂ (All Sources)
(1993, With short-term control measure)

Unit: ppb

Figure 5.4.9   Contribution of Stationary Sources to NO_2 Concentration
(1993, With short-term control measure)

Unit: ppb

Figure 5.4.10   Contribution of Mobile Sources to NO_2 Concentration
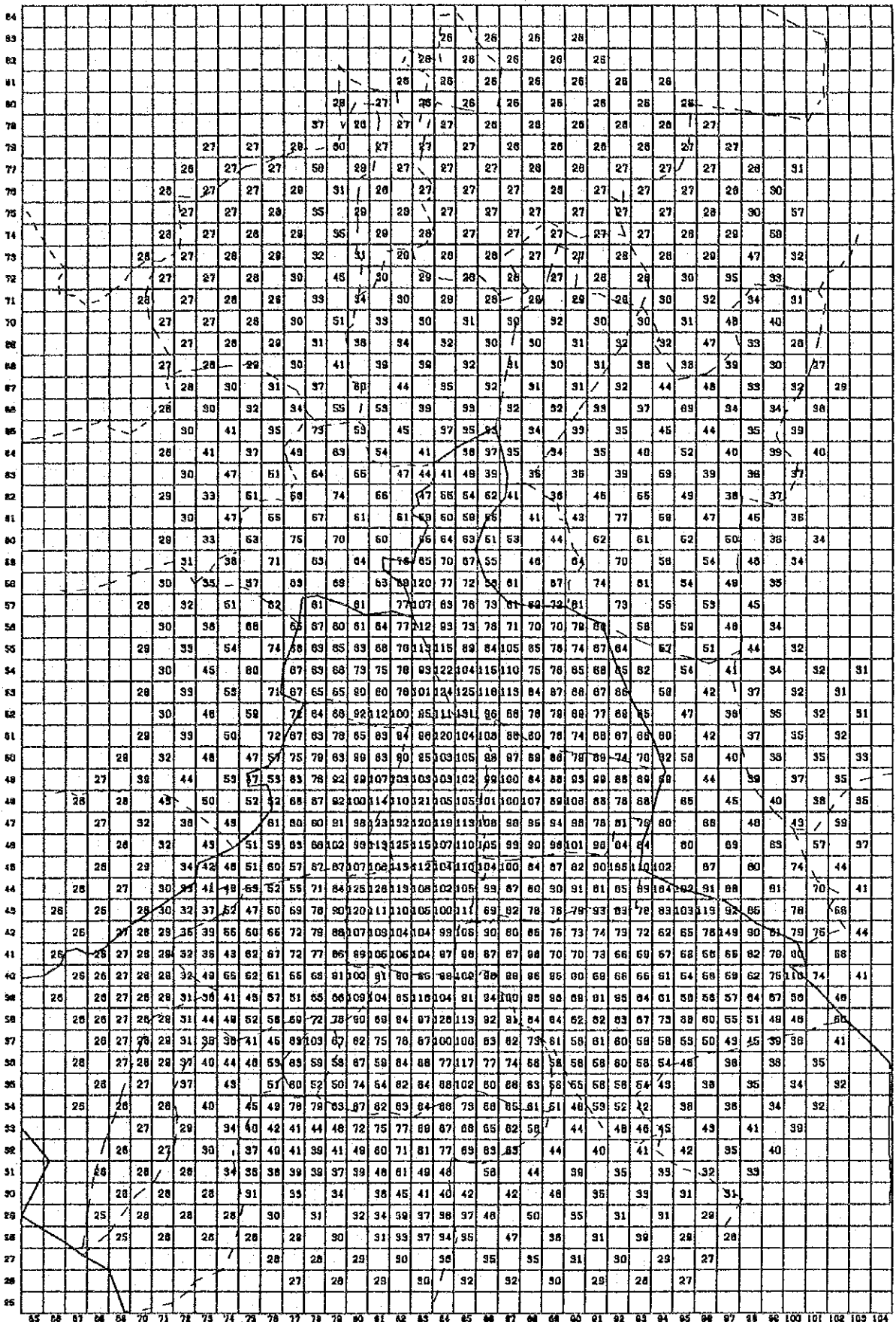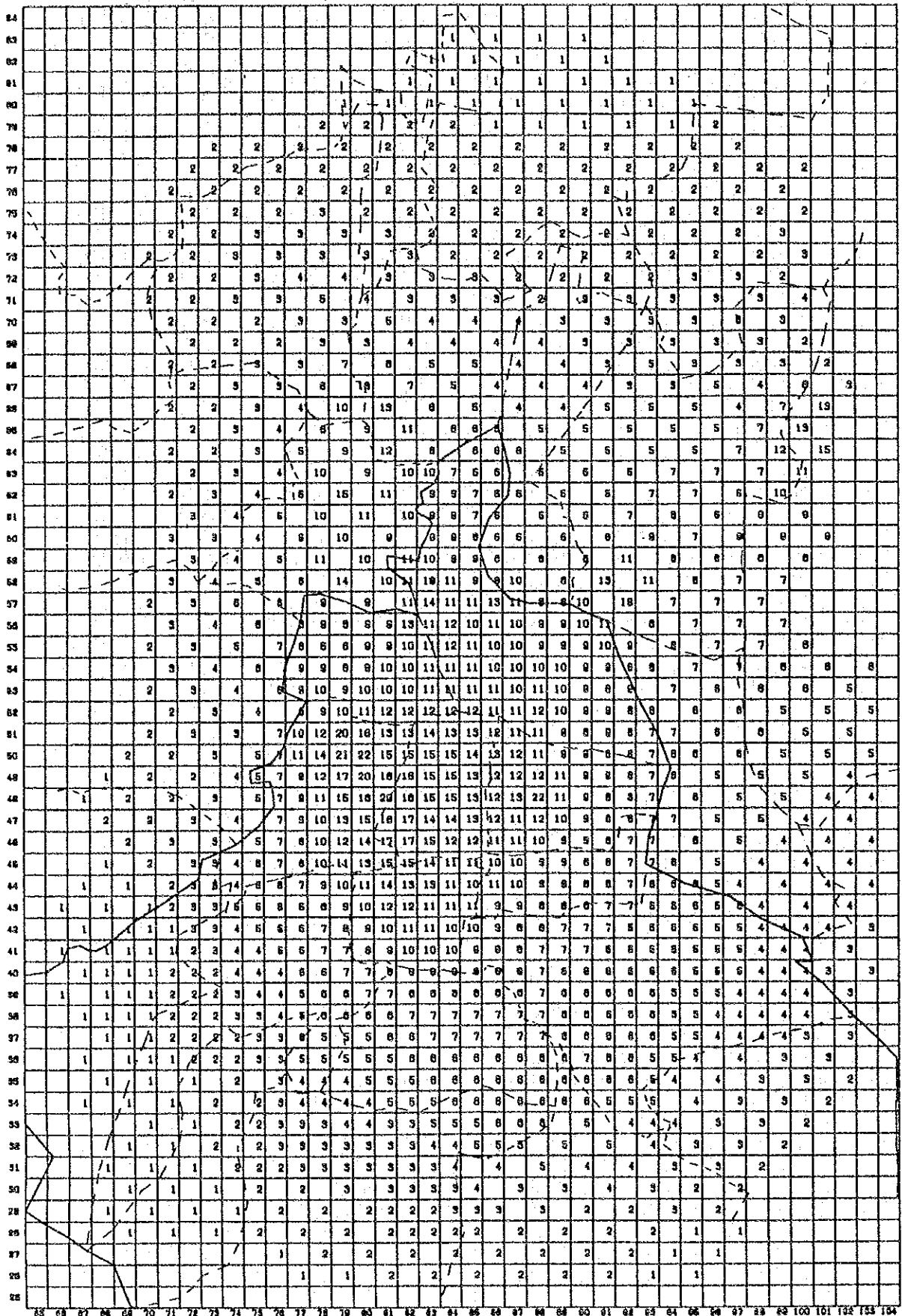(1993, With short-term control measure)

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(Background concentration of 5.87 ppb included)   Unit: ppb

Figure 5.4.11   Ambient Concentration of SO$_2$ (All Sources)
(2001, with long-term control measures)

Figure 5.4.12   Contribution of Stationary Sources to SO$_2$ Concentration
(2001, With long-term control measures)

