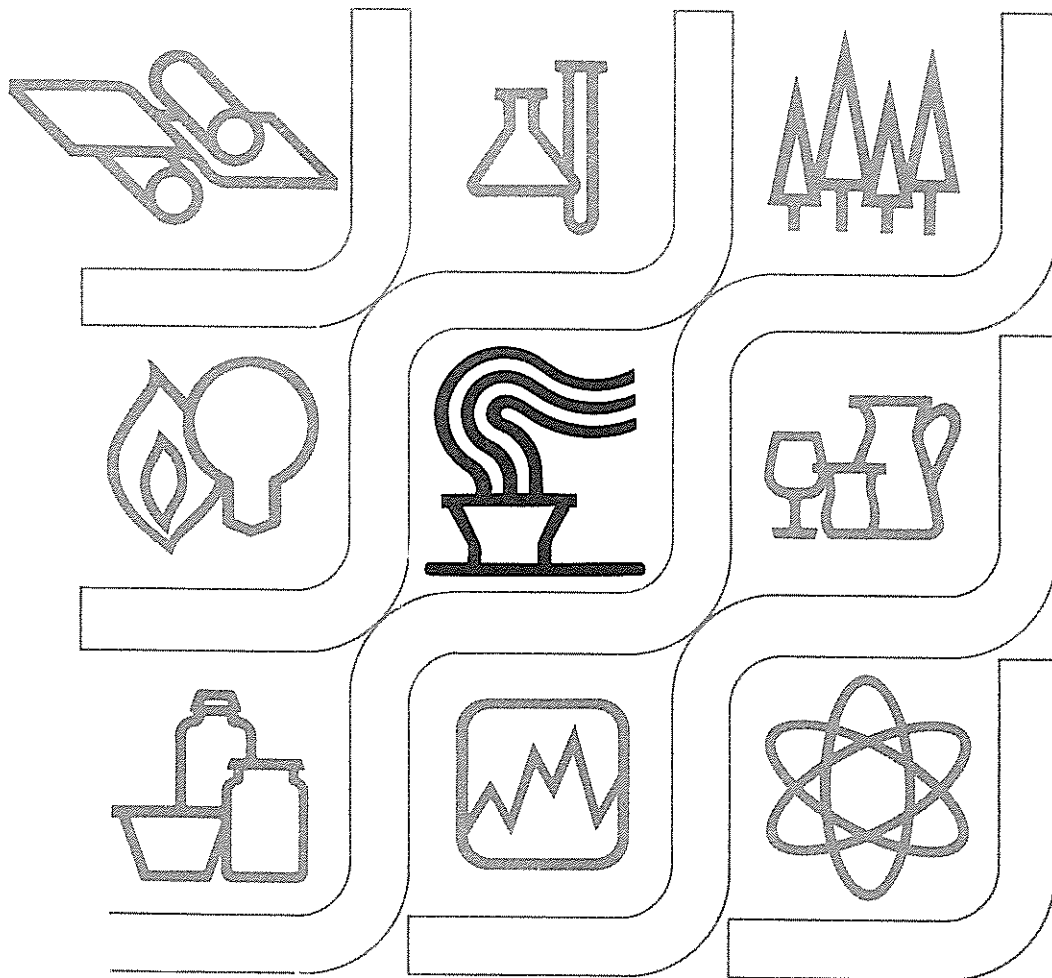

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Pollution Abatement Costs and Expenditures, 1980 MA-200(80)-1



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Pollution Abatement Costs and Expenditures, 1980

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Introduction

SUMMARY OF SURVEY RESULTS

Pollution abatement capital expenditures by manufacturing establishments amounted to \$3,542 million in 1980. Of this total, \$2,124 million was for air pollution abatement, \$1,163 million was for water pollution, and \$255 million was for solid waste pollution abatement. In addition, operating costs related to pollution abatement activities (including payments to governmental units) totaled \$8,209 million in 1980 of which \$3,324 million was spent for air pollution, \$3,220 million for water pollution, and \$1,666 million for solid waste pollution. These totals for 1980 compare with \$3,602 million in capital expenditures and \$7,462 million in operating costs for 1979. Although the overall decline in total pollution abatement capital expenditures was 2 percent, air and solid waste capital expenditures increased 2 and 1 percent respectively. Water pollution capital expenditures decreased \$99 million or 8 percent in 1980. All components of pollution abatement operating costs (air, water, and solid waste) registered increases as in the previous year. Total operating costs increased \$748 million or 10 percent.

Data in this publication are collected in the annual census report, Survey of Pollution Abatement Costs and Expenditures, (Form MA-200). See appendix A for a reproduction of the report form and instructions.

POLLUTION ABATEMENT CAPITAL EXPENDITURES

Approximately 68 percent of the \$3,542 million new capital expenditures for pollution abatement were made by establishments classified in four major industry groups. In order of value, they include Chemicals and Allied Products (major group 28), Primary Metal Industries (major group 33), Petroleum and Coal Products (major group 29) and Paper and Allied Products (major group 26). These same industries also accounted for the largest amount of pollution abatement capital expenditures in previous years. Chart A illustrates this concentration, on a historical basis, for air, water, and solid waste capital expenditures by major industry group.

In 1980, new capital expenditures for pollution abatement are concentrated in the States of Texas, California, Pennsylvania, and Ohio, accounting for about 32 percent of the total pollution abatement capital expenditures. Chart B illustrates the pollution capital expenditures by State. Chart C shows the total capital expenditures for pollution abatement for the top 10 standard metropolitan statistical areas (SMSA) ranked by

employment size. (Appendix B contains the definitions for each SMSA.)

Within tables 2A, 2B, and 2C, both air and water pollution abatement capital expenditures are separated on the basis of abatement technique, distinguishing between plant and equipment designed to abate pollutants through end-of-line (EOL) techniques and those designed to reduce or eliminate the generation of pollutants through changes-in-production processes (CIPP). These data show that the major portion of pollution abatement capital expenditures is spent on EOL techniques.

Separate expenditure data are also shown in these tables for major types of air pollutants to be abated such as particulates; sulfur oxides; nitrogen oxides, hydrocarbons, and carbon monoxides; and heavy metals, radioactive and toxic substances, and other. These data show that the largest share of capital expenditures for air pollution abatement in 1980, as in earlier years, related to particulates. (Where expenditures occur for techniques that abate both sulfur oxides and particulates, the respondent was instructed to include all such expenditures with sulfur oxides.)

Pollution abatement capital expenditures reported in this survey exclude expenditures for the reduction of noise pollution and the improvement of aesthetics or employee comfort or safety. Also excluded are purchases of motor vehicles with pollution abatement devices and expenditures to assure an adequate water supply for production. Manufacturers of pollution abatement equipment of materials, such as electrostatic precipitators or desulfurized fuels, to be sold to others for pollution abatement purposes were instructed to exclude expenses associated with the development and production of these products.

POLLUTION ABATEMENT OPERATING COSTS

Operating costs related to pollution abatement totaled \$8,209 million in 1980. The operating costs (excluding payments to governmental units) totaled \$7,542 million for plants with 20 or more employees, and consisted of \$1,420 million for depreciation, \$1,627 million for labor, \$2,293 million for materials and supplies, and \$2,202 million for services, equipment leasing, and other costs. Chart D shows the relationship between capital expenditures and operating costs by form of pollutant being abated for 1980. Chart E shows pollution abatement operating costs by type of expense for 1979 and 1980.

Certain industries typically rely more on governmental units for pollution abatement activities rather than utilizing capital

CHART A.

Manufacturers' Pollution Abatement Capital Expenditures, by Form of Abatement and Major Industry Group: 1973 to 1980

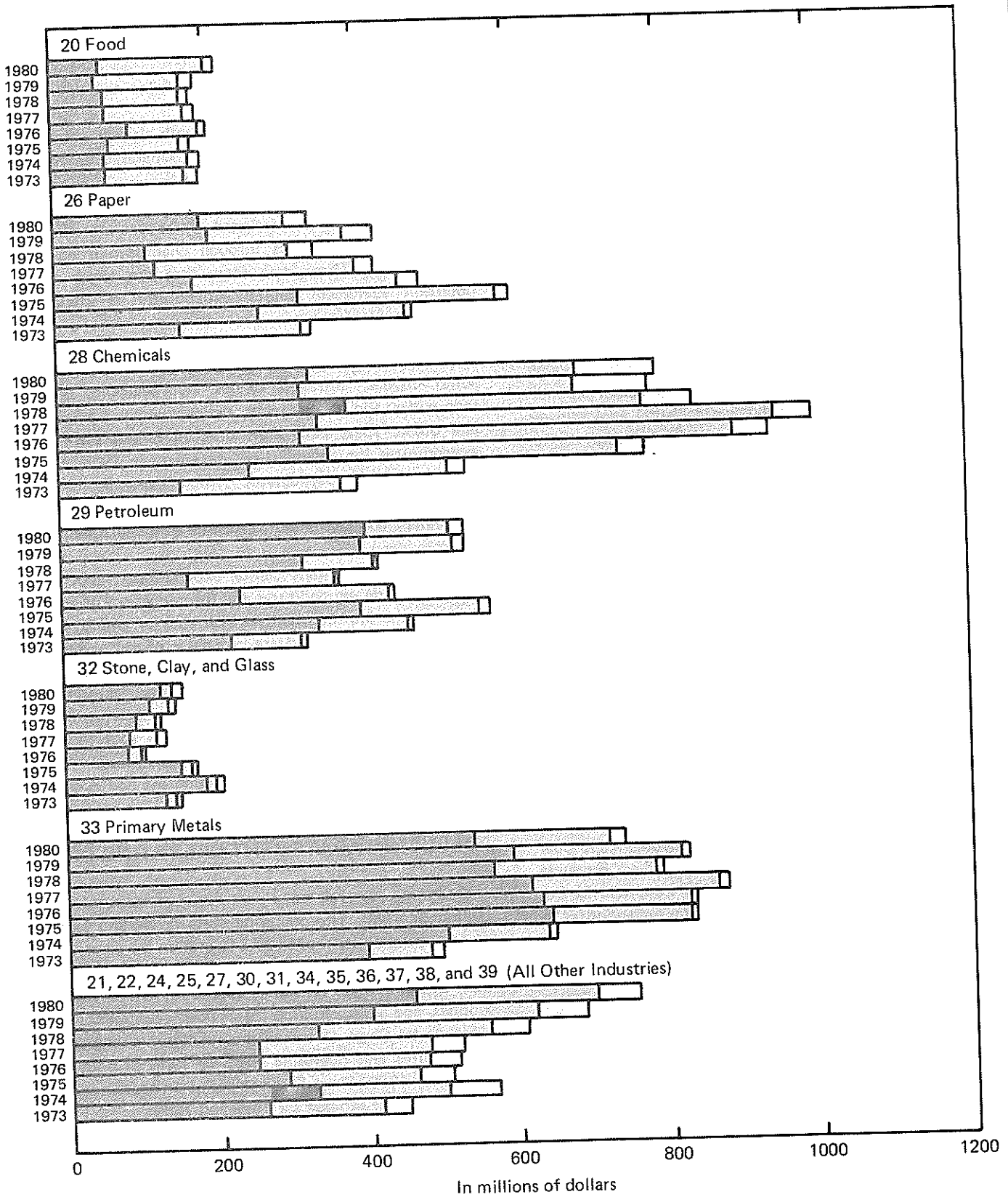
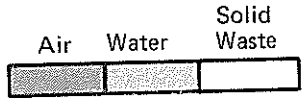


CHART B.
Manufacturers' Pollution Abatement Capital Expenditures, by State: 1980

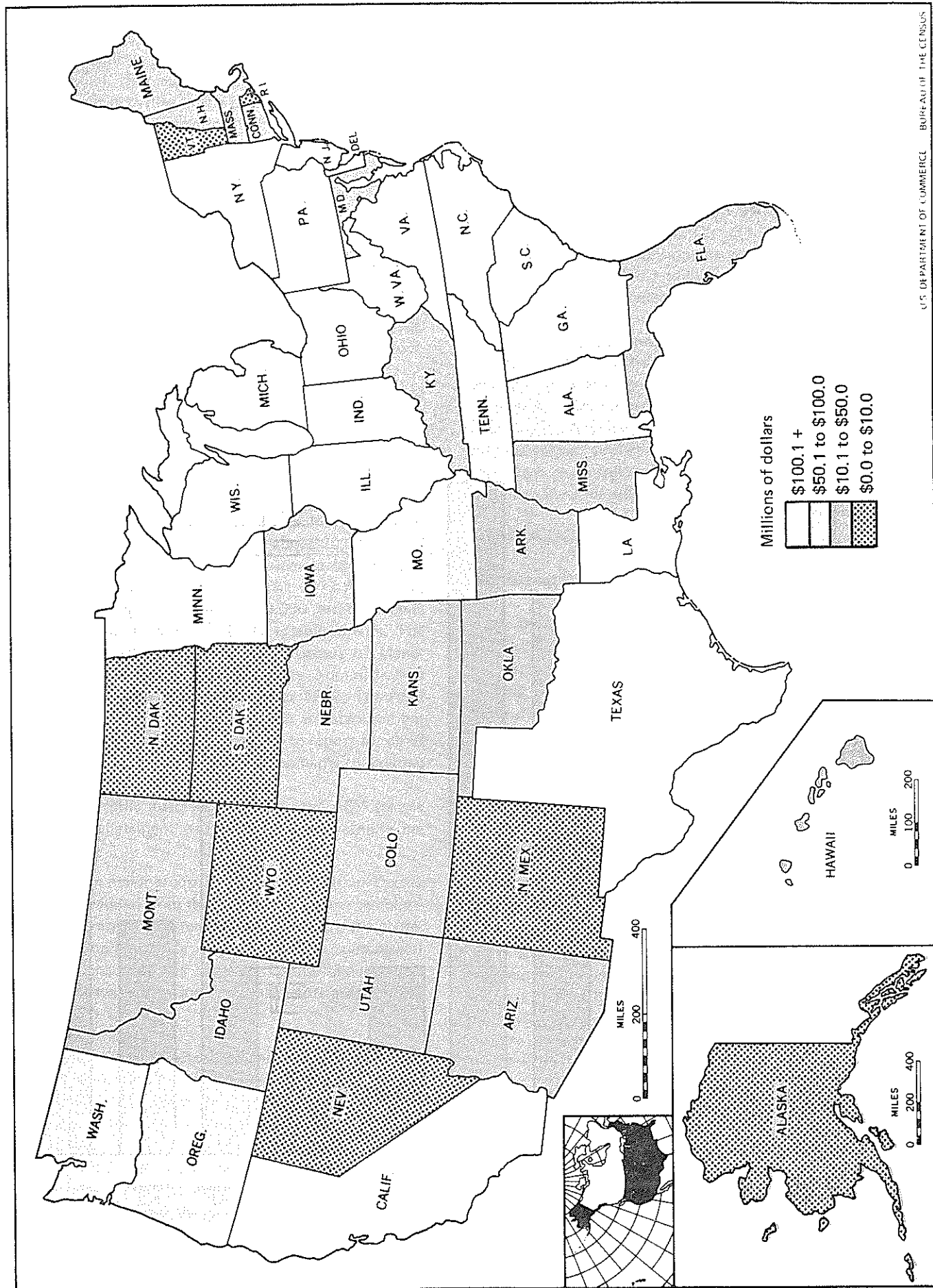
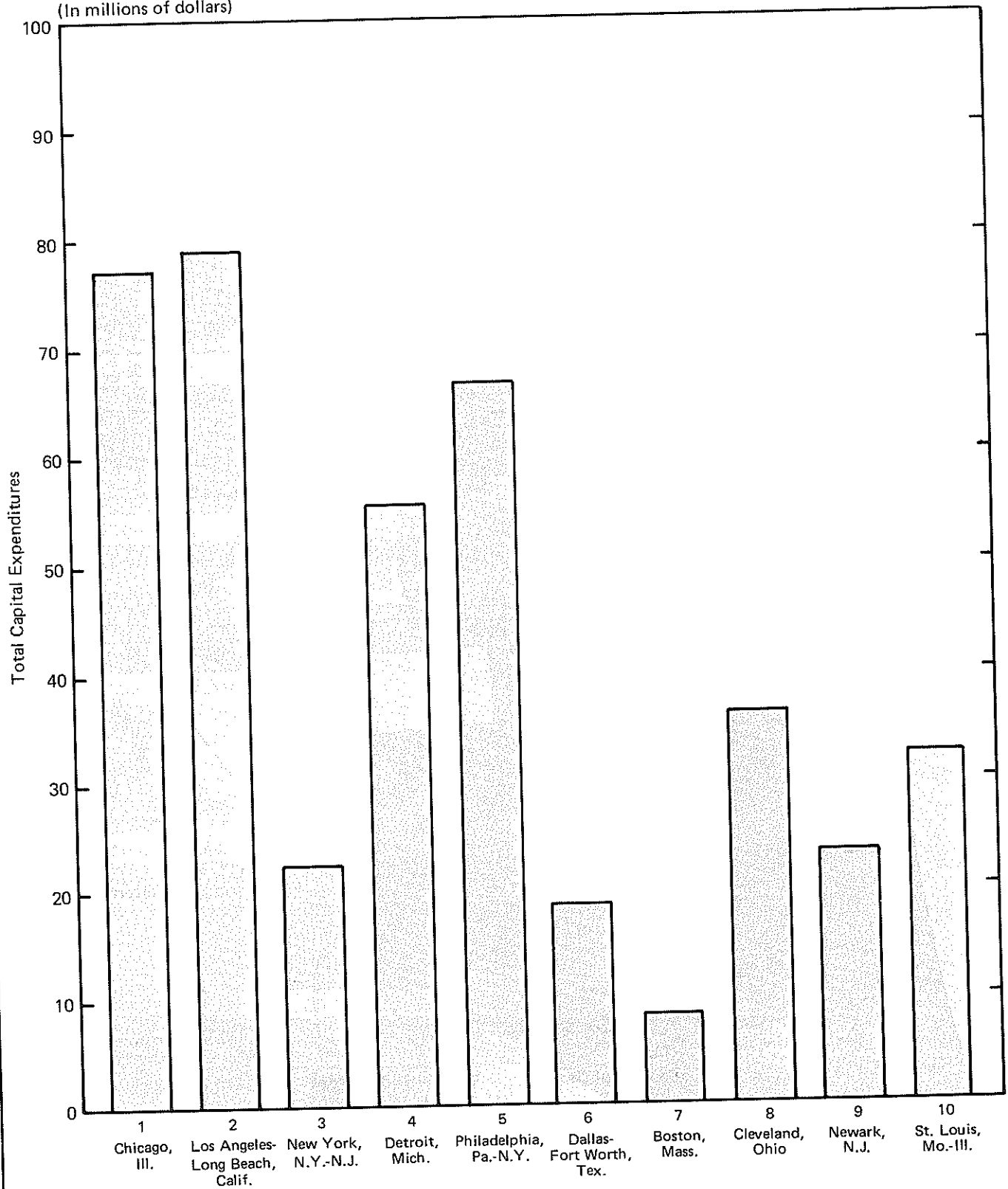


CHART C.

Manufacturers' Pollution Abatement Capital Expenditures for the Ten Standard Metropolitan Statistical Areas With the Largest Number of Manufacturing Employees, Ranked by Number of Employees: 1980

(In millions of dollars)



Standard Metropolitan Statistical Area (1978 Ranking)

investments and operations at their own plant. Those industries with the largest amounts are major groups 20 (Food and Kindred Products), 28 (Chemicals and Allied Products), and 26 (Paper and Allied Products). (For another Census Bureau report on the pollution abatement activities in the public sector, see *Environmental Quality Control, Government Finances: Fiscal Year 1978-79.*)

OTHER INFORMATION IN TABLES

In addition to the data highlighted previously in the text of this report, there are a number of other tables which present information of importance. Tables 4A, 4B, and 4C contain information on the costs recovered by manufacturers either by reuse in production or by sale. Tables 5A, 5B, and 5C present data on quantities of air, water, and solid waste pollutants removed in 1980.

For an explanation of the items used in this report, see appendix A, which is a reproduction of the report form and accompanying instructions.