Unit: ppb

AP–389
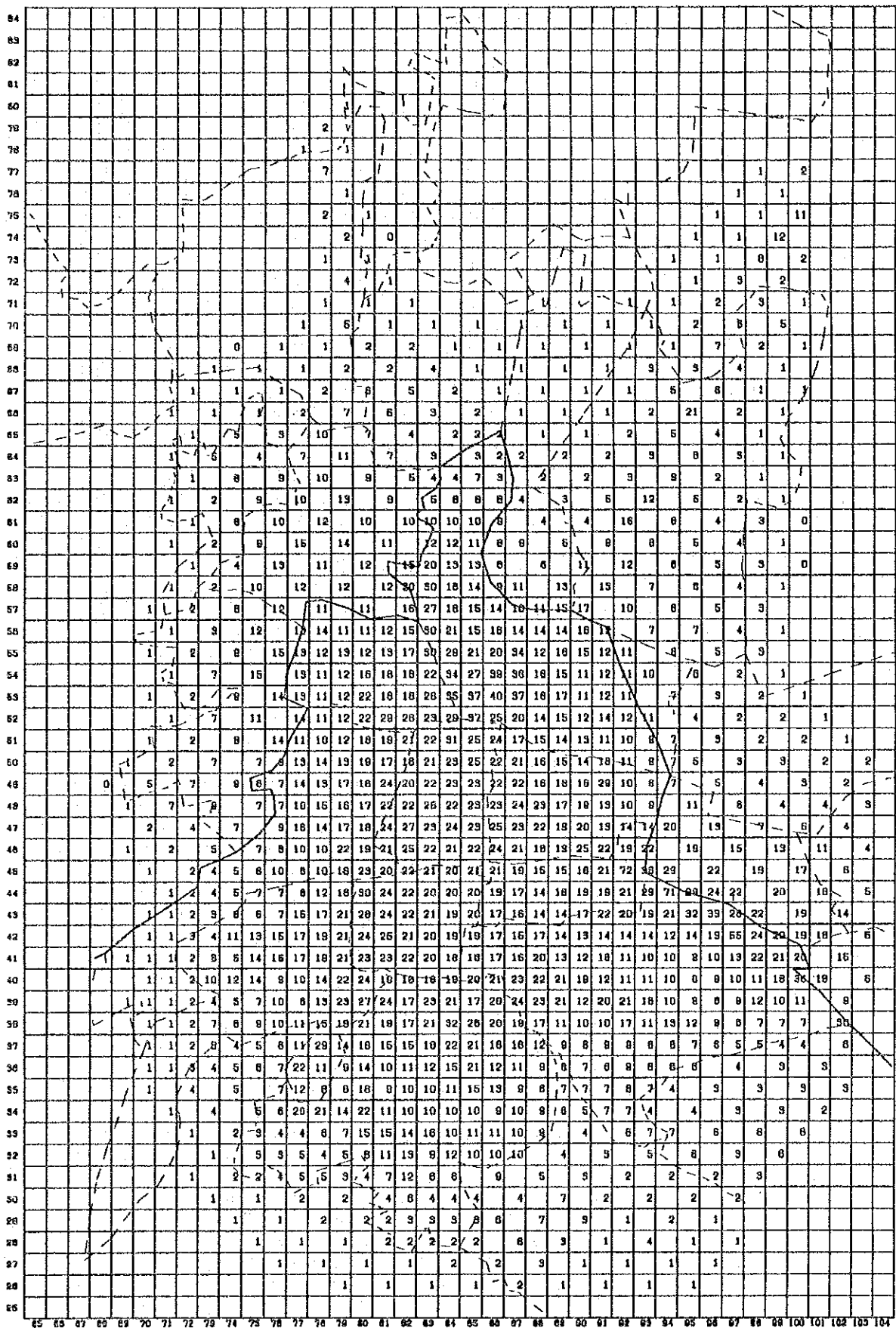
Unit: ppb

Figure 5.4.13   Contribution of Mobile Sources to SO₂ Concentration
(2001, with long-term control measures)

AP—390
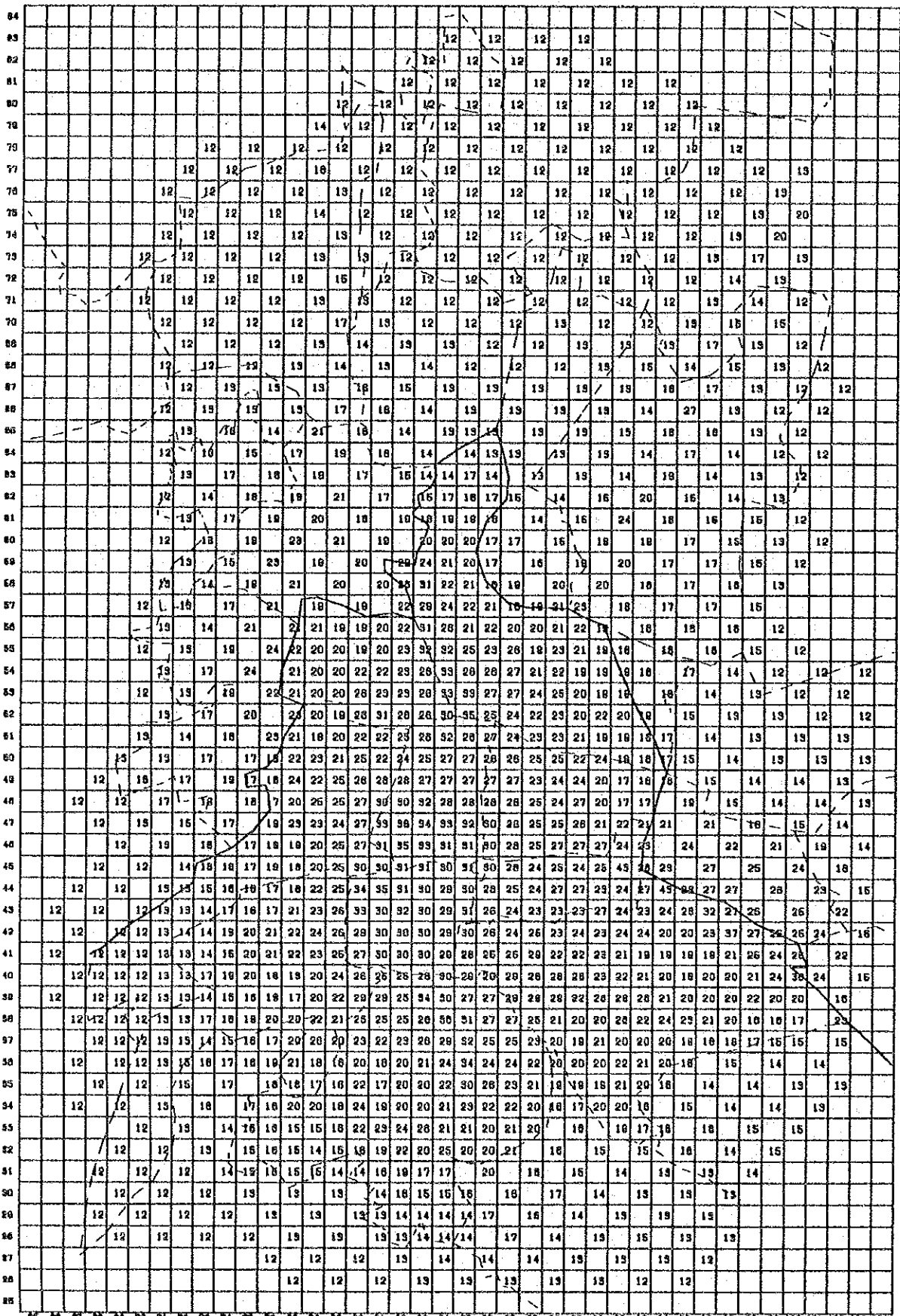
(Background concentration of 1.182 ppm included) Unit: 0.1 ppm

Figure 5.4.14   Contribution of Automobiles to CO Concentration
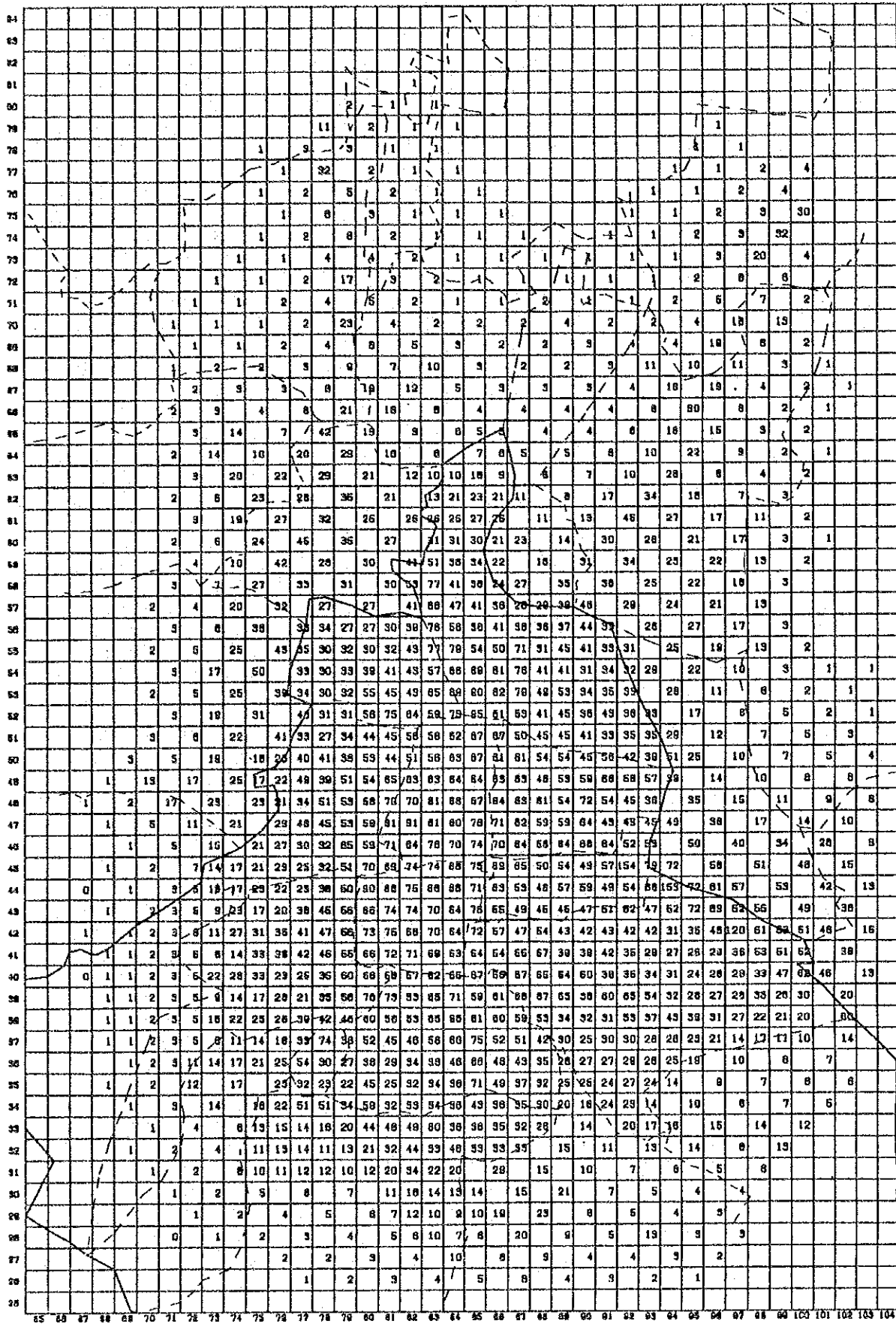(2001, With long-term control measures)

AP–391
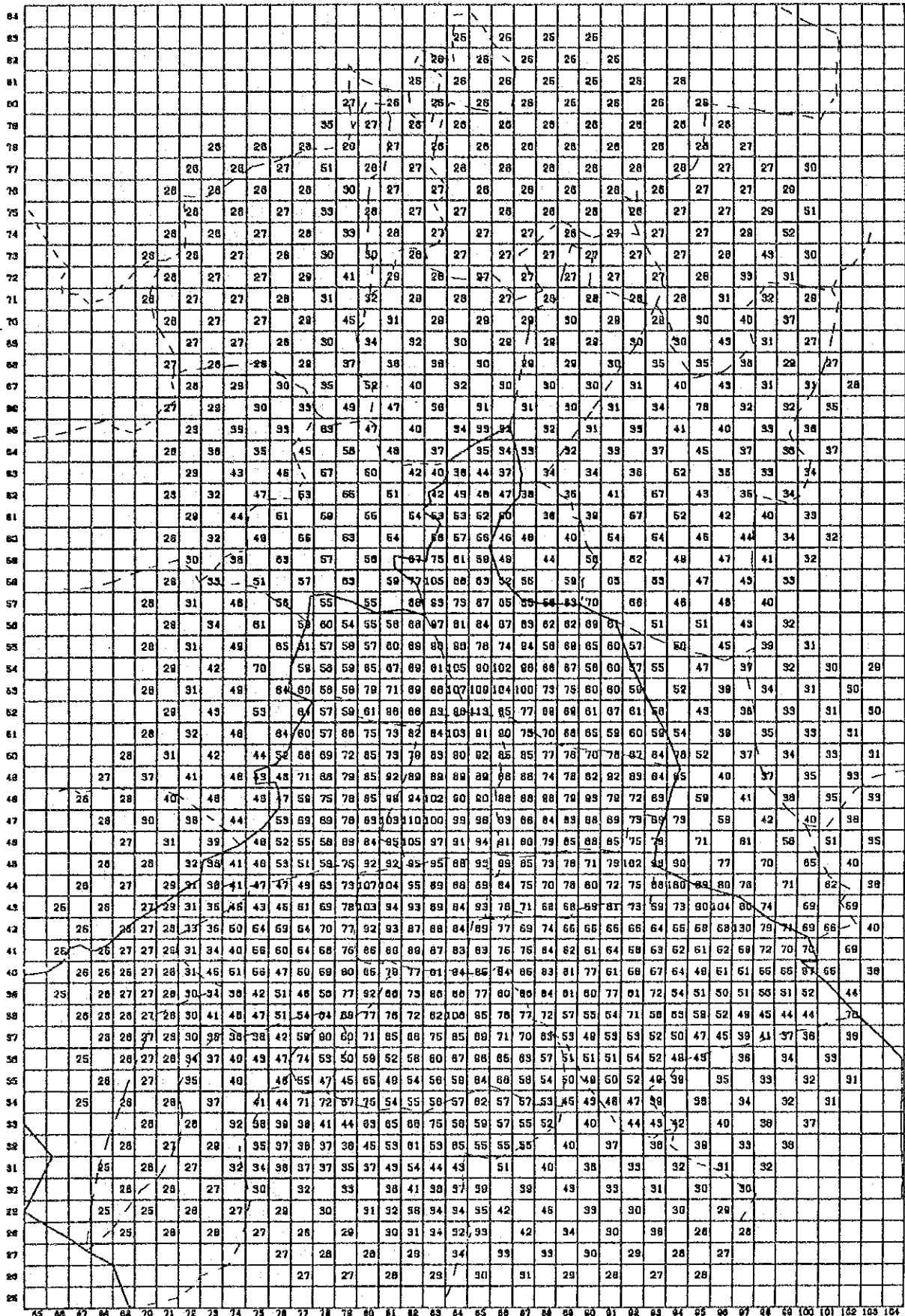
(Background concentration of 24.43 ppb included)   Unit: ppb

Figure 5.4.15   Ambient Concentration of NOx (All Sources)
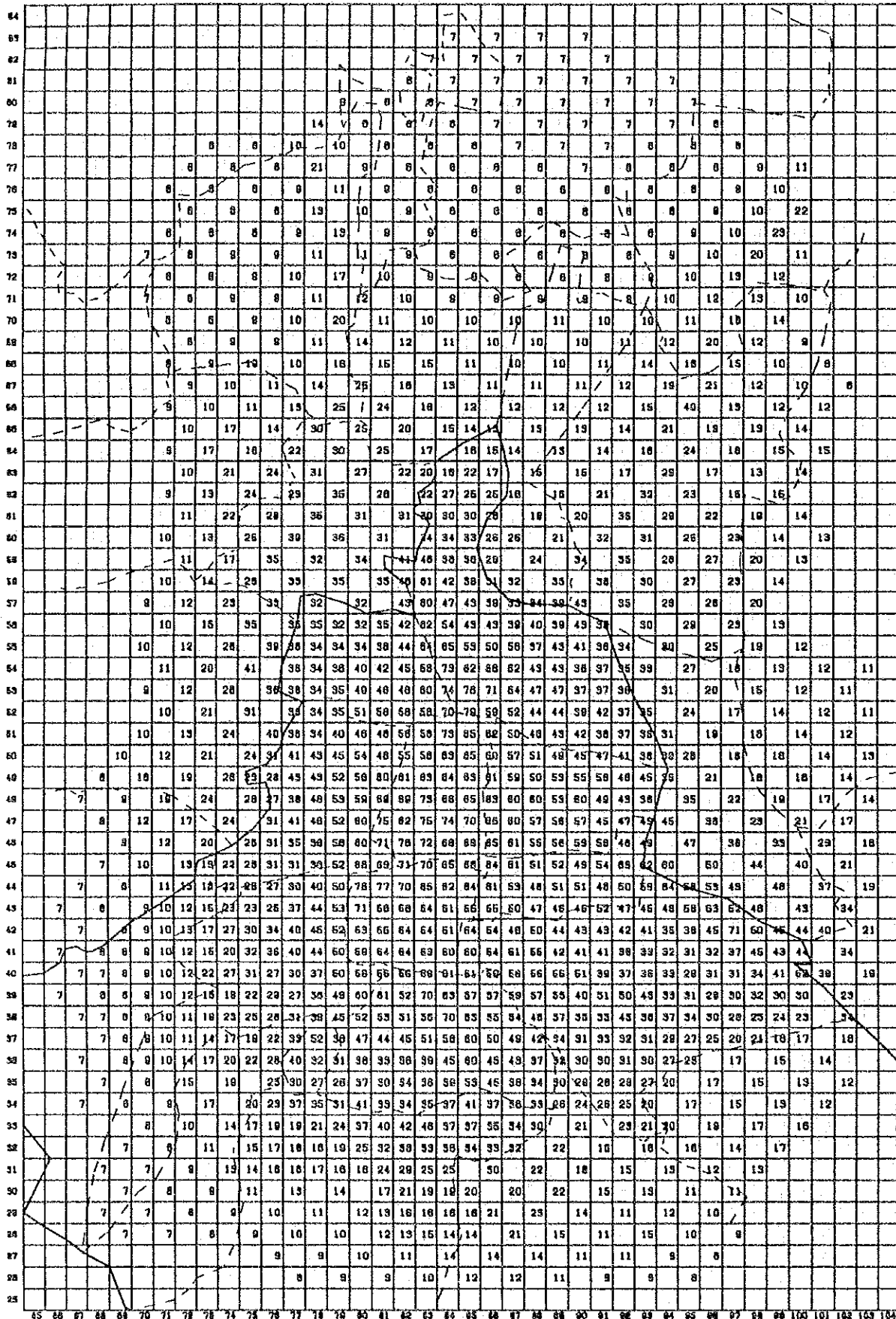(2001, With long-term control measures)
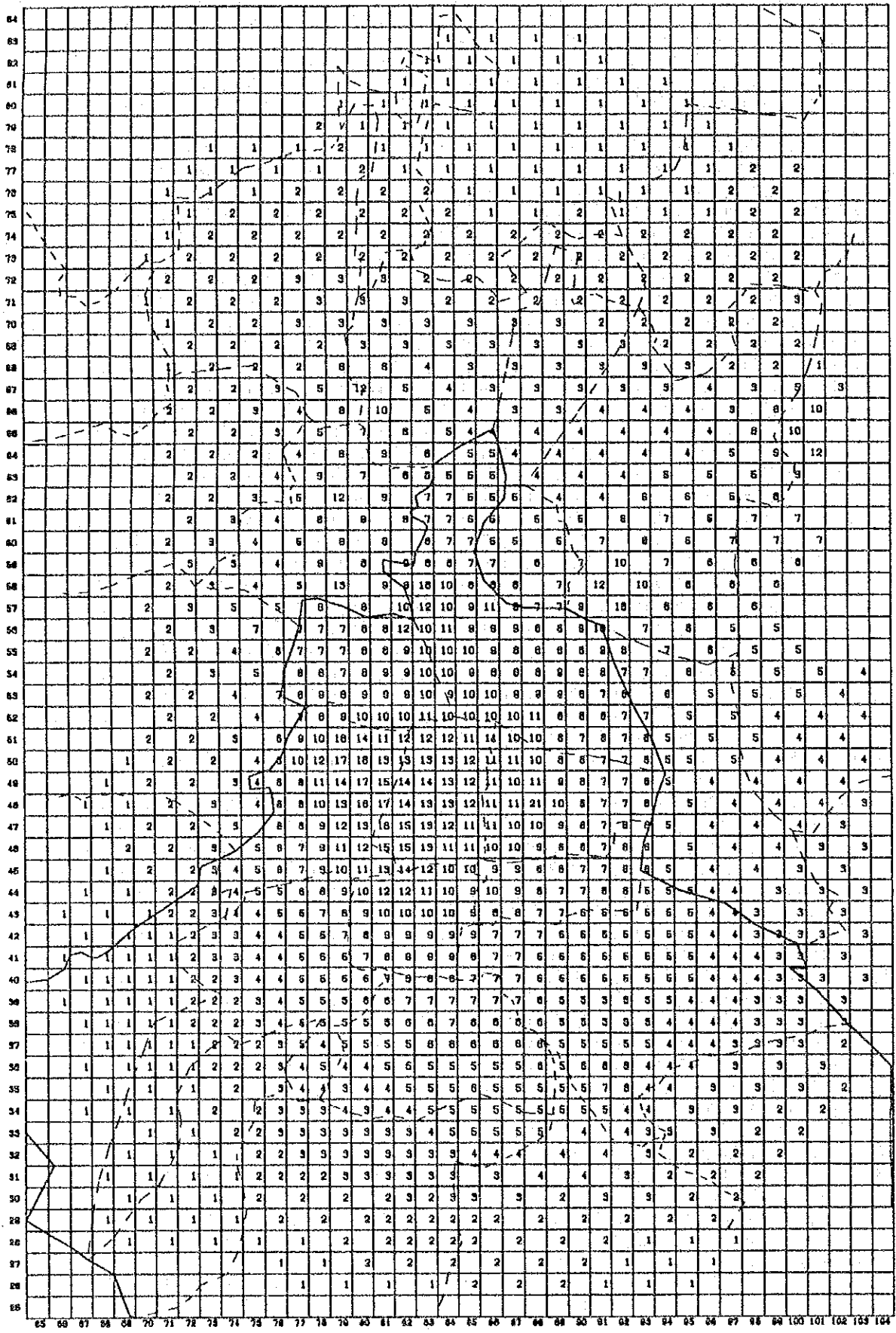
Unit: ppb