DESCRIPTION OF THE SURVEY SAMPLE

The statistics presented in this report are estimates compiled from a survey or a probability sample of about 20,000 manufacturing establishments selected as a subsample of the 1977 Annual Survey of Manufactures (ASM). The 1977 ASM is, in turn, a probability sample of about 70,000 establishments selected from a total of about 312,000 establishments. The ASM sample was selected from the 1972 Census of Manufactures lists supplemented by Social Security Administration lists of new manufacturers that opened after 1972. The ASM sample is defined on a company rather than an establishment basis; that is, selected companies are required to report for all of their plants in the ASM so that new establishments of existing companies are included in the ASM sample.

The following specific differences between the ASM sample and the pollution abatement expenditures (PAE) sample are worthy of note:

- 1. Establishments in major group 23, Apparel and Other Textile Products, are excluded from the PAE survey. These establishments operate primarily in rented quarters where the abatement of pollution (probably most of which is solid waste) is generally arranged by the landlord. Capital expenditures for pollution abatement in such establishments are probably minimal.
- 2. The PAE sample was an establishment sample rather than a company sample; that is, a company included in the ASM sample with 10 manufacturing plants might be included in the PAE survey for only 4 of the plants.
- 3. The 1977 to 1980 PAE sample does not include any establishments with less than 20 employees. This is a departure from previous PAE (and the present ASM) panels which included establishments of all sizes. Previous PAE surveys had indicated that establishments with less than 20 employees contributed only about 2 percent to the pollution

estimates while constituting more than 10 percent of the sample size. To reduce the reporting burden for small establishments, plants with less than 20 employees were eliminated from the 1977 sampling frame. Data are estimated for these smaller plants in tables 1A and 1B.

The probabilities of selection assigned to establishments in the sampling frame (all in-scope ASM establishments) were determined so that the final probabilities of selection for the PAE sample were proportional to the establishments' value of shipments in the 1976 ASM. Out of a total fixed sample size of 20,000 plants, all establishments with a value of shipments in the 1976 ASM of \$30.1 million or more were included in the PAE survey. Establishments in the 1977 ASM sample with less than \$30.1 million value of shipments in 1976 were assigned probabilities of selection ranging from 0.99 to 0.005.

The smaller establishments were arrayed by industry and selected systematically to assure a proportionate representation from each major industry group. Establishments chosen for the PAE survey were assigned weights equal to the reciprocal of the establishments' probability of selection. Individual establishment data were inflated by their sampling weights to develop industry, State, or SMSA estimates.

LIMITATIONS OF DATA

Reporting Problems

In the 1973 survey, two significant factors resulted in an understatement of the published data. They were (1) a misunderstanding of the intent of the questionnaire and (2) a number of respondents' failure to return the form at all. For more detailed information regarding those reporting problems, refer to *Pollution Abatement Costs and Expenditures 1974, MA-200(74)-1.*

Conceptual Problems

Changes-in-production processes (CIPP) capital expenditures. The survey respondent is instructed to report "the difference between expenditures on new plant and equipment that your establishment actually made for changes-in-production processes and what your establishment would have spent for comparable plant and equipment without pollution abatement features." Telephone conversations and interviews with survey respondents indicate that estimating such an incremental cost difference is very difficult in many instances. The net effect of this reporting problem is not known and hence, care should be exercised by the data user in interpreting the CIPP data.

Cost recovered through abatement activities. This question attempts to measure how much of pollution abatement costs are recovered through reuse or sale. Part of the instructions state: "Exclude the value of salable items such as scrap if the sale represents essentially an economic rather than pollution decision." This qualification makes it imperative that the data preparer be aware of the original motivation of the decision in order to adequately complete the form. The Bureau of the Census believes this is not always true.

CHART D.
Manufacturers' Pollution Abatement Capital Expenditures and Annual Operating Costs, by Form of Abatement and Major Industry Group: 1980

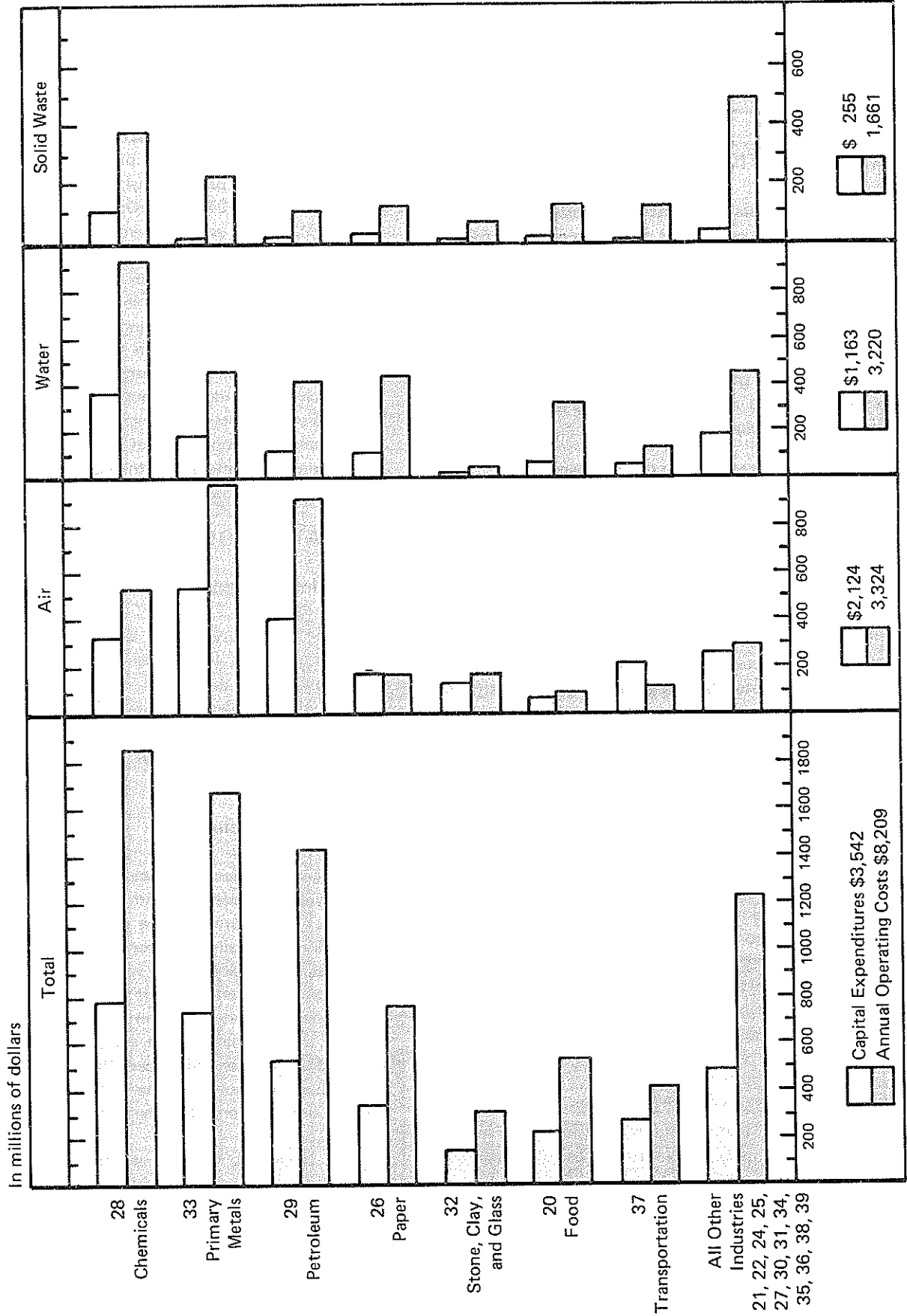
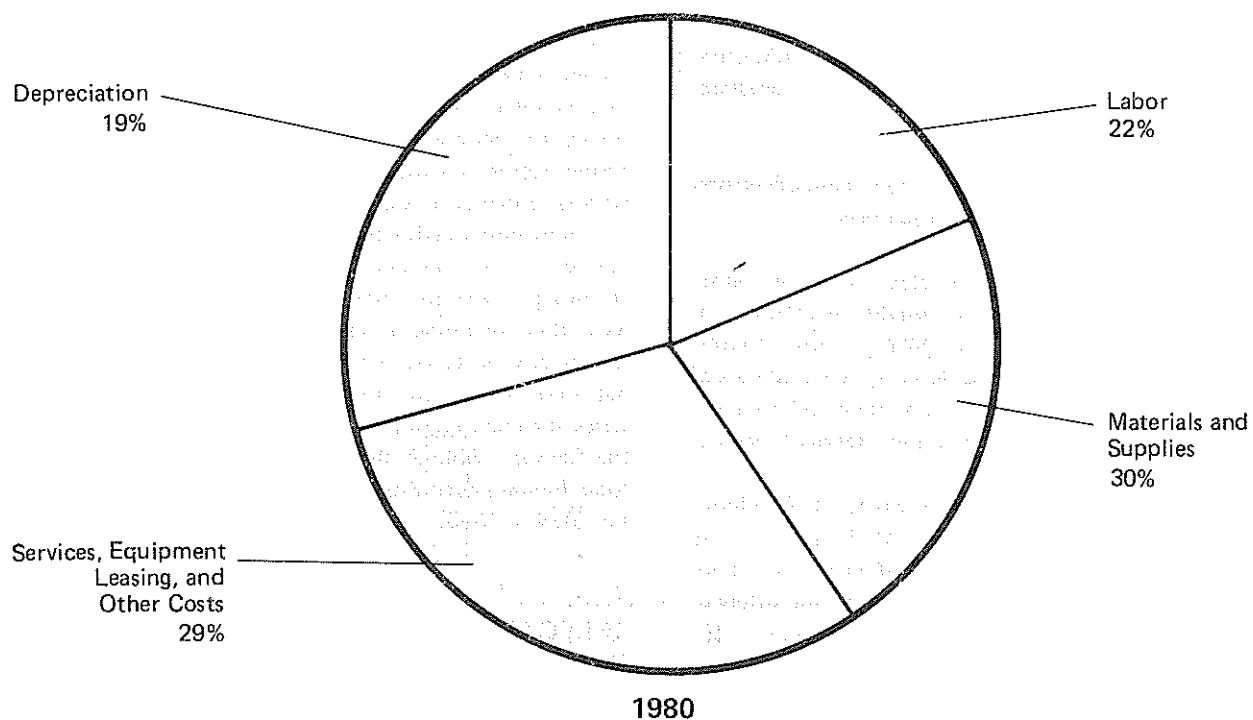
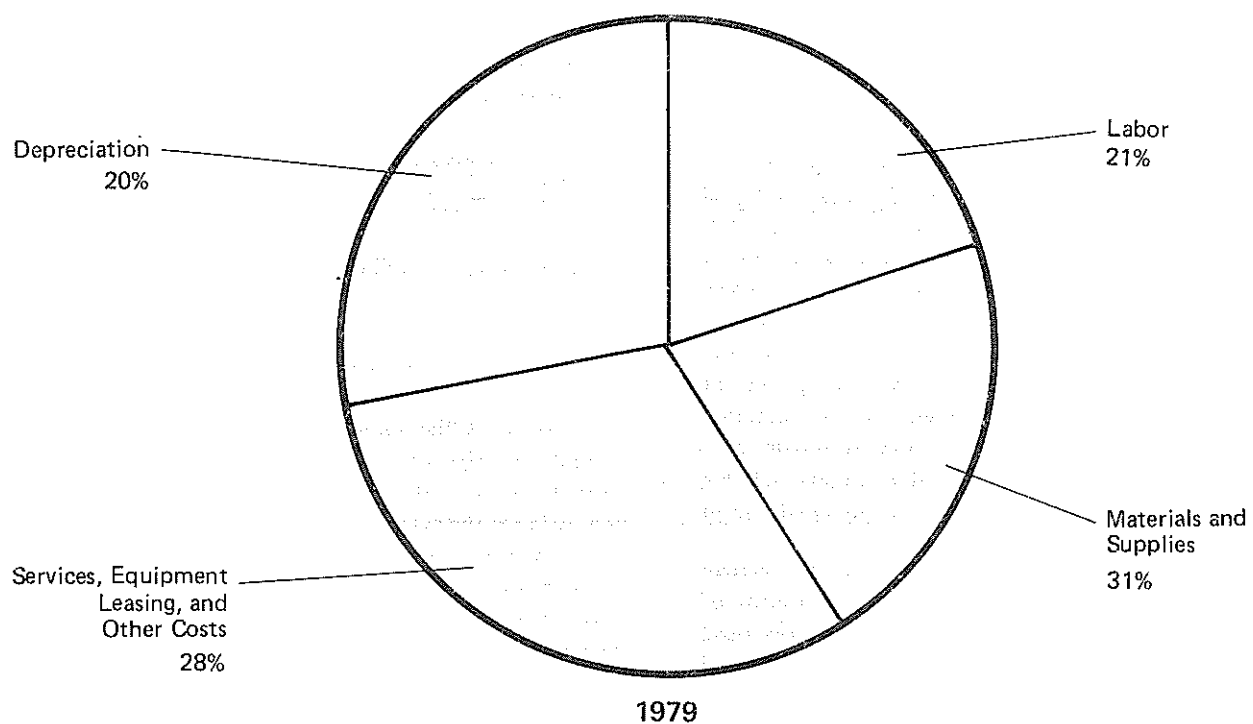


CHART E.
Manufacturers' Pollution Abatement Operating Costs, by Type
of Expense for All Industries: 1979 and 1980



Operating cost for pollution abatement. The survey respondent is asked to estimate separately for depreciation, labor, materials and supplies, services and equipment leasing, and other costs. In many cases, interviews with survey respondents have revealed that with the exception of depreciation, book records are not kept for each category and must be estimated from other information.

Sampling Variation

The particular sample selected for this survey is one of a large number of similar probability samples of the same size that could have been selected, by chance, using the same sample design. Each of the possible samples would yield somewhat different sets of results. The sampling errors—the differences between the estimate obtained and the results theoretically obtainable from a comparable complete canvass of the same target universe—are unknown. Guides to the potential size of the sampling errors, however, are provided by the estimated relative standard errors of the estimates. These are shown for a few key data items in the report. On the average, relative standard errors tend to be somewhat higher for detailed figures than for larger aggregates.

In conjunction with its associated estimates, the relative standard error (computed as the estimated standard error of estimate divided by the value of the estimate itself) may be used to define confidence intervals, ranges which could be expected to include comparable complete coverage values for specified percentages of all possible samples. The complete coverage value would be included in the range:

1. From one standard error below to one standard error above the derived estimate for about two-thirds of all samples.
2. From 2 standard errors below to 2 standard errors above the derived estimate for about 19 out of 20 of all possible samples.
3. From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable complete coverage results would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates shown would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, if an estimated total is shown as \$20.0 million with an associated relative standard error of 2 percent, the standard error is \$0.4 million (2 percent of \$20.0 million). Then there is approximately 67 percent confidence that the interval \$19.6 to \$20.4 million includes the complete coverage total, about 95 percent confidence that the interval \$19.2 to \$20.8 million includes the complete coverage total, and almost certain confidence that the interval \$18.8 to \$21.2 million includes the complete coverage total.

Processing Errors

In addition to the sampling errors, the estimates are subject to various response and operational errors: errors of collection, reporting, transcription, etc. These operational errors would also occur if a complete canvass were to be conducted under the same conditions as this survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected in the course of the Census Bureau's review of the data for reasonableness and consistency.

COMPARISON WITH BUREAU OF ECONOMIC ANALYSIS

The Bureau of the Census' estimates of pollution abatement capital expenditures are generally lower than those published by the Bureau of Economic Analysis (BEA) in the Survey of Current Business. In addition to normal sampling variations, another source of difference relates to the methodology employed for the two series.

The census data are based on a probability sample of 20,000 manufacturing establishments. All establishments which reported shipments in the 1976 ASM of \$30.1 million or more are included, while establishments with less than \$30.1 million are selected on a random sample basis. Each establishment is classified into a manufacturing industry based upon its primary activity and receives one report form.

The BEA estimates are based on questions incorporated in the BEA annual new plant and equipment survey which is mailed to approximately 10,000 companies. Each company receives one report form to supply data for its entire operation. The companies are designated either as manufacturing or nonmanufacturing based upon their primary activity as classified by 1967 Census of Enterprise Statistics. Currently, the BEA survey has about 4,000 companies classified in the manufacturing sector of which about 60 percent respond with data. Nonrespondents are estimated.

Companies classified as manufacturing include all establishments of the company, both manufacturing and nonmanufacturing. Likewise, companies classified as nonmanufacturing have their manufacturing establishments included in the nonmanufacturing totals. The net effect of the different definitions has been to include more capital expenditures in the BEA series for manufacturing than those estimated by the Bureau of the Census. Table A shows a comparison of BEA and Census total capital expenditures and pollution abatement expenditures for 1978 to 1980.

SELECTED INDUSTRIAL AIR POLLUTION CONTROL EQUIPMENT

Table B highlights annual manufacturing data for air pollution control equipment from 1973 to 1980. This information is

collected and published in the series MA-35J, *Selected Industrial Air Pollution Control Equipment*, by the Bureau of the Census. Data in this survey are collected for two types of manufactured air pollution equipment: particulate emissions collectors (e.g., electrostatic precipitators, wet scrubbers) and gaseous emission control devices (e.g., catalytic oxidation systems, gas absorbers). The published report is divided into two parts. The first presents data on quantity and value of new orders, shipments, and backlog of orders at the year-end. The second provides value of the equipment shipped by end use. As shown in the table, steam electric power plants are the largest end user of industrial air pollution control equipment (approximately 47 percent in 1980). In 1980, shipments increased for several manufacturers' end users.

RESEARCH AND DEVELOPMENT FOR POLLUTION ABATEMENT PURPOSES

Tables C and D show the amount of money spent from 1976 to 1980 and 1973 to 1980, respectively, on research and development (R&D) for the purpose of pollution control. These data are collected by the Bureau of the Census and published by the National Science Foundation. As shown in the tables, approximately 93 percent of the R&D pollution control expenditures are company sponsored, and the remaining 7 percent are federally sponsored. Over an 8-year period, the motor vehicle and equipment industry accounted for more than half of all R&D expenditures for pollution abatement. In 1980, total R&D expenditures for pollution control increased to \$1,183 million compared with \$1,237 million in 1979.

Table A. Total New Capital Expenditures (TNCE) and Pollution Abatement Expenditures for New Plant and Equipment—BEA and Census, by Industry Group: 1978 to 1980

(Millions of dollars)

Industry group	Data source	1978					1979					1980				
		TNCE	Pollution abatement expenditures				TNCE	Pollution abatement expenditures				TNCE	Pollution abatement expenditures			
			Total	Air	Water	Solid waste		Total	Air	Water	Solid waste		Total	Air	Water	Solid waste
All manufacturing ¹	BEA	79,720	4,440	2,260	1,860	320	98,680	4,820	2,550	1,840	430	115,810	5,520	2,880	2,090	550
	Census	54,730	3,316	1,872	1,263	181	60,931	3,602	2,089	1,262	251	(NA)	3,542	2,124	1,163	255
Durable goods.....	BEA	40,430	1,740	1,050	580	120	51,070	2,000	1,210	650	140	58,910	2,270	1,420	690	150
	Census	29,739	1,402	906	440	56	34,011	1,563	1,047	445	71	(NA)	1,540	1,070	393	77
Primary metals.....	BEA	5,740	790	560	210	20	6,760	920	640	260	20	7,710	980	670	260	40
	Census	4,692	793	564	220	9	5,221	825	590	228	7	(NA)	742	541	181	20
Electrical machinery.....	BEA	5,690	100	40	50	10	7,280	110	50	60	10	9,590	160	70	60	20
	Census	3,700	75	34	38	3	4,566	95	43	44	7	(NA)	82	45	28	9
Machinery, except electrical....	BEA	7,210	130	70	60	10	10,520	140	70	60	10	11,590	150	70	70	10
	Census	5,740	82	41	28	13	6,817	84	38	38	8	(NA)	75	34	35	6
Transportation equipment.....	BEA	12,020	280	130	110	50	15,320	410	190	160	60	18,160	520	310	170	40
	Census	5,834	140	71	58	11	6,854	190	120	60	10	(NA)	275	201	61	13
Stone, clay, and glass.....	BEA	3,100	230	160	60	10	3,940	210	170	30	10	3,820	250	210	30	10
	Census	2,531	127	95	29	4	2,572	149	113	26	10	(NA)	155	126	18	10
Other durables.....	BEA	6,680	200	90	90	10	7,270	220	110	90	10	8,050	210	90	90	20
	Census	7,242	186	100	69	17	7,981	220	142	49	29	(NA)	212	122	70	20
Nondurable goods.....	BEA	39,290	2,700	1,210	1,290	200	47,610	2,820	1,340	1,190	290	56,900	3,250	1,460	1,400	400
	Census	24,991	1,914	966	823	125	26,920	2,040	1,043	818	179	(NA)	2,002	1,054	771	177
Food, including beverages.....	BEA	5,970	340	130	180	30	6,620	270	80	160	30	7,390	270	80	180	20
	Census	4,805	185	71	100	14	5,034	193	60	118	15	(NA)	220	65	140	14
Textiles.....	BEA	1,380	40	20	20	(*)	1,500	60	30	20	(*)	1,620	70	50	20	(*)
	Census	1,356	60	43	15	2	1,329	39	22	15	2	(NA)	60	33	24	4
Paper.....	BEA	3,990	290	130	140	20	5,550	400	180	180	50	6,800	390	160	160	70
	Census	3,736	342	124	189	29	4,414	427	207	181	39	(NA)	340	198	111	31
Chemicals.....	BEA	8,460	730	310	370	50	10,780	630	290	280	60	12,600	730	320	320	100
	Census	7,956	842	383	393	66	7,829	785	320	367	97	(NA)	795	332	356	107
Petroleum.....	BEA	13,950	1,200	560	540	90	16,210	1,380	720	530	130	20,690	1,710	830	690	190
	Census	2,286	420	312	101	8	3,273	535	399	120	17	(NA)	534	404	115	15
Rubber.....	BEA	2,100	70	50	10	(*)	2,170	50	40	10	10	1,730	30	20	10	10
	Census	2,255	28	19	6	3	2,208	25	13	9	3	(NA)	22	13	7	2
Other nondurables.....	BEA	3,430	40	10	20	10	4,780	40	10	10	20	6,080	40	10	20	10
	Census	2,597	37	14	20	4	2,833	36	22	8	6	(NA)	33	11	18	4

Note: Totals may not agree with detail because of independent rounding. Census data for each year of pollution abatement have been adjusted to estimate pollution expenditures for establishments with less than 20 employees, see text. The BEA estimate have been revised for the entire time series. See source.