Figure 5.4.16 Contribution of Stationary Sources to NOx Concentration
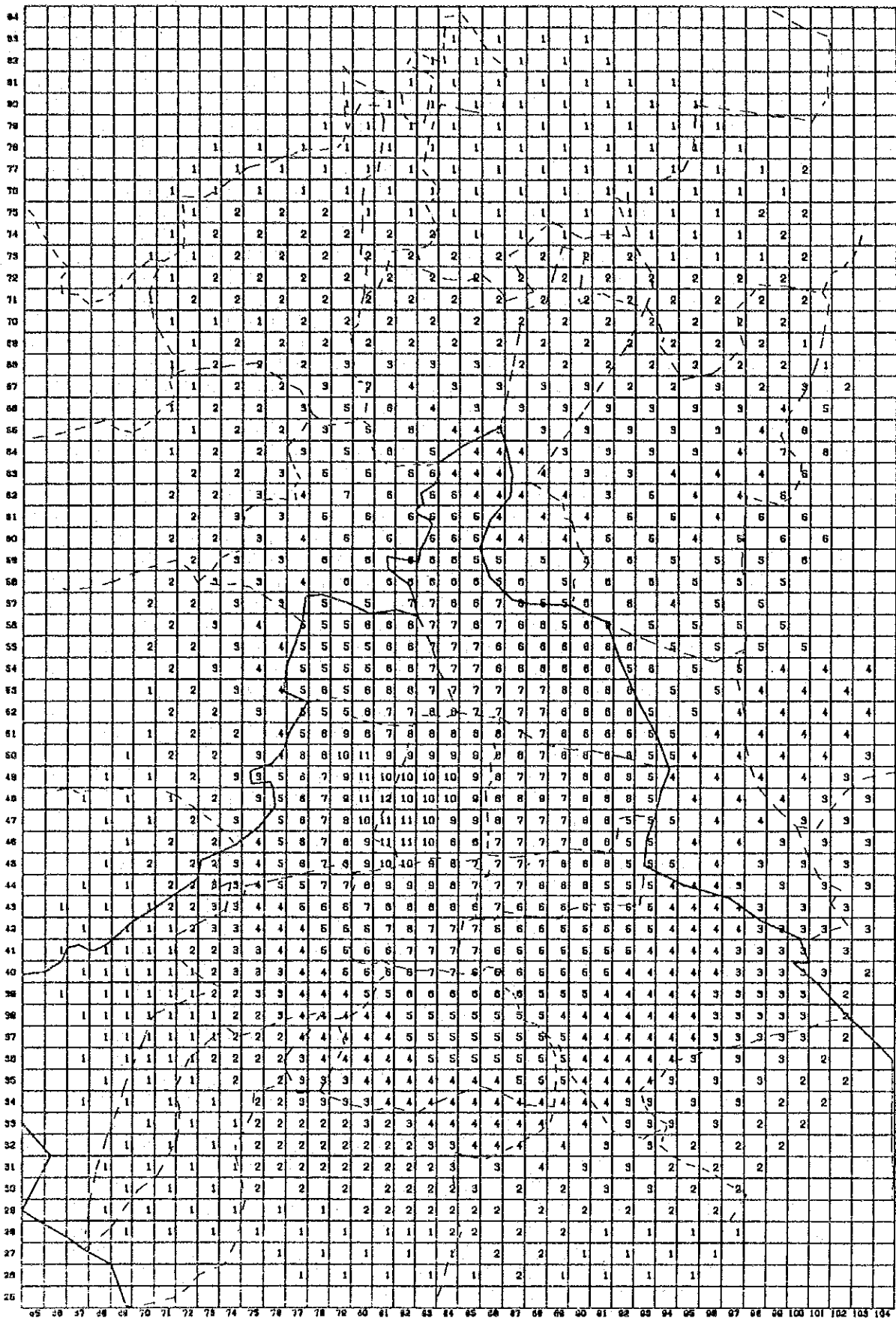(2001, With long-term control measures)
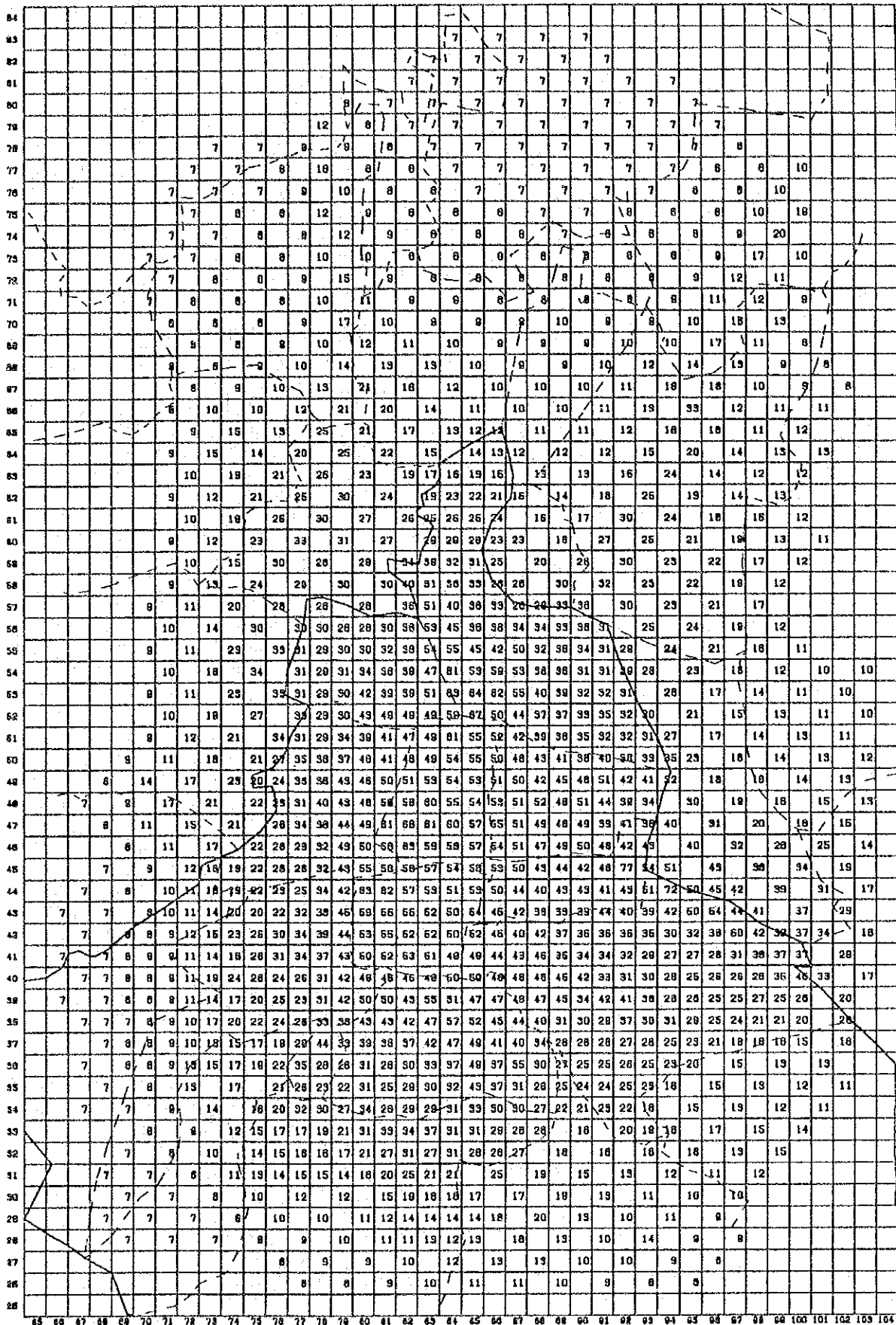
Unit: ppb

Figure 5.4.17   Contribution of Mobile Sources to NOx Concentration
(2001, With long-term control measures)
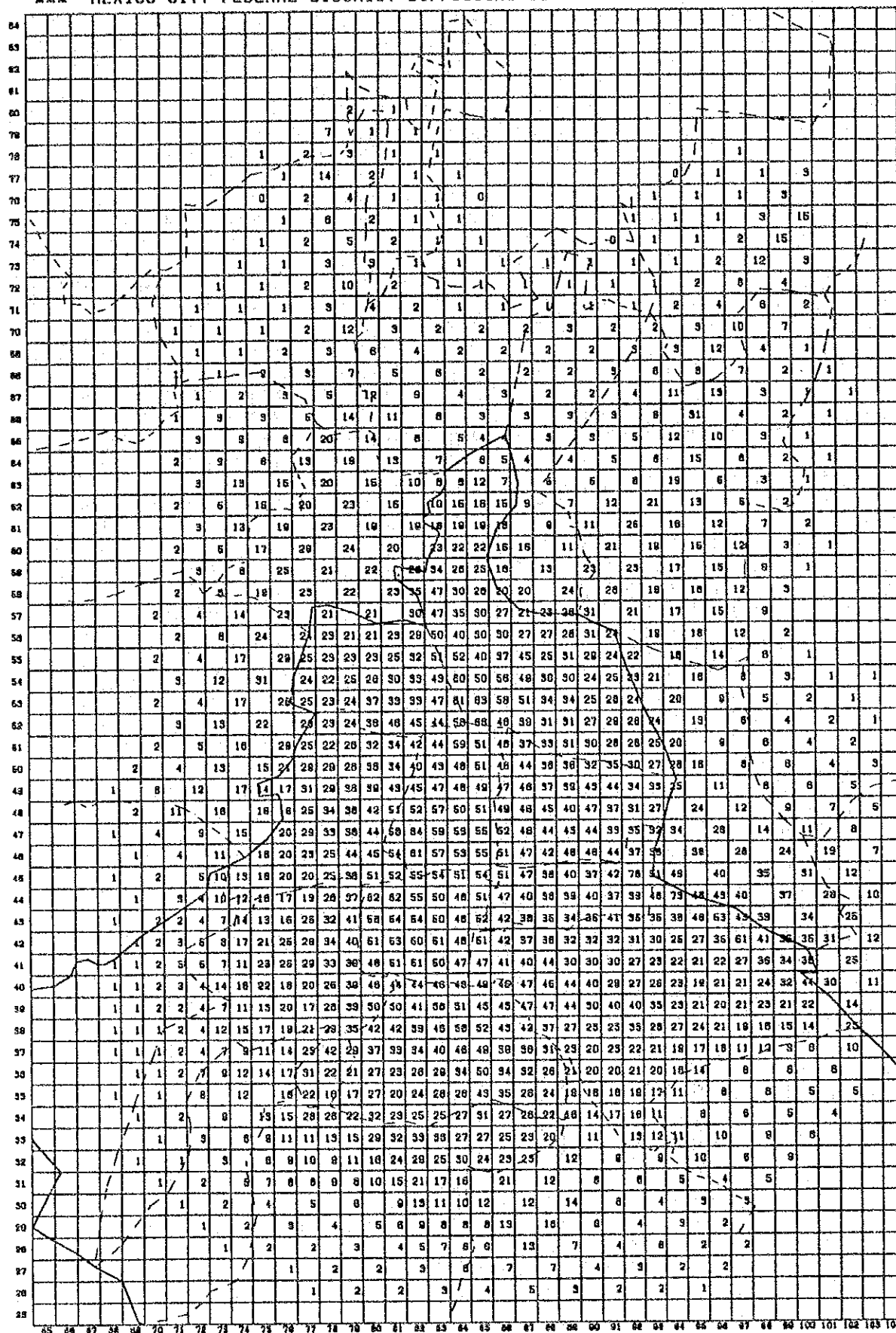
AP—394
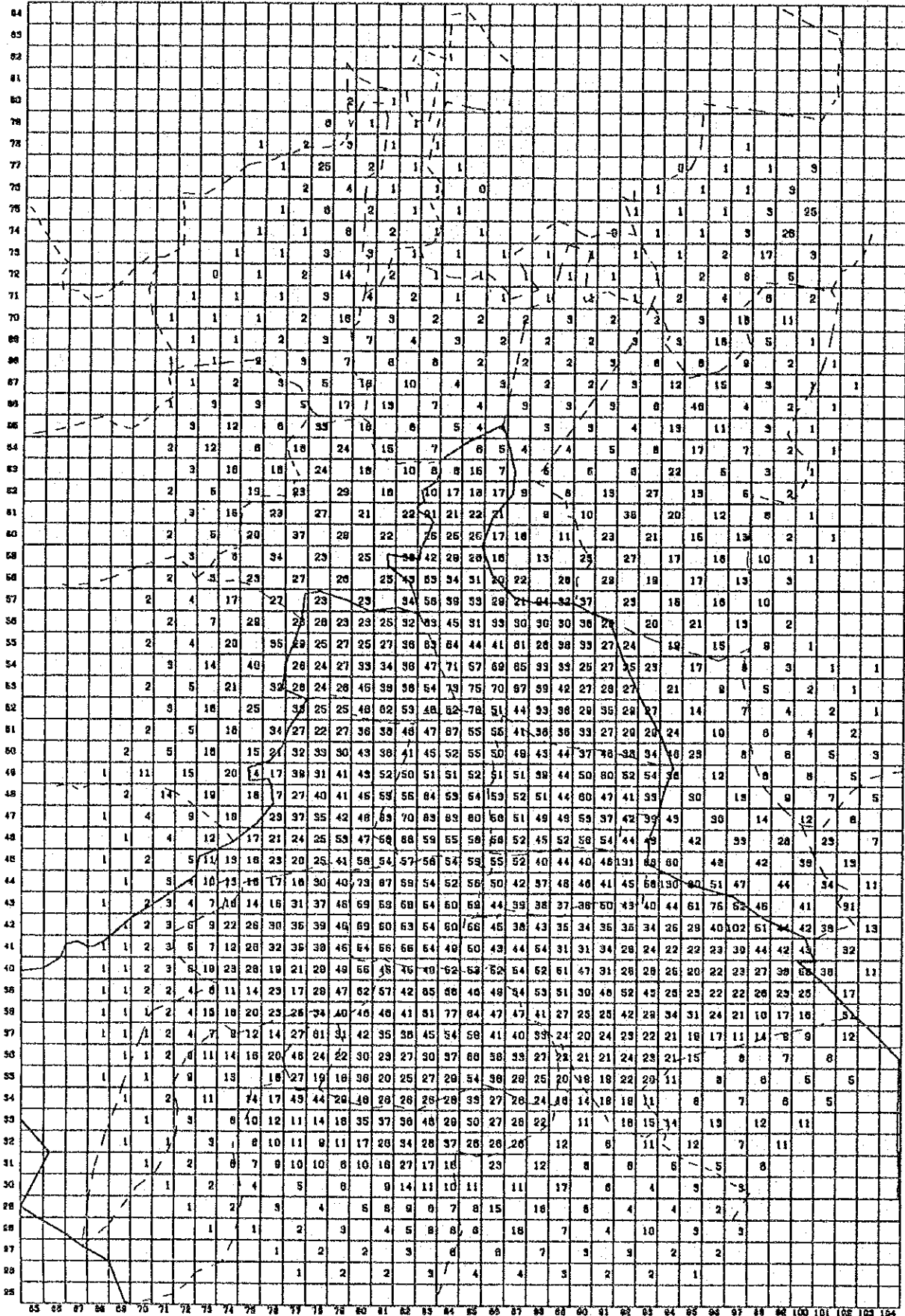
(Background concentration of 6.06 ppb included)   Unit: ppb

Figure 5.4.18   Ambient Concentration of NO_2 (All Sources)
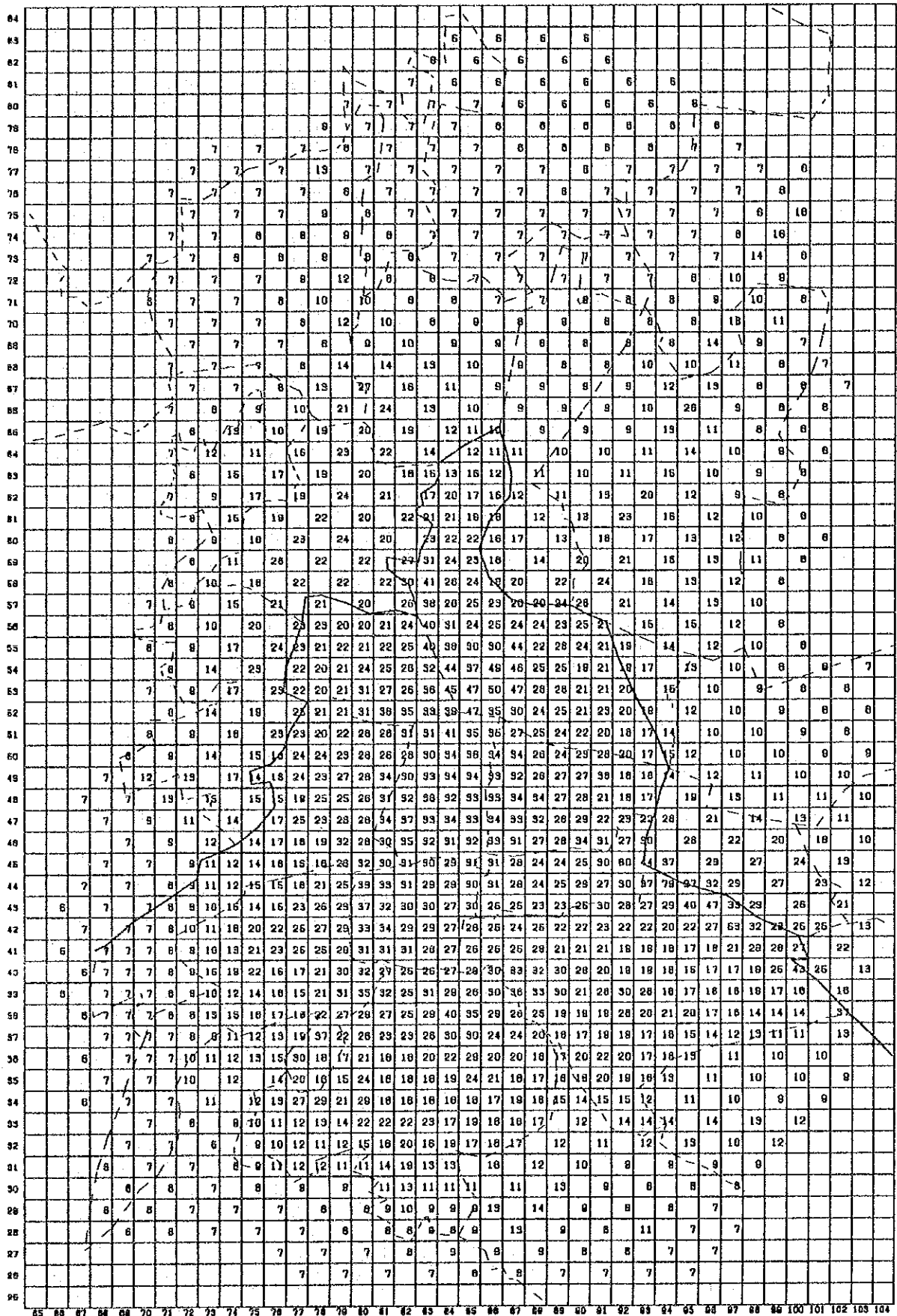(2001, With long-term control measures)
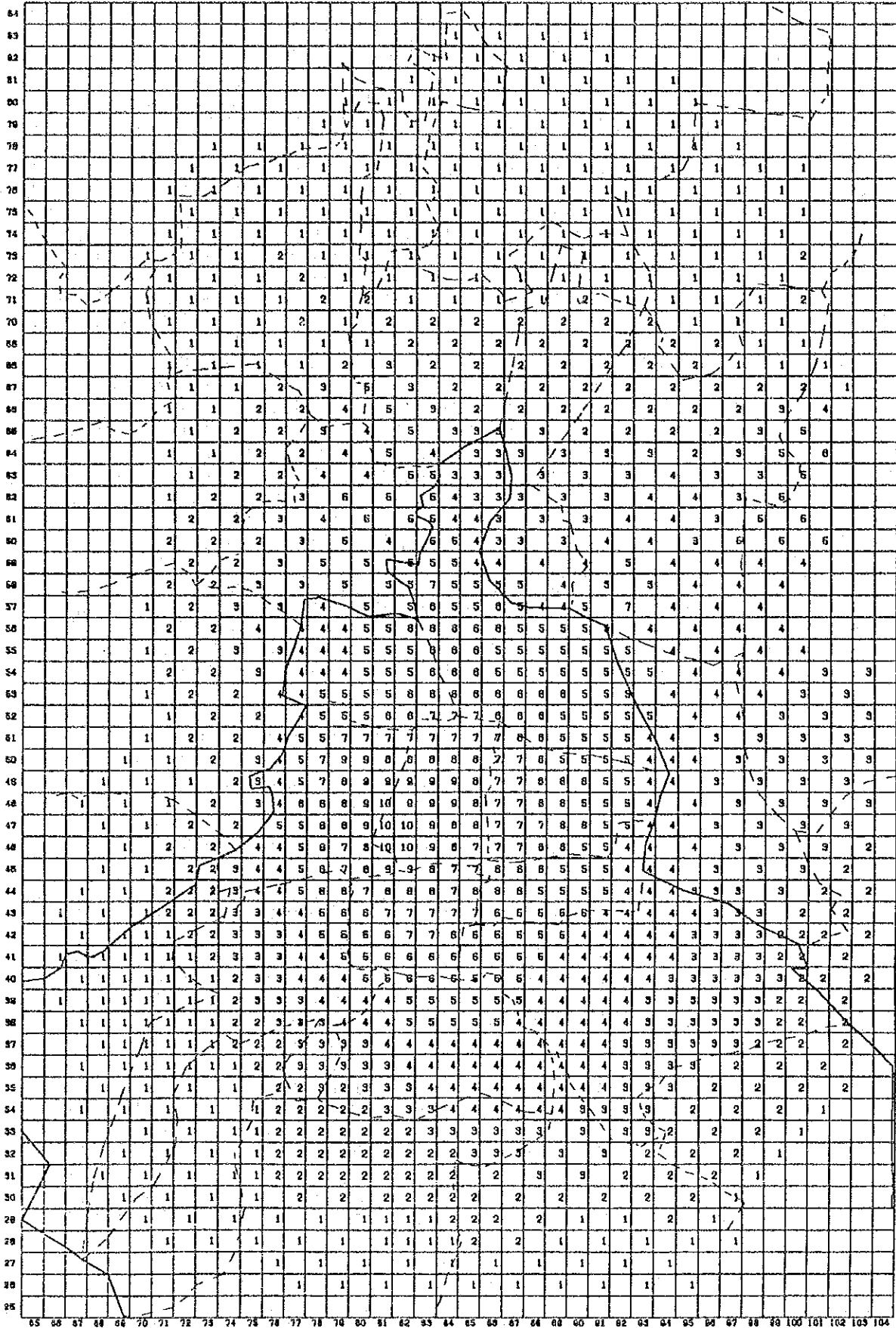
Unit: ppb