* Less than \$0.5 million. (NA) Not available.

¹Major industry group 23, Apparel and Other Textile Products, is excluded from all census figures.

Source: U.S. Bureau of the Census, Survey of Pollution Abatement Costs and Expenditures, 1978, 1979, and 1980, and the U.S. Bureau of Economic Analysis, Plant and Equipment Expenditures by Business for Pollution Abatement, 1973-1980, and Planned 1981, Survey of Current Business, June 1981.

Table B. Selected Industrial Air Pollution Control Equipment: 1973 to 1980

(Millions of dollars)

Air pollution control equipment	Value			Shipments by end use											
	New orders	Total shipments	Backlog of orders	Pulp and paper mill operations	Chemical and fertilizer production	Petroleum refining	Cement manufacturing	Foundries ¹	Iron and steel mills ¹	Primary metals smelting plants	Grain milling and handling	Coal mining and cleaning	Steam electric utility power plants ¹	Steam industrial power plants ²	Other end use industries
Total air pollution control equipment...1980..	1,172.7	807.7	1,518.1	29.4	61.0	17.6	32.0	20.1	39.1	21.9	6.0	6.3	375.7	60.0	138.4
1979..	710.6	738.4	988.1	31.8	59.0	14.1	19.1	11.1	33.1	16.8	7.0	7.9	376.6	45.5	116.4
1978..	741.5	612.0	916.2	27.5	41.9	12.4	15.9	13.4	39.4	9.2	6.8	287.0	38.0	115.3	
1977..	605.9	617.3	788.1	28.8	35.3	12.2	18.3	6.7	35.7	3.8	6.0	307.2	26.4	110.1	
1976..	571.6	571.4	735.0	23.0	30.5	(D)	18.4	(²)	58.8	(D)	(D)	8.2	(³)	105.6	
1975..	606.8	545.9	779.4	(D)	37.5	11.4	22.1	(²)	55.7	37.2	(D)	4.6	214.9	(³)	125.8
1974..	669.5	370.9	617.1	26.2	23.1	9.0	29.1	(²)	40.9	16.1	7.1	2.6	145.8	(³)	70.5
1973..	382.9	250.9	286.5	17.4	16.2	5.7	22.8	(²)	21.6	6.3	5.6	(D)	89.3	(³)	65.3
Particulates emission collectors.....1980..	587.7	644.1	837.2	28.3	39.6	(D)	(D)	(D)	38.5	21.4	6.0	5.3	(D)	45.9	106.9
1979..	467.1	570.9	742.5	30.4	37.2	(D)	(D)	(D)	32.3	16.5	(D)	6.8	(D)	40.7	96.3
1978..	544.6	497.0	684.9	25.8	29.7	(D)	(D)	(D)	35.4	(D)	(D)	(D)	(D)	(D)	92.7
1977..	460.0	484.1	650.7	27.6	20.5	3.4	(D)	(D)	31.4	13.0	(D)	(D)	246.2	13.3	96.7
1976..	485.1	493.3	642.7	22.4	23.4	9.5	18.4	(²)	58.1	24.7	6.4	8.2	240.4	(³)	81.7
1975..	529.2	470.2	694.0	22.8	22.1	9.0	22.1	(²)	54.7	36.7	5.1	4.6	182.3	(³)	104.8
1974..	635.1	341.5	585.0	(D)	(D)	(D)	(D)	(²)	(D)	(D)	7.1	2.6	(D)	(³)	62.0
1973..	368.2	242.0	274.7	(D)	14.3	5.7	22.8	(²)	(D)	(D)	(D)	(D)	(D)	(³)	59.0
Gaseous emission control devices.....1980..	553.0	163.5	661.0	(D)	(D)	(D)	(D)	-	(D)	(D)	-	(D)	(D)	(D)	21.8
1979..	209.8	167.5	236.7	(D)	(D)	1.8	-	(D)	(D)	(D)	-	-	(D)	4.3	14.9
1978..	158.3	83.1	199.8	(D)	(D)	2.3	-	(D)	0.6	(D)	-	-	(D)	2.7	12.1
1977..	113.0	99.3	116.4	(D)	(D)	(D)	(D)	(D)	(D)	(D)	-	(D)	53.5	9.1	13.1
1976..	72.5	65.4	86.7	1.6	7.1	(D)	-	(²)	0.7	(D)	-	-	(D)	(³)	11.4
1975..	68.5	64.1	82.2	(D)	15.4	2.4	-	(²)	1.0	(D)	-	-	(D)	(³)	9.3
1974..	34.4	29.4	32.1	(D)	(D)	(D)	(D)	(²)	(D)	(D)	-	-	(D)	(³)	8.5
1973..	11.3	8.8	9.3	(D)	1.9	-	-	(²)	(D)	(D)	(D)	(D)	(D)	(³)	6.3

- Represents zero. (D) Withheld to avoid disclosing figures for individual companies. ¹ Revised by 5 percent or more from previously published CIR figures.

¹ Appeared separately for first time in 1977.

² Combined with iron and steel mills in 1976 and earlier years.

³ Combined with steam electric utility powers in 1976 and earlier years.

Source: Current Industrial Reports, Selected Industrial Air Pollution Control Equipment, (MA-35J), 1973 to 1980.

Table C. Industrial Research and Development Expenditures for Pollution Abatement, by Type: 1976 to 1980

(Millions of dollars)

Type of pollution abatement	1976			1977			1978			1979			1980 ^P		
	Total	Federal	Company	Total	Federal	Company	Total	Federal	Company	Total	Federal	Company	Total	Federal	Company
Total.....	754	51	703	901	56	845	1,067	75	992	1,237	98	1,139	1,183	117	1,066
Air.....	569	26	543	676	22	654	(¹)	(¹)	(¹)	954	30	923	(¹)	(¹)	(¹)
Water.....	84	7	77	97	7	90	(¹)	(¹)	(¹)	120	13	107	(¹)	(¹)	(¹)
Solid waste.....	21	1	20	28	7	21	(¹)	(¹)	(¹)	43	33	11	(¹)	(¹)	(¹)
All other.....	80	17	63	100	20	80	(¹)	(¹)	(¹)	120	27	98	(¹)	(¹)	(¹)

^P Preliminary.

¹ Category not available for reporting purposes.

Source: National Science Foundation/Bureau of the Census Survey of Industrial Research and Development, 1976 to 1980.

Table D. Total Industrial Research and Development Expenditures for Pollution Abatement, by Source of Funds and Industry: 1973 to 1980

(Millions of dollars)

Source of funds and industry	1973	1974	1975	1976	1977	1978	1979	1980 ^P
Total.....	603	657	651	754	901	1,067	1,237	1,183
Source of funds:								
Federal funds.....	35	51	44	51	56	75	98	117
Company funds.....	568	606	607	703	845	992	1,139	1,066
Industry:								
Electrical equipment.....	13	16	17	18	20	19	33	39
Petroleum refining.....	51	61	66	63	61	72	82	97
Aircraft and missiles.....	25	34	37	48	57	64	64	38
Chemical and allied products.....	55	65	71	72	83	81	149	184
Motor vehicles and equipment.....	380	384	347	413	487	605	(¹)	(¹)
Other manufacturing.....	44	70	79	93	100	107	109	117
Nonmanufacturing.....	35	27	34	52	93	119	113	101

^P Preliminary.

¹ Not separately available but included in higher level totals.

Source: National Science Foundation/Bureau of the Census, Survey of Industrial Research and Development, 1973 to 1980.

Table 1A. Pollution Abatement Capital Expenditures and Operating Costs, by Form of Abatement and Major Industry Group: 1973 to 1980

(In millions of dollars, except percents)

SIC code	Industry	Selected data from the Annual Survey of Manufactures (ASM)		Pollution abatement capital expenditures (PACE)				Pollution abatement gross annual costs (GAC) including payments to government units				Percent change ¹		Standard error of estimates (percent)		
		Total value of shipments	Total new capital expenditures	Total	Air	Water	Solid waste	Total	Air	Water	Solid waste	PACE	GAC	PACE	GAC	
All industries ²	1980..	(NA)	(NA)	3,542.2	2,124.1	1,163.4	254.7	8,209.4	3,323.5	3,219.5	1,666.1	-2	10	3	1	
	1980..	(NA)	(NA)	3,502.9	2,105.5	1,146.5	251.0	8,141.8	3,297.8	3,193.1	1,650.6	-2	10	3	1	
	1979..	1,726,913.2	61,452.9	3,602.2	2,088.7	1,262.2	251.0	7,461.5	3,085.5	3,040.1	1,335.8	9	18	1	1	
	1978..	1,643,955.9	58,163.9	3,564.5	2,071.9	1,245.7	246.9	7,399.9	3,061.8	3,015.6	1,322.5	9	18	1	1	
	1978..	1,523,429.9	55,243.9	3,315.9	1,871.5	1,262.9	181.2	6,327.5	2,546.6	2,550.4	1,230.3	-6	16	1	2	
	1977..	1,450,305.3	52,260.7	3,279.3	1,853.6	1,246.5	178.9	6,275.7	2,527.4	2,529.9	1,218.2	-6	16	1	2	
	1977..	1,358,526.4	47,459.0	3,522.6	1,667.9	1,674.1	159.9	5,470.2	2,259.3	2,221.6	989.7	-1	21	1	1	
	1976..	1,293,265.6	44,919.0	3,483.5	1,652.0	1,695.1	157.7	5,425.0	2,240.4	2,203.4	981.5	-1	20	1	1	
	1976..	1,185,695.3	40,669.9	3,531.7	1,797.8	1,599.2	134.8	4,539.2	1,888.2	1,824.0	827.1	-3	24	2	1	
	1975..	1,039,377.4	37,262.1	3,637.6	2,235.7	1,280.1	121.8	3,673.1	1,508.1	1,496.6	669.7	17	18	1	1	
	1974..	1,017,846.9	35,698.7	3,101.1	1,947.5	1,008.8	144.7	3,102.8	1,210.7	1,261.4	630.7	32	27	1	1	
	1973..	875,443.2	26,972.9	2,353.7	1,417.5	827.8	108.2	2,445.2	960.5	993.3	491.7	(X)	(X)	2	1	
	20 Food and kindred products	1980..	(NA)	(NA)	219.6	65.1	140.3	14.2	531.3	83.5	321.5	126.4	14	3	4	7
		1980..	(NA)	(NA)	208.2	61.7	133.0	13.5	519.4	81.6	314.3	123.6	14	3	4	7
		1979..	235,974.7	5,034.2	192.8	59.7	117.6	15.2	515.8	93.1	304.8	118.0	5	22	5	6
1979..		223,501.2	4,635.5	182.7	57.9	111.1	15.6	504.2	91.0	297.9	115.3	5	22	5	6	
1978..		216,071.2	4,804.8	184.6	71.4	99.6	15.6	421.5	71.0	248.8	101.7	-5	15	5	4	
1978..		204,619.4	4,425.2	175.0	67.7	94.4	12.9	412.0	69.4	243.2	99.4	-5	15	5	4	
1977..		192,911.6	4,214.9	194.0	71.6	109.3	13.2	365.3	58.8	216.5	90.2	-7	6	4	3	
1977..		182,714.4	3,881.1	183.9	67.9	103.6	12.5	357.1	56.2	211.6	89.5	-11	3	4	3	
1976..		180,929.7	3,816.8	207.5	102.5	97.6	7.4	345.9	57.7	187.5	100.5	-15	18	13	3	
1975..		172,157.6	3,433.5	180.9	75.6	93.9	11.4	294.2	53.2	153.7	87.7	-9	9	4	3	
1974..		161,961.4	3,017.7	199.2	73.4	111.7	14.3	268.9	48.8	143.5	76.8	1	32	5	2	
1973..		135,582.5	2,412.0	196.7	77.6	104.8	14.3	203.1	39.1	110.4	53.6	(X)	(X)	9	3	
21 Tobacco products		1980..	(NA)	(NA)	(D)	(D)	(D)	(D)	16.0	7.4	4.8	3.8	(X)	4	(X)	2
		1980..	(NA)	(NA)	(D)	(D)	(D)	(D)	14.8	6.8	4.4	3.5	(X)	3	(X)	2
		1979..	10,595.0	236.9	(D)	(D)	(D)	(D)	15.4	7.5	4.6	3.2	(X)	9	(X)	4
	1979..	10,558.6	235.7	(D)	(D)	(D)	(D)	14.3	7.0	4.3	3.0	(X)	9	(X)	4	
	1978..	9,950.7	253.9	(D)	(D)	(D)	(D)	14.2	6.5	4.9	2.9	(X)	17	(X)	2	
	1978..	9,920.8	252.6	(D)	(D)	(D)	(D)	13.2	6.0	4.6	2.7	(X)	18	(X)	2	
	1977..	9,050.6	181.5	4.9	2.3	0.7	1.8	12.1	5.2	4.0	2.8	-40	6	1	3	
	1977..	9,019.5	180.6	4.8	2.3	0.7	1.8	11.2	4.8	3.7	2.6	-41	2	1	3	
	1976..	8,786.1	129.7	8.1	7.8	0.2	0.1	11.4	5.4	3.0	3.1	-34	23	3	7	
	1975..	8,059.9	144.9	12.2	(D)	0.1	(D)	9.3	4.7	2.3	2.2	13	15	2	9	
	1974..	7,139.9	185.4	10.8	(D)	(Z)	(D)	8.1	4.1	2.1	2.0	100	37	1	3	
	1973..	6,340.7	180.4	5.4	4.7	(Z)	0.6	5.9	2.6	1.7	1.6	(X)	(X)	3	5	
	22 Textile mill products	1980..	(NA)	(NA)	59.5	32.5	23.6	3.5	116.7	16.7	59.8	40.2	52	14	10	7
		1980..	(NA)	(NA)	59.5	32.5	23.6	3.5	115.8	16.6	59.3	39.9	52	14	10	7
		1979..	45,142.2	1,329.4	39.2	21.9	15.2	2.1	102.5	19.1	60.7	22.7	-34	10	10	4
1979..		44,144.2	1,304.5	39.2	21.9	15.2	2.1	101.7	19.0	60.2	22.5	-34	10	10	4	
1978..		42,280.8	1,356.1	59.7	42.7	15.4	1.6	93.2	19.1	52.0	22.1	63	23	10	4	
1978..		41,350.6	1,330.3	59.7	42.7	15.4	1.6	92.5	19.0	51.6	21.9	63	23	10	4	
1977..		40,550.5	1,223.5	36.7	20.7	14.7	1.4	75.6	11.0	46.8	17.9	-31	16	7	4	
1977..		39,654.0	1,200.6	36.7	20.7	14.7	1.4	75.0	10.9	46.4	17.8	-31	15	7	4	
1976..		36,389.2	1,087.4	53.3	9.2	42.6	1.6	65.3	9.2	41.8	14.3	24	29	38	6	
1975..		31,063.6	996.7	43.0	19.7	22.2	1.1	50.7	9.4	29.4	12.0	34	-6	10	5	
1974..		32,812.3	1,171.7	32.0	12.7	17.7	1.7	54.0	9.4	31.3	13.3	10	39	7	6	
1973..		31,072.7	1,120.9	29.2	10.3	17.7	1.2	38.8	6.3	23.5	9.0	(X)	(X)	8	7	
24 Lumber and wood products		1980..	(NA)	(NA)	83.1	56.9	15.9	10.3	133.0	40.8	34.0	58.1	-13	12	12	8
		1980..	(NA)	(NA)	81.5	55.8	15.6	10.1	129.1	39.6	32.9	56.4	-13	12	12	8
		1979..	49,826.3	2,067.8	95.5	68.9	12.5	14.1	119.1	41.5	26.3	51.3	11	27	1	5
	1979..	42,761.3	1,661.5	93.6	67.5	12.3	13.8	115.4	40.2	25.5	49.7	11	27	1	5	
	1978..	46,522.6	1,899.4	86.2	47.8	26.1	12.2	93.6	28.6	20.1	45.1	41	24	11	5	
	1978..	39,916.4	1,527.1	84.5	46.9	25.6	12.0	90.7	27.7	19.4	43.7	41	24	11	5	
	1977..	39,919.4	1,562.6	61.1	34.6	19.5	7.0	75.7	21.0	19.8	35.0	20	-7	10	5	
	1977..	34,259.1	1,255.6	59.9	33.9	19.1	6.9	73.4	20.4	19.2	33.9	17	-10	10	5	
	1976..	31,239.4	1,232.1	51.1	29.5	9.2	12.5	81.3	26.6	21.1	33.6	-32	15	17	10	
	1975..	25,094.5	1,264.0	75.1	46.4	7.7	21.0	70.5	22.7	19.6	28.3	-7	10	11	8	
	1974..	26,817.6	1,357.2	81.1	58.4	7.6	15.0	64.2	19.5	14.0	30.8	29	4	13	8	
	1973..	27,980.6	953.3	62.7	41.5	11.7	9.6	61.6	14.9	18.5	28.2	(X)	(X)	10	12	
	25 Furniture and fixtures	1980..	(NA)	(NA)	12.8	9.4	1.4	2.0	32.5	12.4	5.0	15.1	-43	9	10	5
		1980..	(NA)	(NA)	12.8	9.4	1.4	2.0	31.9	12.2	4.9	14.8	-43	9	10	5
		1979..	21,067.0	525.6	22.4	16.8	2.1	3.5	29.9	12.1	4.6	13.1	100	11	13	7
1979..		19,448.2	487.1	22.4	16.8	2.1	3.5	29.3	11.9	4.5	12.9	100	11	13	7	
1978..		19,565.9	520.8	11.2	9.4	1.1	0.6	26.9	9.3	4.1	13.7	-3	10	13	7	
1978..		18,059.3	482.8	11.2	9.4	1.1	0.6	26.4	9.1	4.0	13.4	-3	10	13	7	
1977..		16,978.0	388.7	11.5	9.7	1.3	0.5	24.4	10.5	3.8	10.2	-59	13	12	7	
1977..		15,673.4	360.2	11.5	9.7	1.3	0.5	23.9	10.3	3.7	10.0	-59	11	12	7	
1976..		14,232.0	295.3	27.9	24.5	2.2	1.1	21.6	8.2	3.2	10.1	15	11	44	9	
1975..		12,372.8	251.6	24.2	22.6	0.4	1.2	19.5	6.9	3.1	9.5	-15	2	19	9	
1974..		13,197.3	350.9	28.5	23.7	1.8	2.9	19.1	6.5	3.1	9.6	45	45	16	9	
1973..		12,609.5	343.8	19.6	16.9	1.2	1.5	13.2	5.0	2.5	5.7	(X)	(X)	14	8	
26 Paper and allied products		1980..	(NA)	(NA)	339.9	197.6	111.3	31.0	762.9	196.4	437.1	129.3	-20	9	2	4
		1980..	(NA)	(NA)	339.9	197.4	111.2	31.0	762.1	196.2	436.7	129.1	-20	9	2	4
		1979..	65,055.6	4,413.6	426.8	207.2	180.8	38.8	698.9	176.8	400.9	121.2	25	12	1	2
	1979..	63,698.8	4,250.2	426.4	207.0	180.6	38.8	698.2	176.6	400.5	121.1	25	12	1	2	
	1978..	57,000.0	3,736.3	341.9	124.0	189.2	28.7	622.6	158.6	357.9	105.7	-20	18	1	2	
	1978..															