Figure 5.4.19 Contribution of Stationary Sources to NO$_2$ Concentration
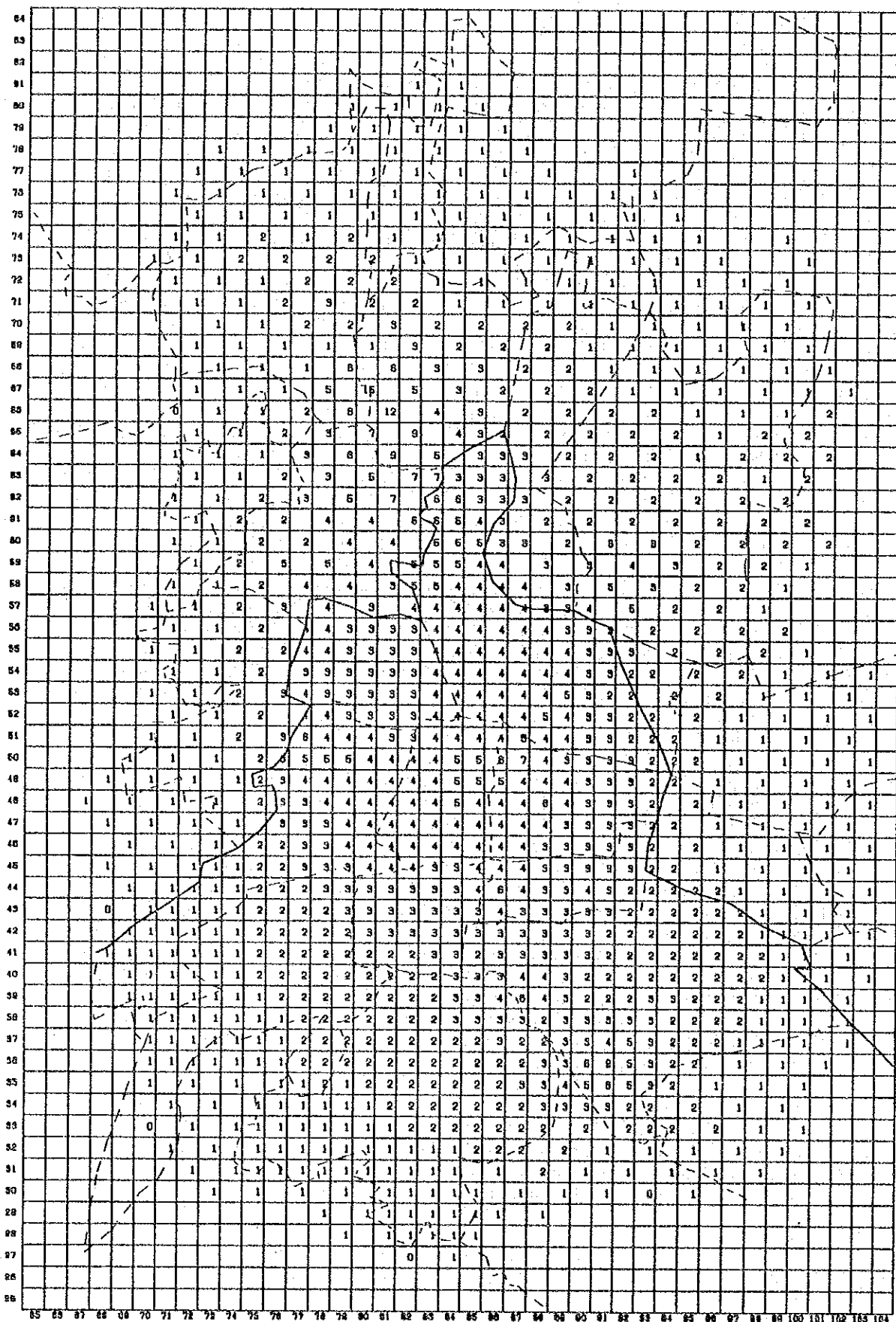(2001, With long-term control measures)
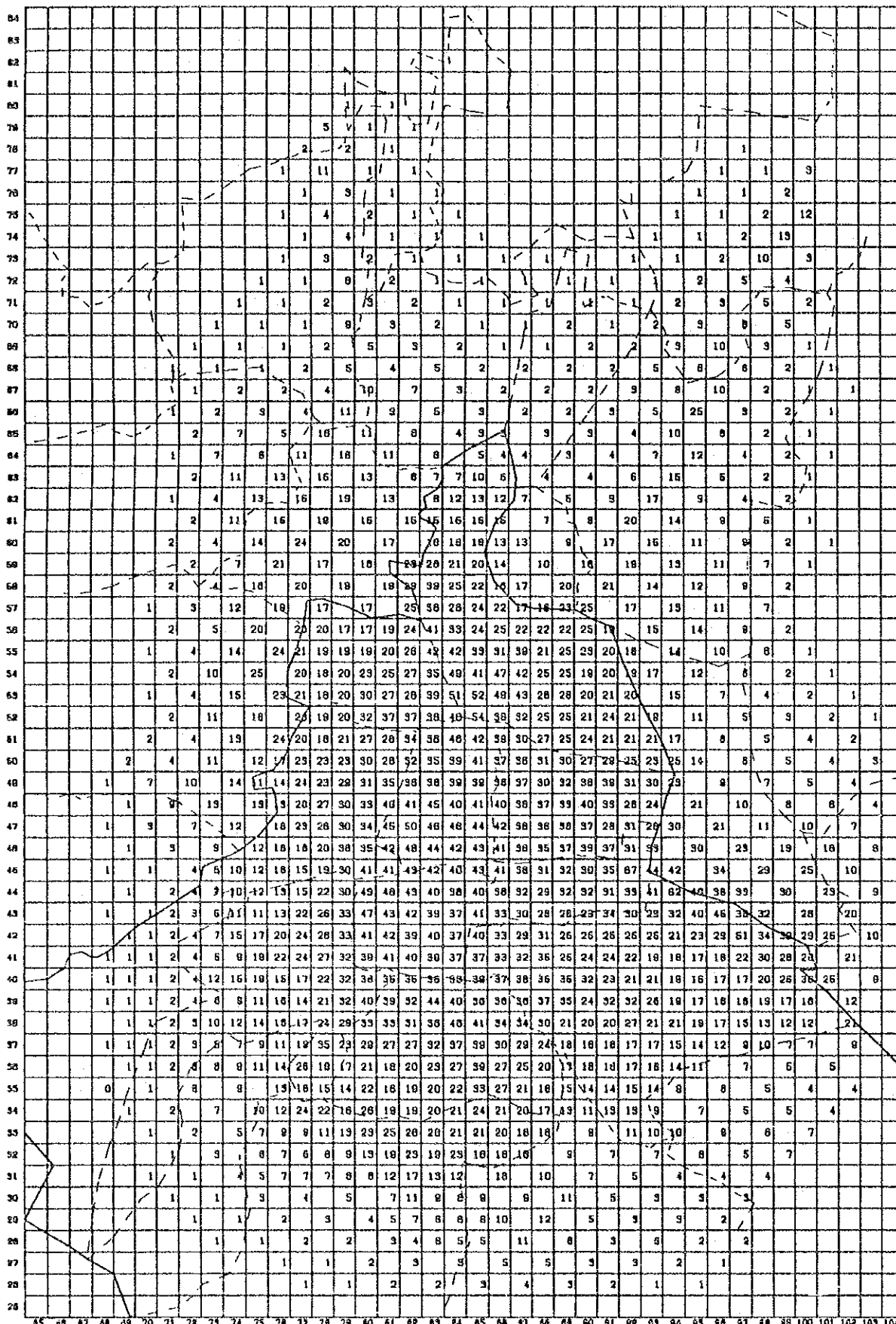
Unit: ppb

Figure 5.4.20   Contribution of Mobile Sources to NO_2 Concentration
(2001, With long-term control measures)

PART 6   STATIONARY SOURCE MONITORING AND POLLUTION CONTROL ORGANIZATION

6.1 Monitoring and Management of Stationary Air Pollutant Sources

6.1.1 Pollutant Source Inspection and Evaluation Sheets

Tables 6.1.1 through 6.1.6 are examples of inspection and evaluation sheet for stationary air pollutant source used during on-the-spot inspection. An appropriate sheet is used for a specific type of source facility.

Table 6.1.7 is an example sheet for improvement guidance addressed to the person responsible for the facility whose performance has been assessed to be insufficient by the on-the-spot inspection.

Table 6.1.1 Pollutant Source Inspection and Evaluation Sheet

(Boiler, Heating Furnace, Air Heating Furnace, Furnace   Date:
for Ceramics, Reaction Chamber, and Other Heating Furnaces)   Inspector:

Location		Representative	
Nomenclature	TEL	Section (Person) in Charge	

Item			Points	Score 1	2	3	4	5
Notifications		Is the notification of installation or change made as required by the law?	5					
		Is the notification of the operation start made as required by the law?	5					
Source Facility State		Is good quality fuel (kerosene, diesel, A-class heavy oil) used?	5					
		Are combustion equipment suitable for the fuels used?	5					
		Are primary and secondary air inlets in proper state?	5					
		Is the stack height proper? (Is the stack height in compliance with the law or guidance?)	5					
Operation (Combustion) Control State	Oils and Coals	Is the burner design satisfactory and the combustion control proper?	3					
		Is the fuel atomization state or coal grain size proper?	3					
		Is the heavy oil heating temperature or coal moisture proper?	3					
		Is the combustion state (atomization state, flame length) proper?	3					
		Is the soot blow or oven change proper?	3					
	Wood Chips	Is the wood chipped?	5					
		Is the burning chamber space sufficient and the combustion state satisfactory?	10					
		Are measuring instruments available for combustion control?	5					
		Is smoke and soot concentration measured (according to the Ringelmann method, isokinetic sampling method)?	5					
		Are there combustion control engineers?	5					
Treatment Facility		No treatment facility is necessary because thorough combustion control is made.	20					
		Treatment facility installed.	5					
		Treatment facility complies with the guidance manual.	10					
		Is treatment facility operating effectively?	10					
Surrounding Conditions		What is the situation surrounding the source?	10					
Generation State		What is the situation of smoke and soot generation?	10					
Total			100					

Remarks

Table 6.1.2 Pollutant Source Inspection and Evaluation Sheet

(Open-hearth Furnace, Electric Furnace, Metal-
melting Furnace, Melting Incinerator Converter)

Date:
Inspector:

Location		Representative	
Nomenclature	TEL	Section (Person) in Charge	

Item		Points	Score				
			1	2	3	4	5
Notifi-cations	Is the notification of installation or change made as required by the law?	5					
	Is the notification of operation start made as required by the law?	5					
Source Facility State	Is good quality raw material used?	5					
	Is the raw material (chips or various waste) pretreated?	5					
	Is a hood for the treatment facility necessary in view of the configuration of the melting furnace?	5					
	Is the stack height proper?	5					
Operation (Combustion) Control State	Is the treatment facility operating effectively?	10					
	Is there a person responsible for management of the treatment facility?	5					
	Is the maintenance and management of the treatment facility proper?	5					
	Is smoke and soot concentration measured by the legal method?	5					
	Is casting made using a mold or continuous casting?	5					
Treatment Facility	No treatment facility is necessary because the smoke and soot emission quantity is small.	20					
	Treatment facility installed.	4					
	Is the treatment facility in compliance with the guidance standard?	4					
	Is the hood shape appropriate for the melting furnace?	4					
	Is the dust collector available when molding with sand mold or rice bran mold?	4					
	Is the sedimentation tank provided for the washing type treatment facility?	4					
Surrounding Conditions	What is the situation surrounding the source?	10					
Generation State	What is the situation of smoke and soot generation?	10					
Total		100					

Remarks

Table 6.1.3 Pollutant Source Inspection and Evaluation Sheet

(Drying Furnace, Asphalt Plant)

Date:
Inspector:

Location		Representative	
Nomenclature	TEL	Section (Person) in Charge	

Item		Points	Score				
			1	2	3	4	5
Notifi- cations	Is the notification of installation or change made as required by the law?	5					
	Is the notification of operation start made as required by the law?	5					
Source Facility State	What is the internal volume (nominal capacity) of the rotary drum?	10					
	Is the fuel proper?	5					
	Is the stack height proper?	5					
Operation (Combustion) Control State	Is the treatment facility operating effectively?	5					
	Is there a person responsible for management of the treatment facility?	5					
	Is the burner well coordinated with the combustion chamber and is the combustion state satisfactory?	5					
	Is smoke and soot concentration measured by the legal method?	5					
	Is there any leakage of fine dust from the system?	5					
	Is there any smoke generated at the asphalt kettle?	5					
Treatment Facility	Is the treatment facility installed?	5					
	Is the treatment facility in compliance with the guidance standard?	10					
	Are neutralization and sedimentation tanks provided for washing type treatment facility?	5					
Surrounding Conditions	What is the situation surrounding the source?	10					
Generation State	What is the situation of smoke and soot generation?	10					
Total		100					

Remarks

Table 6.1.4 Pollutant Source Inspection and Evaluation Sheet

(Solid Waste Incinerator, Baking Furnace)

Date:
Inspector:

Location		Representative	
Nomenclature	TEL	Section (Person) in Charge	

Item			Points	Score				
				1	2	3	4	5
Notifi- cations		Is the notification of installation or change made as required by the law?	5					
		Is the notification of operation start made as required by the law?	5					
Source Facility State		Is the nature of solid waste appropriate to the incinerator? (Back sheet)	5					
		Is the A-class heavy oil used as the auxiliary combustion fuel?	5					
		Is there a combustion control specialist?	5					
		Is the stack height proper?	5					
Operation (Combustion) Control State		Is the gas temperature at the combustion chamber outlet proper?	5					
	Continuous/Batch Type Incinerator	Is the combustion flow after drying combustion proper and is post-combustion satisfactory?	5					
		Is the moisture content of the waste relatively even, are the waste lumps small, and is there sufficient void between waste during combustion?	5					
		Is the waste layer on the stoker thin?	5					
		Is the waste loading interval proper?	5					
		Is the combustion continuous?	5					
		Is the burning layer well maintained?	5					
		Is smoke and soot concentration measured by the legal method?	5					
		Is the treatment facility operating effectively?	5					
Treatment Facility		No treatment facility is necessary because the waste incineration quantity is small.	20					
		Treatment facility installed.	5					
		Is the treatment facility in compliance with the guidance standard?	10					
		Is the sedimentation tank provided for washing type treatment facility?	5					
Surrounding Conditions		What is the situation surrounding the source?	10					
Generation State		What is the situation of smoke and soot generation?	10					
Total			100					

Remarks

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Table 6.1.5 Pollutant Source Inspection and Evaluation Sheet

(Exhaust Gas and Odor Generation Facility)

Date:
Inspector:

Location		Representative
Nomenclature TEL		Section (Person) in Charge

Item		Points	Score				
			1	2	3	4	5
Notifi-cations	Is the notification of installation and addition made as required by the law?	5					
	Is there any substantial change made at the site from the approved state?	5					
Source Facility State	Is the gas generation facility the closed type reaction (mixing) tank?	20					
	Does the open type reaction (mixing) tank have the hood?	10					
	Is the hood shape appropriate for the gas generation facility?	10					
Operation (Combustion) Control State	Is there a person responsible for management of the treatment facility?	5					
	Is the treatment facility operating effectively?	15					
	Is waste water from the washing facility treated?	5					
	Is there any problem for outdoor operation?	5					
Treatment Facility	No treatment facility is necessary because the exhaust gas generation quantity is small.	15					
	Treatment facility installed because the exhaust gas generation quantity is large.	5					
	Is the treatment facility appropriate to the nature of the exhaust gas?	5					
	Are the filler and the gas-liquid separator proper?	5					
	Is the height of exhaust tower proper?	5					
Surrounding Conditions	What is the situation surrounding the source?	10					
Generation State	What is the state of gas generation?	10					
Total		100					

Remarks

Table 6.1.6 Pollutant Source Inspection and Evaluation Sheet

(Dust Generation Facility)

Date:
Inspector:

Location		Representative	
Nomenclature	TEL	Section (Person) in Charge	

Item		Points	Score				
			1	2	3	4	5
Notifi- cations	Is the notification of installation and addition made as required by the law?	5					
	Is there any substantial change made at the site from the approved state?	5					
Source Facility State	Is the hood for treatment facility necessary?	20					
	Has the hood been provided for the open type facility?	10					
	Is the shape of hood appropriate for the dust generating facility?	10					
Operation (Combustion) Control State	Is there a person responsible for management of the treatment facility?	5					
	Is the treatment facility operating effectively?	10					
	Is dust scattered from the operation site?	10					
	Is the dust generating facility well distanced from neighboring buildings?	5					
Treatment Facility	No treatment facility is necessary because the dust generation quantity is small.	20					
	Treatment facility installed because the dust generation quantity is large.	5					
	Is the treatment facility appropriate to the nature of dust?	10					
	Is the height of exhaust tower proper?	5					
Surrounding Conditions	What is the situation surrounding the source?	10					
Generation State	What is the state of dust generation?	10					
Total		100					

Remarks

Table 6.1.7　Pollutant Source Facility Improvement Guidance Sheet

Pollutant Source Facility Improvement Guidance Sheet

No.