Table 1A. Pollution Abatement Capital Expenditures and Operating Costs, by Form of Abatement and Major Industry Group: 1973 to 1980—Continued

(In millions of dollars, except percents)

SIC code	Industry	Selected data from the Annual Survey of Manufacturers (ASM)		Pollution abatement capital expenditures (PACE)				Pollution abatement gross annual costs (GAC) including payments to government units				Percent change ¹		Standard error of estimates (percent)		
		Total value of shipments	Total new capital expenditures	Total	Air	Water	Solid waste	Total	Air	Water	Solid waste	PACE	GAC	PACE	GAC	
27	Printing and publishing.....	¹ 1980..	(NA)	(NA)	12.8	9.0	1.7	2.1	51.5	13.5	10.0	28.0	-46	2	11	6
		¹ 1980..	(NA)	(NA)	12.8	9.0	1.7	2.1	50.6	13.3	9.8	27.5	-46	2	11	6
		¹ 1979..	^a 62,559.1	^c 2,465.3	23.8	19.4	1.9	2.5	50.4	9.7	9.6	31.2	95	33	7	9
		¹ 1979..	^e 54,355.3	^c 2,144.2	23.8	19.4	1.9	2.5	49.5	9.5	9.4	30.6	95	33	7	9
		¹ 1978..	^a 56,064.1	^c 2,208.4	12.2	7.4	3.6	1.1	37.9	8.0	7.0	22.9	65	24	11	6
		¹ 1978..	^e 48,719.7	^c 1,921.3	12.2	7.4	3.6	1.1	37.3	7.9	6.9	22.5	63	24	11	6
		¹ 1977..	^a 49,716.2	^c 1,597.8	7.5	3.1	2.5	1.9	30.6	7.1	6.4	17.1	70	9	11	6
		¹ 1977..	^e 43,196.6	^c 1,389.7	7.5	3.1	2.5	1.9	30.1	7.0	6.3	16.8	70	9	10	7
		¹ 1976..	^a 42,837.8	^c 1,261.2	4.4	2.6	1.1	0.7	27.5	7.5	6.6	13.3	-69	17	25	6
		¹ 1975..	^a 38,125.1	^c 1,174.6	14.3	12.8	0.9	0.6	23.5	7.0	5.0	11.5	-48	-11	35	5
		¹ 1974..	^a 35,822.4	^c 1,140.9	27.4	10.3	3.7	13.4	26.3	5.9	7.4	13.0	281	44	37	8
		¹ 1973..	^a 32,854.7	^c 1,083.5	7.2	5.0	1.1	1.1	18.3	5.2	4.1	9.1	(X)	(X)	8	7
28	Chemical and allied products.....	¹ 1980..	(NA)	(NA)	794.8	331.7	356.3	106.7	1,864.8	543.8	949.5	371.4	1	11	3	1
		¹ 1980..	(NA)	(NA)	780.7	325.9	350.0	104.8	1,851.8	539.9	942.9	368.8	1	11	3	1
		¹ 1979..	^a 147,673.7	^c 7,828.6	784.8	320.3	367.2	97.3	1,679.2	488.7	901.5	289.0	-7	13	1	9
		¹ 1979..	^e 141,106.6	^c 7,488.9	770.9	314.6	360.7	95.6	1,667.5	485.3	895.2	287.0	-7	13	1	9
		¹ 1978..	^a 129,849.9	^c 7,955.5	842.4	383.3	392.9	66.3	1,483.3	400.8	799.6	282.1	-16	19	3	2
		¹ 1978..	^e 124,136.5	^c 7,716.8	827.5	376.3	385.9	65.1	1,473.0	398.8	794.1	280.1	-16	19	3	2
		¹ 1977..	^a 118,153.6	^c 8,198.9	1,000.2	346.0	603.8	50.5	1,247.0	337.8	690.0	219.1	6	27	1	1
		¹ 1977..	^e 112,899.3	^c 7,843.1	982.5	339.9	593.1	49.6	1,238.3	335.5	685.2	217.6	4	26	1	1
		¹ 1976..	^a 104,138.6	^c 7,122.4	942.0	319.8	577.4	44.7	983.5	295.6	514.7	173.2	21	22	3	2
		¹ 1975..	^a 89,721.2	^c 6,353.1	780.2	359.5	385.7	35.0	807.4	249.9	430.9	126.7	45	26	2	2
		¹ 1974..	^a 83,744.9	^c 5,071.9	539.2	250.6	264.4	24.1	643.3	203.8	335.6	104.0	36	28	2	1
		¹ 1973..	^a 65,008.0	^c 3,186.9	395.9	164.4	214.6	16.8	502.3	174.1	247.6	80.2	(X)	(X)	4	2
29	Petroleum and coal products.....	¹ 1980..	(NA)	(NA)	533.6	403.5	114.6	15.4	1,436.4	921.9	412.2	102.3	-1	21	3	1
		¹ 1980..	(NA)	(NA)	531.9	402.3	114.2	15.4	1,418.0	910.1	406.9	101.0	-1	21	3	1
		¹ 1979..	^a 148,448.6	^c 3,272.9	535.4	398.6	119.6	17.1	1,189.1	760.5	375.6	53.0	27	18	8	7
		¹ 1979..	^e 145,787.5	^c 3,203.4	534.3	397.8	119.4	17.1	1,173.8	750.7	370.8	52.3	27	18	8	7
		¹ 1978..	^a 103,871.1	^c 2,286.1	420.1	311.8	100.7	7.6	1,010.4	644.7	308.1	57.7	14	5	2	1
		¹ 1978..	^e 102,001.4	^c 2,238.1	419.3	311.2	100.5	7.6	997.4	636.4	304.1	57.0	14	5	2	1
		¹ 1977..	^a 97,452.7	^c 2,261.3	369.2	268.0	168.0	5.3	960.3	609.1	293.1	58.1	-16	24	1	1
		¹ 1977..	^e 95,712.3	^c 2,133.6	368.5	167.7	195.6	5.3	948.0	601.3	289.3	57.4	-17	22	1	1
		¹ 1976..	^a 82,347.0	^c 2,836.8	441.4	236.5	199.8	5.2	774.8	466.1	263.3	45.3	-21	38	1	1
		¹ 1975..	^a 69,484.6	^c 2,417.8	555.7	398.2	155.7	1.7	563.1	339.4	192.1	31.7	20	34	1	1
		¹ 1974..	^a 58,875.8	^c 1,845.1	462.3	341.3	119.7	1.3	420.1	238.3	153.3	28.5	44	24	1	5
		¹ 1973..	^a 34,899.0	^c 1,107.0	321.8	222.5	96.1	3.2	337.8	192.5	125.4	19.9	(X)	(X)	3	5
30	Rubber, miscellaneous plastics products...	¹ 1980..	(NA)	(NA)	21.8	12.7	6.9	2.3	109.8	30.9	28.0	51.0	-13	-3	13	4
		¹ 1980..	(NA)	(NA)	21.7	12.6	6.9	2.3	108.2	30.4	27.6	50.2	-14	-3	13	4
		¹ 1979..	^a 46,847.9	^c 2,208.2	25.2	13.0	9.3	2.9	113.4	32.7	30.0	50.7	-9	32	9	4
		¹ 1979..	^e 44,433.8	^c 2,082.2	25.1	12.9	9.3	2.9	111.7	32.2	29.6	49.9	-9	32	9	4
		¹ 1978..	^a 43,195.8	^c 2,254.8	27.8	18.8	5.5	3.4	86.2	18.0	24.3	44.0	-24	15	6	3
		¹ 1978..	^e 40,949.6	^c 2,126.3	27.7	18.7	5.5	3.4	84.9	17.7	23.9	43.3	-24	15	6	3
		¹ 1977..	^a 39,552.8	^c 1,645.3	36.7	17.4	13.8	5.4	74.9	20.1	19.2	35.6	-2	-7	6	3
		¹ 1977..	^e 37,497.7	^c 1,551.4	36.6	17.4	13.8	5.4	73.8	19.8	18.9	35.1	-2	-8	6	3
		¹ 1976..	^a 31,765.2	^c 1,316.9	37.4	24.2	10.0	3.1	80.3	22.3	24.0	34.0	17	24	15	5
		¹ 1975..	^a 27,191.2	^c 1,139.9	31.9	22.2	6.6	3.1	64.8	20.7	18.4	25.7	-16	10	17	5
		¹ 1974..	^a 27,902.2	^c 1,457.0	37.9	22.2	13.5	2.2	58.8	15.7	15.1	28.2	57	38	7	4
		¹ 1973..	^a 24,383.6	^c 1,305.0	24.2	13.5	7.3	3.3	42.6	12.2	10.1	20.4	(X)	(X)	6	4
31	Leather and leather products.....	¹ 1980..	(NA)	(NA)	(S)	(S)	(S)	(S)	26.8	1.1	14.8	10.9	(X)	17	(X)	19
		¹ 1980..	(NA)	(NA)	(S)	(S)	(S)	(S)	26.3	1.1	14.4	10.7	(X)	17	(X)	19
		¹ 1979..	^a 9,002.6	^c 130.3	(D)	(D)	(D)	(D)	22.9	1.3	14.9	6.7	(X)	16	(X)	16
		¹ 1979..	^e 8,594.2	^c 126.0	(D)	(D)	(D)	(D)	22.5	1.3	14.6	6.6	(X)	16	(X)	16
		¹ 1978..	^a 8,224.7	^c 135.1	(S)	(S)	(S)	(S)	19.7	1.4	11.5	6.7	(X)	25	(X)	16
		¹ 1978..	^e 7,854.6	^c 130.6	(S)	(S)	(S)	(S)	19.3	1.4	11.3	6.6	(X)	25	(X)	16
		¹ 1977..	^a 7,607.4	^c 96.2	11.5	1.8	9.4	0.4	15.7	1.1	9.3	5.3	-34	43	48	16
		¹ 1977..	^e 7,262.3	^c 93.0	11.4	1.8	9.3	0.4	15.4	1.1	9.1	5.2	-34	40	48	16
		¹ 1976..	^a 7,176.0	^c 89.4	17.4	7.3	9.6	0.5	11.0	1.1	6.7	3.3	149	18	34	17
		¹ 1975..	^a 6,323.0	^c 77.5	7.0	(D)	5.1	(D)	9.3	1.2	4.9	3.2	119	15	23	17
		¹ 1974..	^a 6,176.5	^c 76.1	3.2	(D)	1.8	(D)	8.1	1.0	4.2	2.9	-26	33	23	10
		¹ 1973..	^a 6,022.5	^c 80.9	4.3	1.8	1.9	0.6	6.1	0.9	3.0	2.3	(X)	(X)	28	11
32	Stone, clay, glass products.....	¹ 1980..	(NA)	(NA)	154.9	126.3	18.4	10.3	307.1	185.4	49.1	72.7	4	3	12	3
		¹ 1980..	(NA)	(NA)	151.0	123.1	17.9	10.0	301.7	182.1	48.2	71.4	4	3	12	3
		¹ 1979..	^a 45,832.5	^c 2,571.7	149.4	113.1	26.1	10.3	298.9	192.4	45.9	61.6	18	17	9	10
		¹ 1979..	^e 40,118.5	^c 2,250.9	145.6	110.2	25.4	10.0	293.6	188.0	45.1	60.5	18	17	9	10
		¹ 1978..	^a 41,719.3	^c 2,531.2	127.0	94.5	28.7	3.8	255.6	166.6	33.8	55.2	-7	17	7	4
		¹ 1978..	^e 36,504.4	^c 2,216.8	123.8	92.1	28.0	3.7	251.1	163.7	33.2	54.2	-7	17	7	4
		¹ 1977..	^a 35,476.6	^c 1,881.4	136.9	88.0	40.1	8.8	218.4	144.3	28.5	45.3	31	14	17	4
		¹ 1977..	^e 31,053.7	^c 1,646.7	133.4	85.8	39.1	8.6	214.5	141.7	28.0	44.5	27	12	17	4
		¹ 1976..	^a 30,635.2	^c 1,504.0	104.7	82.2	18.9	3.6	192.1	122.8	30.3	39.0	-40	12	13	5
		¹ 1975..	^a 27,073.9	^c 1,581.2	173.5	152.7	16.7	4.1	171.8	109.7	28.3	33.8	-17	12	11	6
		¹ 1974..	^a 26,338.1	^c 1,587.5	208.8	185.8	13.1	10.0	152.9	98.7	24.7					

Table 1A. Pollution Abatement Capital Expenditures and Operating Costs, by Form of Abatement and Major Industry Group: 1973 to 1980—Continued

(In millions of dollars, except percents)

SIC code	Industry	Selected data from the Annual Survey of Manufacturers (ASM)		Pollution abatement capital expenditures (PACE)				Pollution abatement gross annual costs (GAC) including payments to government units				Percent change ¹		Standard error of estimates (percent)		
		Total value of shipments	Total new capital expenditures	Total	Air	Water	Solid waste	Total	Air	Water	Solid waste	PACE	GAC	PACE	GAC	
34	Fabricated metal products.....	1980..	(NA)	(NA)	76.6	37.6	34.9	4.2	221.6	49.5	89.3	82.8	16	-1	6	4
		1980..	(NA)	(NA)	76.4	37.5	34.8	4.2	219.2	49.0	88.2	81.9	16	-1	6	4
		1979..	113,597.2	3,339.6	66.3	36.8	24.6	4.9	223.3	57.6	100.8	64.9	7	31	7	1
		1979..	105,965.8	3,096.3	66.1	36.7	24.5	4.9	220.9	57.0	99.7	64.2	7	31	7	1
		1978..	101,336.0	3,189.1	61.8	33.2	26.3	2.3	170.6	42.6	74.6	53.4	-20	13	8	15
		1978..	94,546.5	2,956.3	61.6	33.1	26.2	2.3	168.7	42.1	73.8	52.8	-20	13	8	15
		1977..	90,023.5	2,606.1	76.9	32.6	39.3	5.0	150.8	40.7	66.8	43.3	5	21	7	3
		1977..	83,975.8	2,416.2	76.7	32.5	39.2	5.0	149.2	40.3	66.1	42.8	5	20	7	3
		1976..	77,507.1	2,223.2	72.9	35.5	34.1	3.4	124.3	35.4	52.7	36.1	-6	14	9	4
		1975..	68,738.7	2,074.2	77.5	46.9	29.0	1.7	109.5	32.6	45.7	31.3	-14	-1	9	4
		1974..	67,569.9	1,981.2	90.5	56.4	28.2	5.9	110.1	34.5	44.9	30.7	42	30	12	4
		1973..	58,556.3	1,734.7	63.7	39.6	21.5	2.7	84.8	27.0	35.9	22.2	(X)	(X)	7	4
35	Machinery, except electrical.....	1980..	(NA)	(NA)	74.5	34.0	34.9	5.6	211.1	49.1	74.7	87.3	-12	3	17	1
		1980..	(NA)	(NA)	74.5	34.0	34.9	5.6	206.4	48.0	73.0	85.3	-12	3	17	1
		1979..	166,470.2	6,817.7	84.5	38.5	38.2	7.8	204.8	51.2	70.6	83.0	4	26	2	1
		1979..	156,131.1	6,315.8	84.5	38.5	38.2	7.8	200.2	50.1	69.0	81.1	4	26	2	1
		1978..	143,169.3	5,739.7	81.5	41.4	27.8	12.6	162.5	42.0	55.7	64.6	-10	17	6	12
		1978..	134,292.8	5,315.0	81.5	41.4	27.8	12.6	158.8	41.0	54.4	63.1	-10	17	6	12
		1977..	122,187.7	4,402.4	90.2	42.3	42.4	5.5	138.5	33.9	50.9	53.8	30	17	3	2
		1977..	114,598.9	4,078.7	90.2	42.3	42.4	5.5	135.4	33.1	49.8	52.6	30	15	3	2
		1976..	105,525.2	3,428.3	69.4	44.8	21.8	2.9	117.9	30.8	37.7	49.6	15	20	12	4
		1975..	95,752.5	3,354.7	60.5	37.5	20.8	2.3	98.0	28.4	33.7	36.0	-11	7	5	2
		1974..	92,487.2	3,312.2	67.7	41.9	17.6	8.1	91.7	24.3	29.1	38.2	20	26	2	1
		1973..	78,092.7	2,320.7	56.3	36.6	15.6	4.1	72.5	19.7	23.0	29.9	(X)	(X)	4	1
36	Electric, electronic equipment.....	1980..	(NA)	(NA)	82.2	45.3	28.2	8.7	205.2	45.3	87.9	72.0	-13	13	3	1
		1980..	(NA)	(NA)	79.0	43.5	27.1	8.4	205.0	45.2	87.8	71.9	-13	13	3	1
		1979..	116,031.9	4,565.7	94.6	43.5	43.7	7.2	182.4	46.7	82.8	52.8	26	23	5	1
		1979..	113,400.8	4,467.3	90.9	41.8	42.0	7.1	182.3	46.7	82.8	52.8	26	23	5	1
		1978..	100,530.1	3,699.7	75.2	34.3	37.5	3.4	148.7	30.7	71.7	46.1	13	16	5	2
		1978..	98,217.9	3,618.3	72.2	32.9	36.0	3.3	148.6	30.7	71.7	46.1	13	16	5	2
		1977..	88,433.1	2,866.5	66.4	23.9	37.5	5.1	128.2	28.0	63.3	37.1	14	17	4	2
		1977..	86,427.8	2,804.7	63.8	23.0	36.0	4.9	128.1	28.0	63.2	37.1	9	17	4	2
		1976..	73,867.1	2,240.1	58.4	23.0	31.3	4.1	109.9	26.8	50.8	32.3	12	13	5	2
		1975..	64,213.9	1,876.8	52.3	22.7	26.2	3.3	97.3	27.6	43.1	26.7	-6	10	4	2
		1974..	65,804.1	2,426.3	55.6	24.6	28.0	3.1	88.6	22.7	39.8	26.2	6	2	2	4
		1973..	60,864.8	1,996.1	52.7	27.0	22.2	3.5	87.2	20.2	38.9	28.1	(X)	(X)	4	6
37	Transportation equipment.....	1980..	(NA)	(NA)	275.0	201.4	60.5	12.9	401.5	110.7	137.4	153.2	45	21	1	1
		1980..	(NA)	(NA)	275.0	201.4	60.7	12.9	401.5	110.7	137.4	153.2	45	21	1	1
		1979..	201,625.0	6,853.8	189.5	120.1	59.5	9.9	331.8	96.4	126.3	109.1	36	18	1	1
		1979..	199,733.9	6,784.8	189.5	120.1	59.5	9.9	331.8	96.4	126.3	109.1	36	18	1	1
		1978..	188,773.3	5,834.3	139.5	71.0	57.9	10.7	280.5	77.3	110.2	93.0	69	20	1	1
		1978..	187,074.3	5,776.0	139.5	71.0	57.9	10.7	280.5	77.3	110.2	93.0	69	20	1	1
		1977..	166,954.0	4,670.9	82.6	36.9	39.4	6.3	233.9	60.6	97.3	76.1	5	18	1	1
		1977..	165,388.1	4,623.9	82.6	36.9	39.4	6.3	233.9	60.6	97.3	76.1	5	18	1	1
		1976..	141,025.5	3,130.6	78.5	21.1	53.6	3.8	197.9	56.9	83.5	57.6	4	18	3	1
		1975..	113,500.6	2,762.1	75.4	32.1	36.4	6.8	168.3	52.2	66.4	49.7	-27	9	9	1
		1974..	108,244.9	31,76.1	103.4	52.7	41.5	9.2	154.8	44.8	59.5	50.5	2	19	3	1
		1973..	110,710.7	2,528.9	101.2	52.6	41.7	6.9	129.8	35.2	51.1	43.4	(X)	(X)	1	1
38	Instruments, related products.....	1980..	(NA)	(NA)	28.4	11.8	13.3	3.3	77.6	11.4	33.9	32.3	17	11	9	1
		1980..	(NA)	(NA)	27.2	11.3	12.7	3.2	77.1	11.3	33.7	32.1	17	11	9	1
		1979..	37,740.2	1,452.6	24.2	13.6	8.0	2.6	69.7	10.7	30.9	28.1	37	23	12	1
		1979..	36,275.5	1,399.5	23.2	13.0	7.7	2.5	69.2	10.6	30.7	27.9	37	23	12	1
		1978..	33,701.2	1,099.5	17.7	7.1	9.9	0.6	56.2	7.4	27.1	21.8	-31	18	2	2
		1978..	32,386.9	1,058.8	16.9	6.8	9.5	0.6	55.8	7.3	26.9	21.6	-31	18	2	2
		1977..	28,897.8	938.9	25.5	15.1	8.9	1.5	47.6	9.1	23.1	15.5	-21	4	4	2
		1977..	27,776.3	904.6	24.4	14.5	8.5	1.4	47.3	9.0	23.0	15.4	-26	4	4	2
		1976..	25,030.1	782.7	32.3	10.9	12.2	9.3	45.7	8.7	22.3	14.8	9	19	4	3
		1975..	22,058.7	796.3	29.6	11.2	17.3	1.1	38.5	5.9	19.5	13.2	89	13	3	3
		1974..	20,953.0	821.6	15.7	3.6	6.7	5.3	34.1	4.9	15.0	14.3	33	36	3	4
		1973..	17,793.7	635.6	11.8	3.0	5.6	3.2	21.9	2.0	11.3	8.6	(X)	(X)	5	3
39	Miscellaneous manufacturing industries....	1980..	(NA)	(NA)	11.0	6.4	4.2	0.5	26.3	5.2	7.2	13.8	(X)	-	19	5
		1980..	(NA)	(NA)	11.0	6.4	4.2	0.5	26.3	5.2	7.2	13.8	(X)	-	19	5
		1979..	23,015.6	595.4	(S)	(S)	(S)	(S)	26.3	6.5	7.2	12.6	(X)	19	(X)	16
		1979..	19,881.0	532.8	(S)	(S)	(S)	(S)	26.3	6.5	7.2	12.6	(X)	19	(X)	16
		1978..	20,779.6	533.3	(S)	(S)	(S)	(S)	22.1	4.0	5.8	12.3	(X)	16	(X)	4
		1978..	17,953.6	477.3	(S)	(S)	(S)	(S)	22.1	4.0	5.8	12.3	(X)	16	(X)	4
		1977..	19,150.7	473.6	6.6	2.5	3.9	0.3	19.0	5.3	5.2	8.4	35	15	28	5
		1977..	16,542.5	423.8	6.6	2.5	3.9	0.3	19.0	5.3	5.2	8.4	35	15	28	5
		1976..	16,285.9	560.6	4.6	3.3	1.4	0.2	22.4	7.8	6.3	8.3	-13	23	14	10
		1975..	14,486.9	301.9	5.6	2.3	1.7	1.5	18.2	5.7	5.5	7.0	-60	-12	11	5
		1974..	13,990.1	362.3	14.1	7.3	5.8	1.0	20.7	7.3	5.6	7.8	17	36	10	9
		1973..	13,046.1	341.2	12.1	5.3	4.8	2.0	15.2	6.0	3.9	5.4	(X)	(X)	13	13

Note: Totals may not agree precisely with detail because of independent rounding. See "Limitations of Data" in the text for specific limitations of the 1973 statistics. See appendix A for explanation of terms.

- Represents zero. (D) Withheld to avoid disclosing operations of individual companies. ^c1978 and 1979 data are estimated. (NA) Not available. ^rRevised. (S) Data suppressed because did not meet publication standards. This includes cells where PACE or GAC is less than \$ 5.0 million or the standard error is 20 or greater. See text. (X) Not applicable. (Z) Represents less than \$50,000.

¹The calculation of the percent change is based on the change from the previous year to the subsequent year (e.g. 1979 to 1980).

²Major industry group 23, Apparel and Other Textile Products, is excluded from all but the U.S. totals of the first two columns.

³Two lines of data are presented for 1977 to 1980. The top line for each year represents the estimate for all establishments and is comparable to the estimates for 1973 to 1976. The bottom line is the estimate for establishments with 20 or more employees. See text.

Table 1B. Pollution Abatement Capital Expenditures and Operating Costs, by Form of Abatement and State: 1973 to 1980

(In millions of dollars, except percents)

Division and State	Selected data from the Annual Survey of Manufactures (ASM)		Pollution abatement capital expenditures (PACE)				Pollution abatement gross annual costs (GAC) including payments to government units				Percent change ¹		Standard error of estimates (percent)		
	Total value of shipments	Total new capital expenditures	Total	Air	Water	Solid waste	Total	Air	Water	Solid waste	PACE	GAC	PACE	GAC	
United States ²	1980..	(NA)	3,562.2	2,124.1	1,163.4	254.7	8,209.4	3,323.5	3,219.5	1,666.1	-2	10	3	1	
	1980..	(NA)	3,502.9	2,105.5	1,146.5	251.0	8,141.8	3,297.8	3,193.1	1,650.6	-2	10	3	1	
	1979..	1,726,913.2	61,452.9	3,602.2	2,088.7	1,262.2	251.0	7,461.5	3,085.5	3,040.1	1,335.8	9	18	1	
	1979..	1,643,955.9	58,163.9	3,564.5	2,071.9	1,245.7	246.9	7,399.9	3,061.8	3,015.6	1,322.5	9	18	1	
	1978..	1,523,429.9	55,243.9	3,315.9	1,871.5	1,262.9	181.2	6,327.5	2,546.6	2,550.4	1,210.3	-6	16	2	
	1978..	1,450,305.3	52,260.7	3,279.3	1,853.6	1,246.5	178.9	6,275.7	2,527.4	2,529.9	1,218.2	-6	16	1	
	1977..	1,358,526.4	47,459.0	3,522.6	1,667.9	1,695.1	159.9	5,470.2	2,259.3	2,221.6	989.7	-	21	1	
	1977..	1,293,265.6	44,919.0	3,483.5	1,652.0	1,674.1	157.7	5,425.0	2,240.4	2,203.4	981.4	-1	20	1	
	1976..	1,185,695.3	40,669.9	3,531.7	1,797.8	1,599.2	134.8	4,539.2	1,888.2	1,824.0	827.1	-3	24	1	
	1975..	1,039,377.4	37,262.1	3,637.6	2,235.7	1,280.1	121.8	3,673.1	1,508.1	1,496.6	669.7	17	18	1	
	1974..	1,017,846.9	35,698.7	3,101.1	1,947.5	1,008.8	144.7	3,102.8	1,210.7	1,261.4	630.7	32	27	1	
	1973..	875,443.2	26,972.9	2,353.7	1,417.5	827.8	108.2	2,445.2	960.5	993.3	491.7	(X)	(X)	2	
New England Division	1980..	(NA)	100.2	55.2	39.9	5.1	250.7	53.2	123.0	74.6	-5	13	(NA)	(NA)	
	1980..	(NA)	99.1	54.8	39.3	5.0	248.6	52.8	122.0	73.9	-5	13	(NA)	(NA)	
	1979..	(NA)	105.7	50.7	42.6	12.5	222.2	56.6	112.8	52.8	44	20	(NA)	(NA)	
	1979..	(NA)	104.6	50.3	42.0	12.3	220.4	56.2	111.9	52.3	44	20	(NA)	(NA)	
	1978..	75,880.8	2,820.5	73.5	29.8	40.5	3.4	184.8	38.9	98.0	47.7	-27	29	(NA)	(NA)
	1978..	(NA)	72.7	29.5	40.0	3.4	183.1	38.5	97.1	47.3	-27	29	(NA)	(NA)	
	1977..	66,717.2	2,142.3	100.9	32.7	65.5	2.8	142.8	31.0	77.4	34.2	-17	1	(NA)	(NA)
	1977..	(NA)	99.8	32.4	64.7	2.8	141.7	30.8	76.8	33.9	-18	-	(NA)	(NA)	
	1976..	59,822.9	2,145.5	121.0	33.2	78.4	9.5	141.8	36.0	65.3	40.7	7	17	(NA)	(NA)
	1975..	52,437.9	1,810.7	113.6	33.9	74.9	4.8	120.9	37.5	56.2	27.3	17	7	5	(NA)
	1974..	52,259.9	1,706.6	97.5	24.7	67.5	5.2	113.2	35.1	50.1	28.0	39	27	(NA)	(NA)
	1973..	46,052.4	1,368.8	70.2	23.4	42.8	4.1	89.4	32.3	38.0	19.4	(X)	(X)	(NA)	(NA)
Maine	1980..	(NA)	21.1	13.9	6.3	0.9	50.9	8.4	34.1	8.4	-43	15	7	4	
	1980..	(NA)	20.9	13.8	6.2	0.9	50.5	8.3	33.8	8.3	-43	15	7	4	
	1979..	(NA)	37.3	19.1	(D)	(D)	44.2	7.2	29.1	7.9	384	13	2	4	
	1979..	(NA)	36.9	18.9	(D)	(D)	43.8	7.1	28.9	7.8	384	13	2	4	
	1978..	5,866.7	424.3	7.7	1.9	5.0	0.7	39.1	5.0	23.8	10.2	-67	38	8	4
	1978..	(NA)	7.6	1.9	4.9	0.7	38.7	4.9	23.6	10.1	-67	38	8	4	
	1977..	5,144.6	222.9	23.4	9.1	14.1	0.2	28.3	3.8	20.4	4.0	-58	94	3	4
	1977..	(NA)	23.1	9.0	13.9	0.2	28.1	3.8	20.2	4.0	-58	92	3	4	
	1976..	4,422.8	507.4	55.3	12.5	35.3	7.5	14.6	2.2	9.7	2.8	16	-6	13	7
	1975..	3,816.3	314.4	47.8	5.6	38.7	3.4	15.6	2.0	10.1	3.5	80	-4	5	5
	1974..	3,839.0	173.2	26.6	1.4	22.8	2.4	16.3	2.0	10.4	4.0	45	151	5	9
	1973..	3,257.2	111.9	18.3	6.6	10.5	1.2	6.5	0.9	3.9	1.8	(X)	(X)	13	5
New Hampshire	1980..	(NA)	25.9	17.0	8.4	0.4	(S)	(S)	(S)	(S)	(X)	(X)	18	(X)	
	1980..	(NA)	25.6	16.9	8.3	0.4	(S)	(S)	(S)	(S)	(X)	(X)	18	(X)	
	1979..	(NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)	
	1979..	(NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)	
	1978..	5,055.4	196.2	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)	
	1978..	(NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)	
	1977..	4,032.3	162.0	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)	
	1977..	(NA)	18.8	1.5	17.2	0.3	13.5	1.8	9.5	2.1	31	61	28	16	
	1976..	3,495.4	137.6	14.5	0.6	13.8	0.2	8.4	0.9	4.6	2.9	11	83	20	13
	1975..	3,046.3	97.2	13.1	2.3	10.5	0.4	4.6	0.4	2.6	1.7	-19	35	8	11
	1974..	3,053.4	104.0	16.1	3.3	12.5	0.3	3.4	0.3	1.7	1.4	193	21	44	9
	1973..	2,642.6	102.0	5.5	1.0	4.4	0.1	2.8	0.4	1.3	1.0	(X)	(X)	7	9
Vermont	1980..	(NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)	
	1980..	(NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)	
	1979..	(NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)	
	1979..	(NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)	
	1978..	2,562.5	133.4	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)	
	1978..	(NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)	
	1977..	2,189.3	93.0	2.5	0.6	1.8	0.3	3.5	0.4	1.9	1.2	-26	25	34	16
	1977..	(NA)	2.5	0.6	1.6	0.3	3.5	0.4	1.9	1.2	-26	24	34	16	
	1976..	2,056.2	95.6	3.4	1.2	2.1	0.1	2.8	0.2	1.8	0.8	48	56	39	15
	1975..	1,680.3	76.6	2.3	0.3	1.8	0.2	1.8	0.2	0.8	0.7	-72	-25	31	19
	1974..	1,581.3	69.3	8.3	0.2	7.5	0.5	2.4	0.3	1.2	0.8	453	-67	67	20
	1973..	1,359.6	42.5	1.5	0.5	0.8	0.2	7.3	0.3	6.2	0.8	(X)	(X)	23	71
Massachusetts	1980..	(NA)	24.3	13.0	9.3	1.9	79.2	17.9	33.3	28.1	-24	-	11	12	
	1980..	(NA)	24.0	12.9	9.2	1.9	78.5	17.8	33.0	27.8	-24	-	11	12	
	1979..	(NA)	32.0	18.6	(S)	(S)	79.1	23.7	32.5	23.0	5	25	19	6	
	1979..	(NA)	31.7	18.5	(S)	(S)	78.5	23.5	32.2	22.8	5	25	19	6	
	1978..	34,450.4	1,170.3	30.4	16.9	12.4	1.3	63.1	15.5	28.6	18.9	-16	18	11	6
	1978..	(NA)	30.1	16.7	12.2	1.3	62.5	15.4	28.3	18.7	-15	17	11	6	
	1977..	30,144.2	952.8	36.0	15.0	19.7	1.2	53.6	13.5	25.0	14.3	4	1	10	6
	1977..	(NA)	35.6	14.9	19.5	1.2	53.2	13.4	24.9	14.9	41	-	10	6	
	1976..	26,918.4	781.6	25.2	11.3	12.9	1.1	53.2	12.0	19.3	21.9	-4	29	8	17
	1975..	23,923.5	620.4	26.3	15.4	10.4	0.6	41.3	13.6	15.7	11.9	24	6	19	5
	1974..	23,807.2	764.5	21.2	10.0	10.5	0.7	38.8	13.5	13.4	12.1	-3	35	8	7
	1973..	21,337.1	669.0	21.9	7.3	12.8	1.8	28.7	12.9	8.3	7.5	(X)	(X)	10	7
Rhode Island	1980..	(NA)	(S)	(S)	(S)	(S)	9.8	1.5	4.2	4.1	(X)	9	(X)	8	
	1980..	(NA)	(S)	(S)	(S)	(S)	9.7	1.5	4.2	4.1	(X)	9	(X)	8	
	1979..	(NA)	2.7	(S)	(S)	-	9.0	1.7	4.5	2.7	(X)	-1	18	9	
	1979..	(NA)	2.7	(S)	(S)	-	8.9	1.7	4.5	2.7	(X)	-1	18	9	
	1978..	5,987.9	217.3	(S)	(S)	(S)	9.2	1.7	4.5	2.9	(X)	16	(X)	9	
	1978..	(NA)	(S)	(S)	(S)	(S)	9.1	1.7	4.5	2.9	(X)	17	(X)	9	
	1977..	5,364.6	145.6	6.6	1.8	4.5	0.3	7.9	1.3	3.8	2.8	57	-25	17	7
	1977..	(NA)	6.5	1.8	4.4	0.3	7.8	1.3	3.7	2.8	55	-26	17	7	
	1976..	4,532.7	143.4	4.2	0.9	3.1	0.1	10.5	3.1	5.0	2.5	17	9	32	20
	1975..	3,924.0	119.5	3.6	2.2	1.3	0.1	9.6	3.3	4.2	2.1	-20	12	36	20
	1974..	4,081.1													

Table 1B. Pollution Abatement Capital Expenditures and Operating Costs, by Form of Abatement and State: 1973 to 1980—Continued

(In millions of dollars, except percents)