Date

Name of plant or office _____

Location _____

Name of manager 　　To Mr. _____

(Signature)

Inspector _____

We have inspected today the pollutant source (　　　) of your plant/office and concluded the following items improper. It is requested that you take appropriate improvement measures to prevent pollution.

Items

1.

2.

3.

The improvement plan in written form should be submitted to the office of the inspector

Guidance sheet received by

(　　Signature　　)

Name

6.1.2 Preparation of Patrol Inspection/Guidance Plan

(1) Preparation and Establishment of the Plan

1) The person responsible for the smoke and soot generating facility (director or section chief) determines the "Guideline for Patrol Inspection and Guidance Plan" every month and provides guidance to each inspection group concerning preparation of the patrol inspection plan and the on-the-spot inspection and guidance plan.

2) Each inspection group prepares the patrol inspection plan and on-the-spot inspection and guidance plan according to the "Monthly Patrol Inspection/Guidance Plan."

3) Each monitoring group prepares the Monthly Patrol Inspection/ Guidance Plan by the end of the previous month for approval of the person responsible for inspection (director or section chief).

(2) Report of Patrol Inspection/Guidance Result

1) Daily Job Report

Each patrol inspection group prepares the daily group job report every day and reports the performance of patrol inspection and guidance to the person responsible for monitoring (director or section chief).

2) Monthly Report

The patrol inspection group prepares the monthly reports on the result of patrol inspection and on the result of on-the-spot inspection and guidance according to the format of the "Monthly Report of Patrol Inspection/Guidance Result."

3) Improvement Report

The improvement report from the plant or office for which the guidance has been provided is presented each time to the person responsible for inspection (director or section chief), along with the reference data.

(3)   Pollutant Source Ledger

   1)   Method of Preparation

The pollutant source ledger is to be prepared for each plant or
office, and the new pollutant source ledger must be prepared
immediately for the new plant or office. When there are
substantial change in the content, addition of the description
beyond the space available, or shortage of the space in the
back sheet due to 10 times or more guidance, the pollutant
source ledger must be renewed. In this case, the date of
renewal is entered and the correction or rewriting of the
content made in the new ledger. Both old and new pages form
the ledger for the plant or office concerned.

.In case of abolishing the ledger, the date of the abolishment
is entered and the abolishment stamp provided. This abolished
ledger will be retained.

   2)   Ledger Number

The ledger number must be serial for each district. When the
ledger is renewed, the branch number is provided to the new
ledger without changing the ledger number.

   3)   Filing Method

The ledger is classified and filed for each district and town
or street, and the index or classification file book must be
prepared as required.

   4)   Item and Entry Method

   a.   Kind of pollutant

      a)   "Smoke and Soot" refer to soot and other solid particulates
           or sulfurous acid gas or sulfuric acid anhydride produced
           during combustion of fuel or use of electricity as a heat
           source.

      b)   "Dust" refers to those solid particulates produced through
           other than combustion of fuel or use of electricity as a
           heat source.

c) "Gas" refers to the gases, odor, and offensive odor other than "smoke and soot" and "dust."

b. Cover sheet (Surface)

a) Notification or approval of the plant and office
Enter the date of approval or notification as required by the law as well as the plant ledger number and encircle either "approved" or "not approved."

b) Location, name, responsible person
Enter the location, name, phone number, and name of responsible person for the plant or office.

c) Section (person) in charge
Enter the name of the section (or person) in charge of pollution control in the plant or office.

d) Land use category
Enter the category of land use according to the Building Standard Law.

e) Industry group
Enter the name of industry group according to the subgroup of the industry classification.

f) Principal product
Enter the name of principal product of the plant or office.

g) Lot area, operation site area, number of employees
Enter the lot area, operation site area, and number of employees of the plant or office.

h) Outline of neighboring area
Classify the neighboring area into 5 categories: houses concentrated, stores concentrated, factories concentrated, houses and stores mixed, and houses and factories mixed. And describe the details as required.

i) Smoke and soot
Source facility: Enter the name, size, and number of the facility according to the Smoke and Soot Regulation Law and the Code of Smoke and Soot Prevention.

Fuel: Enter the kid of fuel used, sulfur content, and consumption.

Dust collector: Classify the dust collector into 6 types: gravity, inertia, centrifugal, washing, filter, and electrostatic. When two or more types are used, enter each type. Enter the size of dust collector by specifying the capacity in "m^3/min (at ℃)" or "Nm^3/min."

Stack: Enter the structure, height, and diameter of the stack used. When one dust collector or one stack deals with smokes from two or more smoke generating facilities, enter the treatment method for each facility.

Operating time: Enter the normal operating time. If the facility is not operated regularly, enter the operating time and frequency.

Seasonal variation: Enter the seasonal operational variation, if any, in one year.

Notification: Enter the date of notification as required by the Smoke and Soot Regulation Law and the Code of Smoke and Soot Prevention, and the facility number.

Remarks: Enter the quantity of soot and dust collected by the dust collector and reference items (treatment method, etc.).

j) Dust and gas
   Enter according to the procedure described for smoke and soot.

k) Date of preparation of the ledger
   Enter the date when the pollutant source ledger is newly prepared.

l) Date of change
   Enter the date when the content of the ledger is to be changed, and specify the portion of change.

m) Renewal
   Renew the ledger when the ledger need be changed, added, or rewritten because of substantial change in the content,

addition of content beyond the space available, or shortage
of the space in the back sheet due to 10 times or more
guidance. Enter the date and reason of renewal.

n) Process flow sheet
Enter the flow sheet to specify the pollutant source
portion, degree of pollutant emission, and pollutant removal
portion.

c. Back Sheet

a) Date of guidance
Enter the date of providing the guidance.

b) Assessment
Enter the assessment or evaluation score for each type of
pollutant.

c) Content of guidance
Enter specifically the unsatisfactory items and guidance
items during the on-the-spot inspection.

d) Guidance slip number and date of issue
Enter the number and date of issue of the guidance slip.

e) Content of report
Enter the content of the improvement report submitted by
the plant or office for which guidance has been provided.

6.2   Pollution Control Organization in Tokyo Metropolitan Government

Table 6.2.1 shows number of personnel, as of October 1972, in each organizational unit of Pollution Bureau, Tokyo Metropolitan Government, classified by specialized field of personnel.

Table 6.2.1 Personnel Arrangement in Pollution Bureau, Tokyo Metropolitan Government (As of Oct. 1972)

Organizational Unit	Management	Clerk	Mechanical eng.	Architecture	Electric eng.	Civil eng.	Chemical eng. and Chemistry	Environmental eng.	Water quality	Fisheries	Health inspection	Agricultural	Isotope	Surgeon	Veterinary	Health nurse	(Sub-total)	Patrol	Driver	Assistant clerk	Worker	(Sub-total)	Part-timer	Total
Dept. Planning	9	23				2	2	1									5							28
Dept. Traffic Disaster Prevention	8 (4)	11 (6)																						11 (6)
Dept. General Affairs — General Affairs	5	37					3		1								4		1			1		42
Dept. General Affairs — Consultation	3	18																						18
Dept. General Affairs — (Sub-total)	8	55					3		1								4		1			1		60
Dept. Pollution Prevention Assistance — Assistance	2	17	1	1													2	3	2			5		24
Dept. Pollution Prevention Assistance — Location	3	10	4	3				1									8	2				2		20
Dept. Pollution Prevention Assistance — (Sub-total)	5	27	5	4				1									10	5	2			7		44
Dept. Pollution Control and Guidance — Guidance	2	25																	2			2		27
Dept. Pollution Control and Guidance — Regulation Standards	7	9	5				9	3			1						18							27
Dept. Pollution Control and Guidance — High Pressure Gas	1	6	15		1		12										28		1	1		2	1	37
Dept. Pollution Control and Guidance — Explosive/Electricity	1	3	2		4		6										12			1		1		16
Dept. Pollution Control and Guidance — (Sub-total)	11	43	22		5		27	3			1						58		3	2		5	1	107
Dept. Inspection — Inspection Management	2	14	2	1			3	1	1								8		20	1		21		43
Dept. Inspection — Monitoring	2	10	4	1	1		10	4	1	1							22	5				5		37
Dept. Inspection — Inspection No.1	1	5	2				5	1		1							9	4				4		18
Dept. Inspection — Inspection No.2	1	3	1	1	1		6	1		1							11	3				3		17
Dept. Inspection — Inspection No.3	1	4	1	1	1		7	1									11	3				3		18
Dept. Inspection — Special Inspection	1	4		2			5										7	4				4		15
Dept. Inspection — Examination	1	1					6		1			1					8							9
Dept. Inspection — (Sub-total)	9	41	10	6	3		42	8	3	3		1					76	19	20	1		40		157
Pollution Research Institute — General Affairs	2	13																	2		1	3		16
Pollution Research Institute — General Study	1	6																						6
Pollution Research Institute — Health							2							1	2	1	6				1	1		7
Pollution Research Institute — Atmosphere	1		3				15	4			2	1	1				26							26
Pollution Research Institute — Water Quality	1					1	7		2	3							13	2				2		15
Pollution Research Institute — Noise	1		3	2	1		1	2									9							9
Pollution Research Institute — Land Subsidence																								
Pollution Research Institute — (Sub-total)	6	19	6	2	1	1	25	6	2	3	2	1	1	1	2	1	54	2	2		2	6		79
Tama District Pollution Control Office — Guidance	2	14			2		5										7		6			6		27
Tama District Pollution Control Office — Inspection	1	7	2	1	2		10	4									19	1				1		27
Tama District Pollution Control Office — Examination	1	1					7			1							8	1				1		10
Tama District Pollution Control Office — (Sub-total)	4	22	2	1	4		22	4		1							34	2	6			8		64
Total	55	241	45	13	13	3	121	23	6	8	2	2	1	1	2	1	241	28	34	3	2	67	1	550

Remark: Numeral in ( ) in Dept. traffic disaster prevention is the number of the employees concurrently assigned in other departments.

Source: Outline of Works in Pollution Bureau of Tokyo Metropolitan Government

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