Division and State	Selected data from the Annual Survey of Manufactures (ASM)		Pollution abatement capital expenditures (PACE)				Pollution abatement gross annual costs (GAC) including payments to government units				Percent change ¹		Standard error of estimates (percent)	
	Total value of shipments	Total new capital expenditures	Total	Air	Water	Solid waste	Total	Air	Water	Solid waste	PACE	GAC	PACE	GAC
New England Division--Conn.														
Connecticut.....														
1980..	(NA)	(NA)	20.9	7.4	12.6	1.0	74.8	23.0	32.1	19.8	6	16	13	9
1980..	(NA)	(NA)	20.7	7.3	12.4	1.0	74.2	22.8	31.8	19.6	6	16	13	9
1979..	(NA)	(NA)	19.7	8.5	(8)	(8)	64.6	20.7	31.0	12.9	22	33	10	9
1979..	(NA)	(NA)	19.5	8.4	(8)	(8)	64.1	20.6	30.8	12.7	23	34	10	9
1978..	21,957.9	679.0	16.1	8.3	7.2	0.6	48.5	14.1	22.6	11.8	20	35	17	5
1978..	(NA)	(NA)	15.9	8.2	7.1	0.6	48.0	14.0	22.4	11.7	20	34	17	5
1977..	19,842.2	566.0	13.4	4.6	8.4	0.5	36.0	10.2	16.8	8.8	-27	-31	12	5
1977..	(NA)	(NA)	13.3	4.6	8.3	0.5	35.7	10.1	16.7	8.9	-28	-32	12	5
1976..	18,397.4	479.9	18.4	6.7	11.2	0.5	52.3	17.6	24.9	9.8	-10	9	9	25
1975..	16,047.5	582.6	20.5	8.1	12.2	0.3	48.0	18.0	22.7	7.4	-1	10	10	27
1974..	15,897.9	479.1	20.8	7.5	12.0	1.3	43.7	15.6	20.1	8.0	8	14	7	24
1973..	13,826.5	354.7	19.3	7.0	11.6	0.7	38.3	15.3	16.1	6.9	(X)	(X)	19	28
Middle Atlantic Division.....														
1980..	(NA)	(NA)	605.7	377.9	176.0	51.8	1,305.1	531.2	493.8	280.2	13	12	(NA)	(NA)
1980..	(NA)	(NA)	599.0	374.6	173.5	51.0	1,294.4	527.1	489.8	277.6	13	12	(NA)	(NA)
1979..	(NA)	(NA)	536.3	264.7	211.1	60.7	1,161.0	483.8	453.4	223.8	32	18	(NA)	(NA)
1979..	(NA)	(NA)	530.7	262.6	208.4	59.7	1,151.4	480.1	449.7	221.6	32	18	(NA)	(NA)
1978..	237,969.3	7,114.8	405.8	197.3	190.9	17.6	980.8	413.4	373.9	193.4	-28	12	(NA)	(NA)
1978..	(NA)	(NA)	401.3	195.4	188.4	17.4	972.9	410.1	370.9	191.9	-28	12	(NA)	(NA)
1977..	217,340.6	6,203.9	563.5	274.5	265.5	23.4	879.1	391.0	327.9	160.3	19	15	(NA)	(NA)
1977..	(NA)	(NA)	557.2	271.9	262.2	23.1	871.6	387.7	325.1	158.9	18	14	(NA)	(NA)
1976..	193,716.9	5,520.5	473.1	203.1	247.2	23.0	765.6	342.7	287.4	135.7	5	19	(NA)	(NA)
1975..	176,115.1	5,327.9	450.8	267.6	173.5	9.5	644.9	278.6	245.3	120.9	2	16	2	(NA)
1974..	177,170.0	5,446.4	442.2	275.0	148.4	19.0	556.8	233.1	203.8	119.8	39	29	(NA)	(NA)
1973..	156,159.4	4,168.2	318.1	183.3	112.9	22.0	432.3	178.4	165.0	88.8	(X)	(X)	(NA)	(NA)
New York.....														
1980..	(NA)	(NA)	150.8	62.6	55.5	32.8	338.3	98.1	144.5	95.9	-7	7	3	2
1980..	(NA)	(NA)	148.9	62.0	54.7	32.3	335.5	97.3	143.3	95.0	-7	7	3	2
1979..	(NA)	(NA)	162.8	54.8	61.4	46.9	316.5	90.4	141.2	84.9	51	24	1	5
1979..	(NA)	(NA)	161.1	54.4	60.6	46.1	313.9	89.7	140.1	84.1	51	24	1	5
1978..	94,296.5	2,917.9	108.1	46.1	55.6	6.4	255.0	66.1	113.6	75.3	-27	15	2	9
1978..	(NA)	(NA)	106.9	45.7	54.9	6.3	253.0	65.5	112.7	74.7	-27	15	2	9
1977..	86,216.4	2,530.2	147.2	54.4	79.7	13.2	222.6	62.5	103.7	56.5	-9	15	4	2
1977..	(NA)	(NA)	145.6	53.9	78.0	13.0	220.7	62.0	102.8	56.0	-10	14	4	2
1976..	76,087.1	2,303.7	162.5	50.6	98.7	13.2	192.8	55.0	86.0	51.9	38	17	13	2
1975..	69,551.3	2,172.1	117.7	55.7	58.5	3.5	164.9	46.8	71.9	46.2	15	12	5	3
1974..	69,271.2	2,198.2	102.4	51.3	40.5	10.6	147.1	36.8	60.6	49.5	30	29	4	3
1973..	64,648.9	1,643.7	79.0	29.6	38.1	11.3	114.0	26.6	52.3	35.2	(X)	(X)	10	3
New Jersey.....														
1980..	(NA)	(NA)	105.1	67.5	31.6	5.9	383.7	168.0	151.2	64.5	21	18	2	5
1980..	(NA)	(NA)	103.9	66.9	31.2	5.8	380.6	166.7	150.0	63.9	21	18	2	5
1979..	(NA)	(NA)	87.1	43.8	38.6	4.8	324.8	136.2	138.2	50.3	15	35	6	1
1979..	(NA)	(NA)	86.2	43.5	38.1	4.7	322.0	135.2	137.1	49.8	15	35	6	1
1978..	54,748.0	1,639.7	75.9	38.4	34.2	3.2	241.3	89.4	109.5	42.4	-44	-	1	4
1978..	(NA)	(NA)	75.1	38.0	33.8	3.2	239.3	88.7	108.6	42.1	-44	-	1	4
1977..	51,279.4	1,376.3	136.4	64.8	69.9	1.7	240.5	102.2	103.3	35.0	25	16	3	1
1977..	(NA)	(NA)	134.9	64.2	69.0	1.7	238.5	101.5	102.4	34.7	24	15	3	1
1976..	45,711.3	1,216.3	108.8	30.4	77.3	1.2	206.7	92.9	81.6	32.2	-23	21	4	3
1975..	40,716.8	1,200.2	142.2	78.3	61.7	2.1	171.0	73.3	69.4	28.3	7	12	4	3
1974..	40,346.0	1,203.2	133.1	82.8	46.5	3.9	152.4	68.4	56.6	27.5	64	27	8	3
1973..	35,924.9	955.3	81.0	49.0	28.5	3.6	125.0	61.5	43.5	19.8	(X)	(X)	11	4
Pennsylvania.....														
1980..	(NA)	(NA)	350.0	247.8	88.8	13.2	582.9	265.1	198.1	119.8	22	12	1	1
1980..	(NA)	(NA)	346.1	245.6	87.5	13.0	578.1	265.1	196.5	118.7	22	12	1	1
1979..	(NA)	(NA)	286.3	166.0	111.1	9.0	519.7	257.2	173.9	88.6	29	7	4	1
1979..	(NA)	(NA)	283.3	164.7	109.7	8.9	515.4	255.2	172.5	87.7	29	7	4	1
1978..	88,924.8	2,557.2	221.8	112.8	101.0	8.0	484.5	256.6	150.8	77.1	-21	16	2	1
1978..	(NA)	(NA)	219.3	111.7	99.7	7.9	480.6	255.9	149.6	75.1	-21	17	2	1
1977..	79,844.8	2,297.4	279.8	155.3	115.9	8.5	416.0	226.1	120.9	68.8	39	14	7	2
1977..	(NA)	(NA)	276.7	153.8	114.5	8.4	412.4	224.2	119.9	68.2	37	13	7	2
1976..	71,918.5	2,000.5	201.8	122.1	71.2	8.6	366.1	194.8	119.8	51.6	6	18	4	2
1975..	65,847.0	1,955.6	190.9	133.6	53.3	3.9	309.0	158.5	104.0	46.5	-8	20	3	2
1974..	67,552.8	2,045.0	206.7	140.9	61.4	4.5	257.3	127.9	86.6	42.8	31	25	5	3
1973..	55,585.6	1,569.2	158.1	104.7	46.3	7.1	193.3	90.3	69.2	34.1	(X)	(X)	3	3
East North Central Division.....														
1980..	(NA)	(NA)	821.0	472.6	291.0	57.3	1,918.8	718.8	776.4	423.7	-6	5	(NA)	(NA)
1980..	(NA)	(NA)	811.9	468.5	286.8	56.5	1,903.0	713.2	770.0	419.8	-6	5	(NA)	(NA)
1979..	(NA)	(NA)	876.3	559.4	277.3	39.3	1,827.4	718.2	748.2	361.0	9	21	(NA)	(NA)
1979..	(NA)	(NA)	867.3	554.9	273.7	38.7	1,812.3	712.7	742.2	357.4	9	21	(NA)	(NA)
1978..	417,913.4	14,586.0	801.2	465.2	293.8	42.3	1,507.2	567.0	622.8	317.3	3	15	(NA)	(NA)
1978..	(NA)	(NA)	792.4	460.8	290.0	41.8	1,495.1	562.5	617.8	314.7	3	15	(NA)	(NA)
1977..	172,970.6	12,453.8	776.5	381.0	362.7	32.8	1,305.7	499.7	542.6	263.0	8	17	(NA)	(NA)
1977..	(NA)	(NA)	767.9	377.4	358.2	32.3	1,294.7	495.5	538.1	260.8	7	16	(NA)	(NA)
1976..	327,002.1	9,625.0	719.5	421.2	280.1	18.3	1,112.3	442.0	454.4	215.7	-4	23	(NA)	(NA)
1975..	282,330.4	9,038.5	752.4	454.9	273.5	24.2	905.7	353.8	375.7	176.1	38	19	3	(NA)
1974..	281,771.1	9,824.1	544.4	313.2	196.0	35.3	762.0	274.8	324.5	162.7	15	21	(NA)	(NA)
1973..	249,351.1	7,449.6	473.8	263.4	177.4	33.0	632.0	225.8	268.5	138.1	(X)	(X)	(NA)	(NA)
Ohio.....														
1980..	(NA)	(NA)	254.2	188.5	56.6	8.8	509.9	197.7	201.3	111.2	20	3	2	3
1980..	(NA)	(NA)	251.5	186.9	55.8	8.7	505.7	196.2	199.6	110.2	20	3	2	3
1979..	(NA)	(NA)	211.3	146.4	55.6	9.1	494.4							

Table 1B. Pollution Abatement Capital Expenditures and Operating Costs, by Form of Abatement and State: 1973 to 1980—Continued

(In millions of dollars, except percents)

Division and State	Selected data from the Annual Survey of Manufacturers (ASM)		Pollution abatement capital expenditures (PACE)				Pollution abatement gross annual costs (GAC) including payments to government units				Percent change ¹		Standard error of estimates (percent)	
	Total value of shipments	Total new capital expenditures	Total	Air	Water	Solid waste	Total	Air	Water	Solid waste	PACE	GAC	PACE	GAC
East North Central Division--Con.														
Indiana	³ 1980.. (NA)	(NA)	194.8	96.0	83.3	15.5	410.7	191.8	155.8	63.0	-15	(X)	1	1
	³ 1980.. (NA)	(NA)	192.6	95.2	82.1	15.3	407.3	190.3	154.5	62.4	-15	(X)	1	1
	³ 1979.. (NA)	(NA)	228.3	146.9	75.5	5.8	(S)	(S)	(S)	(S)	34	(X)	1	(X)
	³ 1978.. (NA)	(NA)	225.9	145.7	74.5	5.7	(S)	(S)	(S)	(S)	34	(X)	1	(X)
	³ 1978.. 58,934.7	2,166.8	171.0	101.5	64.7	4.8	305.8	140.7	115.5	49.8	4	22	4	1
	³ 1978.. (NA)	(NA)	169.1	100.5	63.9	4.7	303.4	139.6	114.6	49.4	4	22	4	1
	³ 1977.. 52,172.2	2,078.0	163.7	89.2	70.1	4.4	251.5	115.2	97.0	39.4	19	13	4	1
	³ 1977.. (NA)	(NA)	161.9	88.4	69.2	4.3	249.3	114.2	96.1	39.1	17	12	4	1
	1976.. 45,180.9	1,475.1	138.1	74.5	57.4	6.3	223.1	108.6	82.2	32.3	-11	30	3	2
	1975.. 38,250.2	1,505.8	154.8	96.7	53.4	4.7	171.4	72.1	77.5	21.9	59	28	4	2
	1974.. 39,423.9	1,402.4	97.5	55.9	38.6	3.0	134.1	50.1	61.3	22.8	28	33	4	2
	1973.. 34,175.5	1,107.2	76.4	44.9	29.3	2.3	101.0	36.7	44.5	19.8	(X)	(X)	3	2
Illinois	³ 1980.. (NA)	(NA)	138.1	76.4	49.6	12.1	425.6	163.5	159.0	102.8	-24	-	2	4
	³ 1980.. (NA)	(NA)	136.6	75.7	48.9	12.0	422.1	162.2	157.7	101.9	-24	-	2	4
	³ 1979.. (NA)	(NA)	181.4	119.8	49.9	11.6	424.0	167.0	167.4	89.6	8	29	5	1
	³ 1979.. (NA)	(NA)	179.5	118.8	49.3	11.4	420.5	165.7	166.1	88.7	8	29	5	1
	³ 1978.. 103,858.1	2,975.8	168.0	99.2	58.8	10.0	328.3	127.2	126.9	73.8	7	8	3	2
	³ 1978.. (NA)	(NA)	166.2	98.3	58.0	9.9	325.6	126.1	125.8	73.2	7	8	3	2
	³ 1977.. 93,081.3	2,661.5	157.3	87.0	63.6	6.8	303.7	119.1	120.2	64.1	-13	19	1	1
	³ 1977.. (NA)	(NA)	155.6	86.2	62.8	6.7	301.1	118.1	119.2	63.5	-14	18	1	1
	1976.. 82,351.3	2,335.2	180.3	128.2	49.9	3.1	255.9	100.7	102.5	52.7	24	22	2	2
	1975.. 75,011.1	2,228.5	145.6	92.0	50.5	2.1	209.6	78.1	84.4	47.1	18	14	3	2
	1974.. 74,702.9	2,154.5	123.2	72.5	45.5	5.2	184.4	62.6	74.9	46.9	9	22	3	2
	1973.. 62,581.6	1,698.8	113.2	59.0	47.1	7.1	151.4	52.8	62.7	35.8	(X)	(X)	3	3
Michigan	³ 1980.. (NA)	(NA)	165.3	84.3	67.2	13.8	416.5	136.4	170.1	110.3	-25	6	2	13
	³ 1980.. (NA)	(NA)	163.5	83.6	66.3	13.6	413.0	135.3	168.7	109.3	-25	6	2	13
	³ 1979.. (NA)	(NA)	220.8	132.0	78.8	10.0	391.4	142.5	159.1	89.8	28	18	1	7
	³ 1979.. (NA)	(NA)	218.5	130.9	77.8	9.8	388.1	141.4	157.8	88.9	28	18	1	7
	³ 1978.. 104,920.7	4,742.7	172.7	88.7	74.2	9.8	330.8	109.8	135.1	86.0	15	14	3	3
	³ 1978.. (NA)	(NA)	170.8	87.9	73.2	9.7	228.1	108.9	134.0	85.3	15	14	3	3
	³ 1977.. 93,757.1	3,739.2	150.2	61.5	62.6	6.2	290.1	95.4	121.2	73.4	41	22	3	2
	³ 1977.. (NA)	(NA)	148.5	60.9	61.6	6.1	287.7	94.6	120.2	72.8	39	21	3	2
	1976.. 80,326.7	2,636.1	106.7	45.7	57.2	3.8	236.9	91.7	93.1	52.0	-4	19	2	2
	1975.. 64,535.1	2,263.3	110.7	49.9	52.5	8.4	199.8	83.0	75.5	41.3	5	11	3	2
	1974.. 63,560.5	2,850.7	105.9	52.8	42.9	10.2	179.9	65.1	78.4	36.4	-2	11	4	2
	1973.. 63,410.9	1,997.9	108.6	62.7	41.9	4.0	162.8	62.3	64.0	36.6	(X)	(X)	5	2
Wisconsin	³ 1980.. (NA)	(NA)	68.5	27.3	34.1	7.1	156.0	29.4	90.2	36.3	97	(X)	12	6
	³ 1980.. (NA)	(NA)	67.7	27.1	33.6	7.0	154.7	29.2	89.5	36.0	97	(X)	12	6
	³ 1979.. (NA)	(NA)	34.7	14.4	17.4	2.8	(S)	(S)	(S)	(S)	-41	(X)	7	(X)
	³ 1979.. (NA)	(NA)	34.3	14.3	17.2	2.8	(S)	(S)	(S)	(S)	-41	(X)	7	(X)
	³ 1978.. 43,712.1	1,408.1	85.2	50.6	25.0	9.7	125.5	23.4	70.3	31.8	5	16	6	4
	³ 1978.. (NA)	(NA)	84.3	50.1	24.7	9.6	124.6	23.2	69.8	31.6	5	16	6	4
	³ 1977.. 38,725.3	1,184.4	81.0	19.6	58.5	2.9	108.5	20.6	62.1	25.8	19	10	6	5
	³ 1977.. (NA)	(NA)	80.1	19.4	57.8	2.9	107.6	20.4	61.6	25.6	17	10	6	5
	1976.. 35,427.3	913.1	68.3	20.1	47.0	1.2	98.2	19.3	56.8	22.0	-13	24	9	8
	1975.. 31,045.7	880.4	78.4	41.4	34.5	2.5	79.0	20.3	36.8	21.9	30	26	17	10
	1974.. 29,599.3	892.9	60.5	30.5	26.4	3.6	62.6	16.7	30.0	15.8	23	30	11	9
	1973.. 25,161.6	706.4	49.0	19.3	27.1	2.6	48.0	14.2	22.6	11.2	(X)	(X)	5	6
West North Central Division	³ 1980.. (NA)	(NA)	198.7	130.9	58.4	9.2	374.7	142.2	141.2	91.3	20	1	(NA)	(NA)
	³ 1980.. (NA)	(NA)	196.5	129.8	57.6	9.1	371.6	141.1	140.0	90.5	20	1	(NA)	(NA)
	³ 1979.. (NA)	(NA)	249.6	150.4	90.1	9.0	370.6	149.9	147.1	73.6	61	32	(NA)	(NA)
	³ 1979.. (NA)	(NA)	247.0	149.2	88.9	8.9	367.5	148.7	145.9	72.9	61	32	(NA)	(NA)
	³ 1978.. 122,649.6	3,325.9	155.0	71.0	75.9	8.3	280.9	99.8	115.3	65.9	7	24	(NA)	(NA)
	³ 1978.. (NA)	(NA)	153.3	70.3	74.9	8.2	278.6	99.0	114.4	65.4	7	24	(NA)	(NA)
	³ 1977.. 107,370.9	2,644.6	145.2	64.2	75.5	5.4	226.5	79.4	94.8	52.5	-24	11	(NA)	(NA)
	³ 1977.. (NA)	(NA)	143.6	63.6	74.6	5.3	224.6	78.7	94.0	52.1	-25	10	(NA)	(NA)
	1976.. 94,956.1	2,401.4	191.8	97.9	86.6	7.2	203.9	72.8	76.1	54.6	12	25	(NA)	(NA)
	1975.. 85,135.6	2,327.5	171.3	95.7	65.2	10.7	162.8	61.4	62.7	38.5	-3	10	(NA)	(NA)
	1974.. 81,653.1	2,055.8	177.1	120.5	48.0	8.7	148.2	56.7	55.4	36.4	58	40	(NA)	(NA)
	1973.. 71,529.7	1,524.6	112.4	74.2	34.5	3.6	106.1	41.5	37.3	27.4	(X)	(X)	(NA)	(NA)
Minnesota	³ 1980.. (NA)	(NA)	69.6	45.8	20.6	3.1	89.6	29.0	42.2	18.3	12	13	11	2
	³ 1980.. (NA)	(NA)	68.8	45.5	20.2	3.1	88.9	28.8	41.8	18.1	12	13	11	2
	³ 1979.. (NA)	(NA)	62.1	30.6	30.0	1.6	79.6	22.7	40.3	16.6	43	29	6	3
	³ 1979.. (NA)	(NA)	61.5	30.4	29.6	1.6	78.9	22.5	40.0	16.4	43	29	6	3
	³ 1978.. 25,838.6	788.2	43.5	13.0	30.1	0.4	61.7	20.8	25.6	15.4	67	21	9	9
	³ 1978.. (NA)	(NA)	43.0	12.9	29.7	0.4	61.2	20.6	25.4	15.3	67	21	9	9
	³ 1977.. 23,021.2	576.4	26.1	10.3	14.4	1.4	51.1	12.3	23.1	15.8	-20	28	11	9
	³ 1977.. (NA)	(NA)	25.8	10.2	14.2	1.4	50.7	12.2	22.9	15.7	-21	27	11	9
	1976.. 20,439.5	494.9	32.5	20.7	11.3	0.5	39.8	9.2	18.3	11.9	-34	20	10	4
	1975.. 18,646.4	467.6	49.0	34.3	14.5	0.3	33.2	8.7	17.1	7.5	-12	9	5	6
	1974.. 18,221.7	488.7	55.6	37.9	15.4	2.3	30.5	7.9	14.6	8.0	146	37	5	3
	1973.. 15,279.0	330.5	22.6	12.8	8.7	1.1	22.2	6.0	9.8	6.4	(X)	(X)	6	4
Iowa	³ 1980.. (NA)	(NA)	36.5	20.3	14.2	1.9	85.0	22.3	43.8	19.0	55	7	4	2
	³ 1980.. (NA)	(NA)	36.1	20.2	14.0	1.9	84.3	22.1	43.4	18.8	55	7	4	2
	³ 1979.. (NA)	(NA)	25.1	9.6	12.2	3.3	79.7	24.4	40.0	15.3	-58	17	8	2
	³ 1979.. (NA)	(NA)	24.8	9.5	12.0	3.3	79.0	24.2	39.7	15.1	-58	17	8	2
	³ 1978.. 26,547.5	840.3	43.0	17.2	23.9	1.9	68.1	20.3	34.6	13.5	-2	23	8	2
	³ 1978.. (NA)	(NA)	42.5	17.0	23.6	1.9	67.5	20.1	34.3	13.4	-2	23		

Table 1B. Pollution Abatement Capital Expenditures and Operating Costs, by Form of Abatement and State: 1973 to 1980—Continued

(In millions of dollars, except percents)

Division and State	Selected data from the Annual Survey of Manufactures (ASM)		Pollution abatement capital expenditures (PACE)				Pollution abatement gross annual costs (GAC) including payments to government units				Percent change ¹		Standard error of estimates (percent)	
	Total value of shipments	Total new capital expenditures	Total	Air	Water	Solid waste	Total	Air	Water	Solid waste	PACE	GAC	PACE	GAC
West North Central Division--Con.														
Missouri.....	¹ 1980.. (NA)	(NA)	53.2	39.8	10.1	3.2	117.7	54.2	30.0	33.4	55	21	3	4
	¹ 1980.. (NA)	(NA)	52.6	39.5	9.8	3.2	116.7	53.8	29.7	33.1	55	21	3	4
	¹ 1979.. (NA)	(NA)	36.6	19.9	14.9	1.8	97.0	45.8	29.3	21.9	8	2	3	3
	¹ 1979.. (NA)	(NA)	36.2	19.7	14.7	1.8	96.2	45.4	29.1	21.7	8	2	3	3
	¹ 1978.. 37,489.7	965.5	33.9	18.1	11.2	4.6	95.0	40.8	32.3	21.9	-6	34	6	4
	¹ 1978.. (NA)	(NA)	33.5	17.9	11.1	4.5	94.2	40.5	32.0	21.7	-6	34	6	4
	¹ 1977.. 33,027.5	780.2	36.1	(D)	(D)	(D)	71.0	32.9	24.2	14.0	-27	19	10	3
	¹ 1977.. (NA)	(NA)	35.7	(D)	(D)	(D)	70.4	32.6	24.0	13.9	-28	18	10	3
	1976.. 27,468.8	597.5	49.6	27.2	19.0	3.3	59.9	28.8	17.6	13.4	16	26	8	5
	1975.. 23,454.9	608.9	42.6	15.7	20.2	6.8	47.5	22.1	14.0	11.5	23	-3	9	6
	1974.. 23,390.5	547.2	34.6	23.6	9.0	2.0	49.1	23.4	13.4	12.4	44	22	11	5
	1973.. 21,481.1	435.6	24.1	18.6	4.3	1.2	40.4	20.7	10.6	9.1	(X)	(X)	9	6
North Dakota.....	¹ 1980.. (NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)
	¹ 1980.. (NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)
	¹ 1979.. (NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)
	¹ 1979.. (NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)
	¹ 1978.. 1,376.0	58.6	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)
	¹ 1978.. (NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)
	¹ 1977.. 1,312.9	53.0	10.0	(D)	(D)	(Z)	2.6	0.4	1.5	0.7	270	-32	45	29
	¹ 1977.. (NA)	(S)	(S)	(D)	(D)	(Z)	2.6	0.4	1.5	0.7	266	-32	45	29
	1976.. 1,236.2	54.9	2.7	2.0	0.6	(Z)	3.8	1.7	1.1	1.0	(X)	46	42	34
	1975.. 1,128.3	23.2	(D)	2.8	(D)	(D)	2.6	1.4	0.6	0.5	-27	-30	(X)	37
	1974.. 982.1	27.8	4.1	(D)	(D)	(D)	3.7	2.3	1.0	0.4	356	95	58	26
	1973.. 773.2	23.8	0.9	(D)	(D)	(D)	1.9	0.7	1.0	0.3	(X)	(X)	36	33
South Dakota.....	¹ 1980.. (NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)
	¹ 1980.. (NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)
	¹ 1979.. (NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)
	¹ 1979.. (NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)
	¹ 1978.. 2,154.2	40.1	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)
	¹ 1978.. (NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)
	¹ 1977.. 1,793.7	36.7	0.1	(Z)	(D)	(D)	1.2	0.1	0.7	0.4	-50	33	32	8
	¹ 1977.. (NA)	(S)	(S)	(Z)	(D)	(D)	1.2	0.1	0.7	0.4	-50	33	32	8
	1976.. 1,608.5	48.8	0.2	(Z)	0.2	-	0.9	0.1	0.5	0.3	(X)	29	19	16
	1975.. 1,494.4	36.5	(D)	-	(D)	(D)	0.7	(Z)	0.3	0.3	-82	-	(X)	16
	1974.. 1,389.0	30.7	1.1	(D)	(D)	(Z)	0.7	0.1	0.4	0.3	-63	40	21	20
	1973.. 1,274.9	32.3	3.0	(D)	(D)	(Z)	0.5	0.1	0.3	0.1	(X)	(X)	1	19
Nebraska.....	¹ 1980.. (NA)	(S)	(S)	(S)	(S)	(S)	19.6	5.1	8.4	6.2	(X)	15	(X)	8
	¹ 1980.. (NA)	(S)	(S)	(S)	(S)	(S)	19.4	5.1	8.3	6.1	(X)	15	(X)	8
	¹ 1979.. (NA)	(S)	(S)	(S)	(S)	(S)	17.0	4.7	7.3	5.0	(X)	18	(X)	6
	¹ 1979.. (NA)	(S)	(S)	(S)	(S)	(S)	16.9	4.7	7.2	5.0	(X)	18	(X)	6
	¹ 1978.. 10,572.1	219.5	7.2	5.5	1.6	0.1	14.4	3.4	6.1	4.7	22	26	19	6
	¹ 1978.. (NA)	(S)	(S)	5.4	1.6	0.1	14.3	3.4	6.1	4.7	22	27	19	6
	¹ 1977.. 8,713.4	175.1	5.9	3.7	1.8	0.2	11.4	2.5	5.3	3.6	-52	-6	15	6
	¹ 1977.. (NA)	(S)	(S)	5.7	1.8	0.2	11.3	2.5	5.2	3.6	-53	-7	15	6
	1976.. 8,773.3	167.5	12.3	8.7	3.3	0.4	12.1	4.1	5.2	2.8	-12	23	49	13
	1975.. 8,393.4	160.8	14.0	10.6	2.1	1.3	9.8	3.3	4.0	2.5	30	-6	28	11
	1974.. 7,949.3	143.3	10.8	7.8	2.7	0.2	10.4	2.4	5.8	2.2	21	37	23	14
	1973.. 6,954.9	108.5	8.9	4.2	4.7	0.1	7.6	1.8	3.8	1.9	(X)	(X)	16	8
Kansas.....	¹ 1980.. (NA)	(NA)	24.1	18.5	5.2	0.4	58.5	30.2	15.1	13.1	-114	-37	16	7
	¹ 1980.. (NA)	(NA)	23.8	18.3	5.1	0.4	58.0	30.0	15.0	13.0	-114	-37	16	7
	¹ 1979.. (NA)	(NA)	112.7	80.4	(S)	(S)	93.2	51.2	(S)	(S)	370	143	2	5
	¹ 1979.. (NA)	(NA)	111.5	79.8	(S)	(S)	92.4	50.8	(S)	(S)	370	143	2	5
	¹ 1978.. 18,671.5	413.7	24.0	14.2	8.5	1.2	38.3	14.1	14.8	9.4	3	14	6	7
	¹ 1978.. (NA)	(NA)	23.7	14.1	8.4	1.2	38.0	14.0	14.7	9.3	3	14	6	7
	¹ 1977.. 15,987.3	345.4	23.4	7.3	15.1	0.9	33.7	14.5	12.2	6.8	-29	-14	7	5
	¹ 1977.. (NA)	(NA)	23.1	7.2	14.9	0.9	33.4	14.4	12.2	6.8	-30	-14	7	5
	1976.. 14,657.5	328.3	33.0	19.9	11.5	1.6	39.0	12.1	12.1	14.8	49	47	25	14
	1975.. 13,006.6	321.3	22.1	12.2	9.5	0.4	26.5	10.0	9.3	7.3	-35	5	7	10
	1974.. 11,460.4	305.4	34.0	24.8	6.9	2.4	25.3	9.1	10.0	6.2	139	71	45	10
	1973.. 9,609.7	267.2	14.2	10.0	3.6	0.5	14.8	5.2	4.8	4.8	(X)	(X)	8	9
South Atlantic Division.....	¹ 1980.. (NA)	(NA)	482.4	262.0	181.6	39.5	1,047.1	366.1	489.0	191.8	20	10	(NA)	(NA)
	¹ 1980.. (NA)	(NA)	477.0	259.7	178.5	38.9	1,036.5	363.3	485.0	190.0	20	10	(NA)	(NA)
	¹ 1979.. (NA)	(NA)	400.8	215.3	158.9	26.9	953.8	322.8	471.1	159.9	-8	12	(NA)	(NA)
	¹ 1979.. (NA)	(NA)	396.6	213.6	156.9	26.1	945.9	320.3	467.3	158.3	-8	12	(NA)	(NA)
	¹ 1978.. 189,255.5	7,297.0	434.6	227.1	189.9	17.7	851.7	276.5	398.0	176.7	-1	20	(NA)	(NA)
	¹ 1978.. (NA)	(NA)	429.8	224.9	187.4	17.5	844.4	274.1	394.5	175.1	-1	20	(NA)	(NA)
	¹ 1977.. 168,427.7	6,050.0	441.0	(D)	239.9	(D)	707.8	238.2	336.3	131.4	-3	18	(NA)	(NA)
	¹ 1977.. (NA)	(NA)	436.1	(D)	236.9	(D)	701.9	236.2	335.5	130.3	-5	16	(NA)	(NA)
	1976.. 148,056.7	5,679.4	456.9	201.6	(D)	(D)	601.0	(D)	(D)	(D)	-15	26	(NA)	(NA)
	1975.. 127,223.8	5,230.9	565.1	350.7	197.2	17.5	*476.8	*168.3	214.4	*94.0	22	17	(NA)	(NA)
	1974.. 126,628.8	5,383.6	463.2	292.5	152.9	17.5	408.7	139.7	180.1	89.2	33	38	(NA)	(NA)
	1973.. 111,002.0	4,139.0	349.5	194.4	142.3	12.9	295.3	100.5	134.3	60.6	(X)	(X)	(NA)	(NA)
Delaware.....	¹ 1980.. (NA)	(NA)	82.9	48.9	32.7	1.3	(S)	(S)	(S)	(S)	146	(X)	1	(X)
	¹ 1980.. (NA)	(NA)	82.0	48.5	32.2	1.3	(S)	(S)	(S)	(S)	146	(X)	1	(X)
	¹ 1979.. (NA)	(NA)	33.7	28.7	4.4	0.6	(S)	(S)	(S)	(S)	-34	(X)	1	(X)
	¹ 1979.. (NA)	(NA)	33.3	28.4	4.3	0.6	(S)	(S)	(S)	(S)	-34	(X)	1	(X)
	¹ 1978.. 6,427.3	186.1	51.0	40.1	10.2	0.6	73.3	35.1	23.3	14.9	167	49	1	3
	¹ 1978.. (NA)	(NA)	50.4	39.7	10.1	0.6	72.6	34.8	23.1	14.8	167	49	1	3
	¹ 1977.. 5,208.7	148.2	19.1	(D)	10.5	(D)	49.1	21.6	21.7	5.9	25	15	11	3
	¹ 1977.. (NA)	(NA)	18.9	(D)	10.4	(D)	48.7	21.4	21.5	5.9	24	14	11	3
	1976.. 5,042.7	159.7	15.3	6.7	(D)	(D)	42.7	17.9	18.3	6.5	61	14	12	4
	1975.. 3,967.3	169.7	9.5	2.8	6.7	0.1	37.5	15.4	18.1	3.9	-22	20	14	4
	1974.. 4,128.9	146.9	12.2	2.4	(D)	(D)	31.2	15.0						

Table 1B. Pollution Abatement Capital Expenditures and Operating Costs, by Form of Abatement and State: 1973 to 1980—Continued

(In millions of dollars, except percents)

Division and State	Selected data from the Annual Survey of Manufactures (ASM)		Pollution abatement capital expenditures (PACE)				Pollution abatement gross annual costs (GAC) including payments to government units				Percent change ¹		Standard error of estimates (percent)		
	Total value of shipments	Total new capital expenditures	Total	Air	Water	Solid waste	Total	Air	Water	Solid waste	PACE	GAC	PACE	GAC	
South Atlantic Division--Con.															
Maryland.....	1980..	(NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	3	
	1980..	(NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	3	
	1979..	(NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	2	
	1979..	(NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	2	
	1978..	17,780.3	508.6	35.2	17.9	15.2	2.1	100.9	25.2	37.8	37.9	-22	33	3	
	1978..	(NA)	(NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	3	
	1977..	15,930.4	513.8	44.9	14.6	29.8	0.6	76.0	39.0	25.0	12.0	31	16	3	
	1977..	(NA)	(NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	3	
	1976..	14,762.2	421.0	34.2	13.4	19.4	1.4	65.5	35.5	20.1	9.9	-3	7	4	
	1975..	13,189.6	460.5	35.1	16.8	18.0	0.3	50.5	25.5	18.2	6.8	-23	14	5	
	1974..	13,446.1	438.6	45.7	23.3	22.0	0.3	44.3	22.0	16.4	6.0	76	28	4	
	1973..	11,498.8	317.1	26.0	15.3	10.3	0.3	34.5	17.2	12.3	5.1	(X)	(X)	4	
District of Columbia.....	1980..	(NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)	
	1980..	(NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)	
	1979..	(NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)	
	1979..	(NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)	
	1978..	1,047.3	17.5	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)	
	1978..	(NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)	
	1977..	984.4	18.1	0.2	0.1	(Z)	-	0.4	(Z)	0.1	0.3	-50	-50	32	
	1977..	(NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)	
	1976..	932.0	20.0	0.4	0.3	(Z)	0.1	0.8	0.1	(D)	300	-14	57	27	
	1976..	(NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)	
	1975..	888.3	14.9	0.1	0.1	0.1	-	0.7	0.1	0.3	0.3	-	37	35	
	1975..	(NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)	
	1974..	870.2	18.1	0.1	0.1	(D)	-	0.7	0.1	0.2	0.3	100	133	76	32
	1974..	(NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)	
	1973..	697.0	23.0	(Z)	(D)	(D)	(D)	0.3	(Z)	0.2	0.1	(X)	(X)	11	30
Virginia.....	1980..	(NA)	(NA)	68.8	30.6	31.9	6.4	120.3	38.3	59.2	22.8	-2	9	2	
	1980..	(NA)	(NA)	68.0	30.3	31.4	6.3	119.3	38.0	58.7	22.6	22	9	2	
	1979..	(NA)	(NA)	56.4	24.9	29.5	2.1	110.1	34.6	53.3	22.2	-26	11	9	
	1979..	(NA)	(NA)	55.8	24.7	29.1	2.0	109.2	34.3	52.9	22.0	-26	11	9	
	1978..	27,069.5	1,040.1	76.3	29.2	43.4	3.8	98.9	26.8	51.6	20.4	1	19	2	
	1978..	(NA)	(NA)	75.5	28.9	42.8	3.8	98.0	26.6	51.1	20.2	1	19	2	
	1977..	23,988.6	953.0	75.5	29.2	43.4	3.5	83.1	23.6	41.8	17.7	-12	6	3	
	1977..	(NA)	(NA)	74.7	28.8	42.4	3.5	82.4	23.4	41.5	17.5	-13	5	3	
	1976..	20,470.5	907.4	86.1	30.7	51.7	3.8	78.4	26.9	36.8	14.6	-8	23	7	
	1976..	(NA)	(NA)	86.1	30.7	51.7	3.8	78.4	26.9	36.8	14.6	-8	23	7	
	1975..	17,700.5	672.0	93.4	30.7	51.7	3.8	63.7	20.0	29.1	14.6	78	19	15	
	1975..	(NA)	(NA)	93.4	30.7	51.7	3.8	63.7	20.0	29.1	14.6	78	19	15	
	1974..	16,719.3	784.5	52.5	31.1	17.4	4.0	53.4	16.5	24.6	12.5	13	36	8	
	1974..	(NA)	(NA)	52.5	31.1	17.4	4.0	53.4	16.5	24.6	12.5	13	36	8	
	1973..	14,699.7	615.1	46.3	23.1	21.4	1.8	39.4	13.1	17.6	8.7	(X)	(X)	11	
West Virginia.....	1980..	(NA)	(NA)	59.8	23.8	26.5	9.6	173.0	61.0	79.4	32.6	(X)	-5	5	
	1980..	(NA)	(NA)	59.1	23.6	26.0	9.5	171.6	60.5	78.8	32.3	(X)	-5	5	
	1979..	(NA)	(NA)	58.1	23.8	26.5	9.5	182.4	58.9	76.8	32.6	(X)	18	(X)	
	1979..	(NA)	(NA)	58.1	23.8	26.5	9.5	182.4	58.9	76.8	32.6	(X)	18	(X)	
	1978..	9,743.7	512.0	47.7	26.1	20.8	0.9	154.4	53.8	75.7	24.9	-61	35	5	
	1978..	(NA)	(NA)	47.7	26.1	20.8	0.9	154.4	53.8	75.7	24.9	-61	35	5	
	1977..	8,705.9	402.3	122.6	32.2	88.5	1.9	114.4	37.0	55.5	21.9	56	9	1	
	1977..	(NA)	(NA)	122.6	32.2	88.5	1.9	114.4	37.0	55.5	21.9	56	9	1	
	1976..	7,937.6	288.8	78.6	41.4	36.2	1.0	104.7	33.1	49.2	22.4	21	39	11	
	1976..	(NA)	(NA)	78.6	41.4	36.2	1.0	104.7	33.1	49.2	22.4	21	39	11	
	1975..	6,743.7	363.9	65.1	48.6	15.5	1.1	75.6	22.8	37.9	15.0	-9	18	4	
	1975..	(NA)	(NA)	65.1	48.6	15.5	1.1	75.6	22.8	37.9	15.0	-9	18	4	
	1974..	6,893.4	299.6	71.4	51.5	18.1	1.8	64.2	21.1	29.3	13.8	50	39	12	
	1974..	(NA)	(NA)	71.4	51.5	18.1	1.8	64.2	21.1	29.3	13.8	50	39	12	
	1973..	5,609.1	230.7	47.5	22.9	23.9	0.7	46.3	13.8	21.8	10.7	(X)	(X)	4	
North Carolina.....	1980..	(NA)	(NA)	82.1	47.0	28.5	6.7	147.1	41.0	70.1	36.0	-40	14	7	
	1980..	(NA)	(NA)	81.2	46.6	28.0	6.6	145.9	40.7	69.5	35.7	-40	14	7	
	1979..	(NA)	(NA)	58.7	28.0	(S)	(S)	129.2	36.0	65.7	27.5	10	20	1	
	1979..	(NA)	(NA)	58.1	27.8	(S)	(S)	128.1	35.7	65.2	27.2	10	21	1	
	1978..	45,259.2	1,513.2	53.4	35.0	14.5	3.8	107.5	32.5	51.5	23.5	12	1	7	
	1978..	(NA)	(NA)	52.8	34.7	14.3	3.8	106.2	32.1	50.9	23.2	12	1	7	
	1977..	40,912.2	1,345.3	47.5	28.7	16.3	2.4	106.5	27.5	54.3	24.7	-27	34	6	
	1977..	(NA)	(NA)	47.0	28.4	16.1	2.4	105.6	27.3	53.8	24.5	-28	33	6	
	1976..	35,818.9	1,294.6	65.1	36.6	25.6	2.9	79.3	23.9	39.1	16.1	-19	13	5	
	1976..	(NA)	(NA)	65.1	36.6	25.6	2.9	79.3	23.9	39.1	16.1	-19	13	5	
	1975..	31,432.8	1,236.7	80.1	55.5	23.3	1.4	70.1	21.9	33.8	14.4	10	6	8	
	1975..	(NA)	(NA)	80.1	55.5	23.3	1.4	70.1	21.9	33.8	14.4	10	6	8	
	1974..	31,191.1	1,199.1	72.6	50.0	20.6	1.9	66.0	20.3	30.4	15.3	12	23	3	
	1974..	(NA)	(NA)	72.6	50.0	20.6	1.9	66.0	20.3	30.4	15.3	12	23	3	
	1973..	27,440.6	1,053.6	64.9	40.7	20.7	3.5	53.7	16.0	26.7	11.1	(X)	(X)	3	
South Carolina.....	1980..	(NA)	(NA)	51.8	27.9	21.3	2.5	91.8	18.6	50.1	22.9	28	-15	5	
	1980..	(NA)	(NA)	51.2	27.7	20.9	2.5	91.0	18.5	49.7	22.7	28	-15	5	
	1979..	(NA)	(NA)	40.5	23.5	13.5	3.6	108.1	35.2	54.2	18.7	-25	23	4	
	1979..	(NA)	(NA)	40.1	23.3	13.3	3.5	107.2	34.9	53.8	18.5	-25	23	4	
	1978..	21,124.6	978.7	54.0	24.5	27.3	2.3	88.0	24.4	48.1	15.4	58	15	4	
	1978..	(NA)	(NA)	53.4	24.3	26.9	2.3	87.2	24.2	47.7	15.3	58	15	4	
	1977..	18,882.4	788.6	34.2	15.0	16.7	2.4	76.2	22.2	40.3	13.8	16	64	6	
	1977..	(NA)	(NA)	33.8	14.9	16.5	2.4	75.6	22.0	40.0	13.7	14	63	6	
	1976..	16,610.1	868.0	29.6	8.0	18.9	2.6	46.4	12.1	27.0	7.4	-34	26	15	
	1976..	(NA)	(NA)	29.6	8.0	18.9	2.6	46.4	12.1	27.0	7.4	-34	26	15	
	1975..	13,715.0	807.0	45.0	12.6	29.3	3.1	36.8	11.5	18.7	6.7	44	32	10	
	1975..	(NA)	(NA)	45.0	12.6	29.3	3.1	36.8	11.5	18.7	6.7	44	32	10	
	1974..	14,037.8	848.6	31.3	16.9	11.2	3.2	27.8	6.7	14.5	6.6	73	34	7	
	1974..	(NA)	(NA)	31.3	16.9	11.2	3.2	27.8	6.7	14.5	6.6	73	34	7	

Table 1B. Pollution Abatement Capital Expenditures and Operating Costs, by Form of Abatement and State: 1973 to 1980—Continued

(In millions of dollars, except percents)

Division and State	Selected data from the Annual Survey of Manufacturers (ASM)		Pollution abatement capital expenditures (PACE)				Pollution abatement gross annual costs, (GAC) including payments to government units				Percent change ¹		Standard error of estimates (percent)		
	Total value of shipments	Total new capital expenditures	Total	Air	Water	Solid waste	Total	Air	Water	Solid waste	PACE	GAC	PACE	GAC	
South Atlantic Division—Continued															
Florida	¹ 1980..	(NA)	(NA)	32.8	11.4	18.4	3.0	146.2	47.3	73.5	25.4	-48	7	8	3
	² 1980..	(NA)	(NA)	32.4	11.3	18.1	3.0	145.0	46.9	72.9	25.2	-48	7	8	3
	³ 1979..	(NA)	(NA)	62.8	29.1	30.1	3.7	137.2	46.9	68.9	21.5	48	6	3	2
	³ 1979..	(NA)	(NA)	62.1	28.9	29.7	3.6	136.1	46.5	68.3	21.3	48	6	3	2
	¹ 1978..	24,991.4	1,081.1	42.4	18.2	21.1	3.1	129.1	49.2	57.2	22.4	11	15	5	2
	¹ 1978..	(NA)	(NA)	41.9	18.0	20.8	3.1	127.8	48.7	56.6	22.2	11	15	5	2
	¹ 1977..	20,980.6	737.3	38.1	15.4	20.7	2.0	112.1	40.9	52.1	19.1	-67	-5	5	2
	¹ 1977..	(NA)	(NA)	37.7	15.3	20.4	2.0	111.2	40.6	51.7	18.9	-68	-5	5	2
	1976..	18,091.3	867.0	117.1	47.7	66.6	2.8	117.6	46.9	49.0	21.7	-40	35	13	12
	1975..	16,335.8	819.2	194.7	122.9	67.4	4.4	87.3	32.9	33.1	21.4	61	17	12	5
	1974..	15,758.4	736.0	120.9	81.4	36.1	3.4	74.5	26.5	29.2	18.8	97	68	2	4
	1973..	13,725.6	519.9	61.3	31.7	26.8	2.9	44.3	16.4	18.1	9.8	(X)	(X)	5	5
East South Central Division															
	¹ 1980..	(NA)	(NA)	236.3	124.0	91.2	21.1	561.7	199.5	235.3	126.7	-9	5	(NA)	(NA)
	¹ 1980..	(NA)	(NA)	233.7	122.9	89.9	20.8	557.1	198.0	233.4	125.5	-9	5	(NA)	(NA)
	³ 1979..	(NA)	(NA)	259.3	144.6	91.6	23.1	536.2	201.4	237.8	97.0	-4	14	(NA)	(NA)
	³ 1979..	(NA)	(NA)	256.6	143.4	90.5	22.7	531.8	199.9	235.9	96.0	-4	14	(NA)	(NA)
	¹ 1978..	94,681.9	4,079.5	269.9	143.9	96.4	29.4	471.4	188.7	202.8	79.8	-7	16	(NA)	(NA)
	¹ 1978..	(NA)	(NA)	266.9	142.5	95.1	29.0	467.6	187.2	201.2	79.1	-7	16	(NA)	(NA)
	¹ 1977..	85,402.6	3,466.7	291.2	150.4	127.5	13.4	405.8	156.2	185.7	64.0	-10	27	(NA)	(NA)
	¹ 1977..	(NA)	(NA)	288.0	149.0	125.9	13.2	402.6	155.0	184.2	63.5	-11	26	(NA)	(NA)
	1976..	73,879.7	2,791.7	325.0	184.2	131.6	9.4	320.6	134.4	137.8	48.5	-20	19	(NA)	(NA)
	1975..	64,774.1	2,624.3	407.5	262.9	137.1	7.6	270.5	110.8	119.4	40.2	32	26	7	(NA)
	1974..	63,550.9	2,715.7	308.3	198.4	94.1	15.9	213.9	85.7	88.7	39.4	4*	34	(NA)	(NA)
	1973..	54,116.9	1,897.7	207.2	125.3	72.7	9.1	160.1	64.2	68.8	27.0	(X)	(X)	(NA)	(NA)
Kentucky															
	¹ 1980..	(NA)	(NA)	47.6	24.7	11.9	11.1	119.5	39.7	47.1	32.8	-1	6	12	4
	¹ 1980..	(NA)	(NA)	47.1	24.5	11.7	10.9	118.5	39.4	46.7	32.5	-1	6	12	4
	³ 1979..	(NA)	(NA)	47.9	37.6	(8)	(8)	112.5	37.1	47.3	28.2	-6	12	6	4
	³ 1979..	(NA)	(NA)	47.4	37.3	(8)	(8)	111.6	36.8	46.9	27.9	-6	12	6	4
	¹ 1978..	25,716.5	799.8	51.1	35.7	14.4	0.9	100.7	42.6	37.3	20.8	40	31	12	2
	¹ 1978..	(NA)	(NA)	50.5	35.4	14.2	0.9	99.9	42.3	37.0	20.6	40	31	12	2
	¹ 1977..	22,874.7	715.9	36.5	21.0	13.6	1.9	77.0	35.0	25.8	16.2	32	11	2	2
	¹ 1977..	(NA)	(NA)	36.1	20.8	13.4	1.9	76.4	34.7	25.6	16.1	-23	10	2	2
	1976..	20,268.5	521.6	47.0	24.7	19.8	2.4	69.4	33.5	21.9	14.0	-25	15	7	5
	1975..	17,647.4	484.5	62.7	43.2	17.4	2.1	60.1	26.6	23.6	10.0	-7	26	9	5
	1974..	17,207.8	549.7	67.4	48.6	17.1	1.7	47.6	16.9	21.1	9.6	-4	18	13	6
	1973..	14,332.1	504.4	70.1	48.6	20.6	1.0	40.4	14.2	19.2	7.0	(X)	(X)	34	4
Tennessee															
	¹ 1980..	(NA)	(NA)	79.6	32.9	41.6	5.1	174.2	57.3	79.3	37.5	-5	6	9	3
	¹ 1980..	(NA)	(NA)	78.7	32.6	41.1	5.0	172.8	57.3	78.7	37.1	-5	6	9	3
	³ 1979..	(NA)	(NA)	84.0	37.0	38.9	8.1	164.9	47.7	86.7	30.5	5	17	8	3
	³ 1979..	(NA)	(NA)	83.1	36.7	38.4	8.0	163.5	47.3	86.0	30.2	5	17	8	3
	¹ 1978..	31,750.2	1,156.2	80.0	42.0	30.2	7.7	140.4	41.9	74.2	24.2	-27	5	5	3
	¹ 1978..	(NA)	(NA)	79.1	41.6	29.8	7.6	139.3	41.6	73.6	24.0	-27	5	5	3
	¹ 1977..	28,752.0	961.1	109.7	61.9	43.2	4.6	133.3	40.8	73.4	19.1	-12	21	8	3
	¹ 1977..	(NA)	(NA)	108.5	61.3	42.7	4.5	132.2	40.5	72.8	18.9	-13	20	8	3
	1976..	24,755.5	781.3	124.1	75.5	45.5	3.2	109.9	34.1	60.1	15.8	-5	14	21	5
	1975..	21,768.2	826.1	130.3	61.8	65.2	3.3	96.2	30.1	53.0	13.1	82	22	18	6
	1974..	21,608.1	935.4	71.5	34.7	32.0	4.8	78.7	28.1	37.9	12.8	83	31	9	5
	1973..	18,913.7	673.5	39.0	22.7	13.6	2.6	60.2	24.4	25.4	10.4	(X)	(X)	10	5
Alabama															
	¹ 1980..	(NA)	(NA)	87.9	57.8	26.4	3.7	180.9	71.6	75.5	33.6	-17	-	9	3
	¹ 1980..	(NA)	(NA)	86.9	57.3	26.0	3.6	179.4	71.1	74.9	33.3	-17	-	9	3
	³ 1979..	(NA)	(NA)	105.9	59.1	34.1	12.7	181.5	87.2	68.3	25.9	-6	20	2	3
	³ 1979..	(NA)	(NA)	104.8	58.6	33.7	12.5	180.0	86.6	67.8	25.6	-6	20	2	3
	¹ 1978..	23,351.3	1,610.9	112.8	53.2	39.5	20.0	150.9	67.6	58.6	24.7	8	14	3	3
	¹ 1978..	(NA)	(NA)	111.5	52.7	39.0	19.7	149.7	67.1	58.1	24.5	8	14	3	3
	¹ 1977..	21,010.1	1,318.9	104.1	50.7	47.7	5.8	132.1	60.9	51.6	19.8	-1	41	2	3
	¹ 1977..	(NA)	(NA)	103.0	50.2	47.1	5.7	131.1	60.4	51.2	19.6	-2	40	2	3
	1976..	17,988.1	1,151.9	105.5	67.1	35.4	3.1	93.4	44.6	35.2	13.7	-27	27	4	2
	1975..	15,886.7	1,054.4	144.5	105.0	37.6	1.9	73.7	34.7	27.4	11.6	25	33	8	3
	1974..	15,698.2	910.9	115.2	73.8	32.8	8.6	55.6	24.3	19.7	11.6	61	45	7	3
	1973..	13,020.4	480.8	71.4	39.0	28.1	4.2	38.3	17.0	16.3	5.0	(X)	(X)	5	3
Mississippi															
	¹ 1980..	(NA)	(NA)	21.0	8.5	11.3	1.3	87.1	30.8	33.4	22.8	-3	13	14	9
	¹ 1980..	(NA)	(NA)	20.8	8.4	11.1	1.3	86.4	30.6	33.1	22.6	-3	13	14	9
	³ 1979..	(NA)	(NA)	21.6	10.9	(8)	(8)	77.3	29.4	35.5	12.4	-17	-3	19	9
	³ 1979..	(NA)	(NA)	21.4	10.8	(8)	(8)	76.7	29.2	35.2	12.3	-17	-3	19	9
	¹ 1978..	13,863.9	512.6	26.1	12.9	12.3	0.8	79.3	36.5	32.8	10.1	-36	25	16	6
	¹ 1978..	(NA)	(NA)	25.8	12.8	12.1	0.8	78.7	36.2	32.5	10.0	-36	25	16	6
	¹ 1977..	12,765.8	470.8	40.8	16.9	23.0	1.1	63.4	19.6	34.9	9.0	-16	32	4	7
	¹ 1977..	(NA)	(NA)	40.4	16.7	22.7	1.1	62.9	19.4	34.6	8.9	-17	31	4	7
	1976..	10,867.6	336.9	48.4	16.9	30.9	0.7	47.9	22.2	20.6	5.0	-31	18	4	8
	1975..	9,471.8	259.3	70.0	52.9	16.9	0.3	40.5	19.4	15.6	5.5	25	27	11	14
	1974..	9,036.8	319.7	54.2	41.3	12.2	0.8	32.0	16.4	10.0	5.4	103	51	13	17
	1973..	7,845.7	239.0	26.7	15.0	10.4	1.3	21.2	8.6	7.9	4.7	(X)	(X)	7	5
West South Central Division															
	¹ 1980..	(NA)	(NA)	592.6	357.7	192.6	42.2	1,602.9	720.2	612.1	270.3	-13	18	(NA)	(NA)
	¹ 1980..	(NA)	(NA)	586.0	354.6	189.8	41.6	1,589.7	714.6	607.1	267.7	-13	18	(NA)	(NA)
	³ 1979..	(NA)	(NA)	682.7	399.2	238.4	45.0	1,356.1	613.6	551.9	190.5	-11	19	(NA)	(NA)
	³ 1979..	(NA)	(NA)	675.6											

Table 1B. Pollution Abatement Capital Expenditures and Operating Costs, by Form of Abatement and State: 1973 to 1980—Continued

(In millions of dollars, except percents)

Division and State	Selected data from the Annual Survey of Manufactures (ASM)		Pollution abatement capital expenditures (PACE)				Pollution abatement gross annual costs, (GAC) including payments to government units				Percent change ¹		Standard error of estimates (percent)		
	Total value of shipments	Total new capital expenditures	Total	Air	Water	Solid waste	Total	Air	Water	Solid waste	PACE	GAC	PACE	GAC	
West South Central Division--Con.															
Arkansas.....															
1980..	(NA)	(NA)	49.2	24.8	18.2	6.3	82.0	22.9	41.2	17.9	-24	17	14	12	
1980..	(NA)	(NA)	48.7	24.6	17.9	6.2	81.3	22.7	40.9	17.7	-24	17	14	12	
1979..	(NA)	(NA)	65.1	30.1	(S)	(S)	70.1	23.3	(S)	(S)	31	23	19	11	
1979..	(NA)	(NA)	64.4	29.9	(S)	(S)	69.5	23.1	(S)	(S)	31	23	19	11	
1978..	13,963.1	606.1	49.8	21.7	27.0	1.2	56.9	17.8	27.9	11.3	48	22	15	10	
1978..	(NA)	(NA)	49.3	21.5	26.6	1.2	56.5	17.7	27.7	11.2	48	22	15	10	
1977..	12,276.1	470.1	33.6	19.9	12.6	1.1	46.7	15.5	22.0	9.2	117	35	6	9	
1977..	(NA)	(NA)	33.2	19.7	12.4	1.1	46.3	15.4	21.8	9.1	114	33	6	9	
1976..	10,604.8	472.7	15.5	6.8	8.2	0.5	34.7	11.8	14.3	8.6	-47	26	13	14	
1975..	9,416.9	342.7	29.4	17.4	10.7	1.4	27.6	9.3	13.7	4.6	38	28	15	10	
1974..	9,071.3	353.6	21.3	11.5	8.8	1.0	21.5	7.8	9.7	4.0	-8	-23	14	5	
1973..	7,845.7	239.0	26.7	15.0	10.4	1.3	21.2	8.6	7.9	4.7	(X)	(X)	7	5	
Louisiana.....															
1980..	(NA)	(NA)	202.7	134.7	60.2	7.7	416.0	154.4	193.1	68.5	-8	3	4	1	
1980..	(NA)	(NA)	200.4	133.5	59.3	7.6	412.6	153.2	191.5	67.8	-8	3	4	1	
1979..	(NA)	(NA)	220.5	107.5	98.1	15.0	405.5	172.1	185.8	47.6	-10	35	1	2	
1979..	(NA)	(NA)	218.2	106.6	96.8	14.8	402.2	170.8	184.3	47.1	-10	35	1	2	
1978..	31,852.7	2,103.8	245.9	113.2	112.1	20.8	300.1	89.2	169.5	41.4	5	14	2	1	
1978..	(NA)	(NA)	243.2	112.1	110.6	20.5	297.7	88.5	168.1	41.1	5	14	2	1	
1977..	29,493.3	2,072.8	234.5	61.1	153.9	19.7	262.3	89.8	142.0	30.7	16	25	2	1	
1977..	(NA)	(NA)	231.9	60.5	152.0	19.4	260.1	89.0	140.7	30.4	14	24	2	1	
1976..	25,225.2	1,560.8	203.0	74.0	124.5	4.5	210.6	98.3	87.6	24.8	6	40	5	8	
1975..	22,160.4	1,164.1	191.1	106.8	76.0	8.4	150.3	65.9	68.2	16.0	36	33	2	5	
1974..	19,576.0	948.2	140.9	77.2	62.4	1.4	113.4	49.5	51.6	12.2	96	44	4	3	
1973..	12,968.2	704.3	72.0	31.3	38.5	2.1	78.7	33.8	35.8	9.1	(X)	(X)	10	5	
Oklahoma.....															
1980..	(NA)	(NA)	35.3	18.4	14.6	2.3	56.7	23.3	17.7	15.4	45	35	9	11	
1980..	(NA)	(NA)	34.9	18.2	14.4	2.3	56.2	23.1	17.6	15.3	45	34	9	11	
1979..	(NA)	(NA)	24.4	18.2	(S)	(S)	42.1	17.3	(S)	(S)	-5	24	4	10	
1979..	(NA)	(NA)	24.1	18.1	(S)	(S)	41.8	17.2	(S)	(S)	-5	24	4	10	
1978..	14,011.8	445.0	25.8	19.7	5.9	0.2	33.9	14.4	12.5	7.1	128	-14	5	9	
1978..	(NA)	(NA)	25.5	19.5	5.8	0.2	33.6	14.3	12.4	7.0	128	-14	5	9	
1977..	12,564.5	485.8	11.3	5.4	5.7	0.4	39.3	21.2	12.2	5.9	-55	106	5	7	
1977..	(NA)	(NA)	11.2	5.3	5.6	0.4	39.0	21.0	12.1	5.9	-56	104	5	7	
1976..	10,126.0	410.6	25.3	19.0	6.3	0.1	19.1	10.3	4.6	4.2	72	-4	32	9	
1975..	8,889.5	358.3	14.7	10.3	4.2	0.2	19.9	9.3	6.4	4.2	-29	2	16	13	
1974..	7,945.2	339.2	20.7	18.5	1.4	0.7	19.6	9.5	6.4	3.7	50	45	35	12	
1973..	6,336.1	253.5	13.8	9.5	4.2	0.1	13.5	5.1	5.7	2.7	(X)	(X)	34	11	
Texas.....															
1980..	(NA)	(NA)	305.2	179.8	99.5	25.9	1,048.2	519.6	360.0	168.3	-18	25	5	3	
1980..	(NA)	(NA)	301.8	178.2	98.1	25.5	1,039.6	515.6	357.1	166.7	-18	25	5	3	
1979..	(NA)	(NA)	372.7	243.4	106.6	22.7	838.4	400.9	320.1	117.4	-16	12	1	1	
1979..	(NA)	(NA)	368.8	241.4	105.2	22.3	831.4	397.8	317.5	116.1	-16	12	1	1	
1978..	104,646.8	4,601.7	442.7	310.6	105.8	26.1	749.8	357.9	267.1	125.1	-12	13	4	3	
1978..	(NA)	(NA)	437.8	307.7	104.4	25.8	743.5	354.6	264.9	124.0	-12	13	4	3	
1977..	92,871.9	5,194.7	394.1	167.6	197.0	29.6	664.2	311.4	245.5	107.1	-21	48	1	1	
1977..	(NA)	(NA)	389.7	166.0	194.5	29.2	658.6	308.8	243.4	106.2	-22	47	1	1	
1976..	77,120.1	4,768.1	500.1	242.8	235.1	22.2	449.4	185.6	195.5	68.4	-30	36	2	2	
1975..	65,458.0	3,804.6	384.4	244.9	128.6	10.8	330.6	129.5	148.0	53.2	23	23	1	2	
1974..	58,948.6	3,035.9	313.3	185.4	110.4	17.5	268.0	99.0	123.4	45.5	55	27	4	1	
1973..	42,982.3	1,534.0	201.9	120.5	75.6	5.7	210.6	84.0	96.6	29.7	(X)	(X)	6	4	
Mountain Division.....															
1980..	(NA)	(NA)	103.6	73.9	24.3	5.3	247.6	171.9	48.2	27.6	1	3	(NA)	(NA)	
1980..	(NA)	(NA)	102.5	73.3	23.9	5.2	245.5	170.6	47.8	27.3	1	3	(NA)	(NA)	
1979..	(NA)	(NA)	102.3	73.2	22.9	6.1	241.5	170.7	47.8	22.9	5	19	(NA)	(NA)	
1979..	(NA)	(NA)	101.2	72.6	22.6	6.0	239.5	169.4	47.4	22.7	5	19	(NA)	(NA)	
1978..	38,054.2	1,620.7	97.2	79.6	13.7	3.6	202.5	148.6	30.8	23.1	-48	16	(NA)	(NA)	
1978..	(NA)	(NA)	96.1	78.8	13.5	3.6	201.1	147.6	30.6	22.9	-48	17	(NA)	(NA)	
1977..	32,713.3	1,486.5	187.9	155.0	30.7	1.8	174.0	122.3	32.7	19.3	(X)	31	(NA)	(NA)	
1977..	(NA)	(NA)	185.8	153.5	30.3	1.8	172.5	121.2	32.4	19.1	(X)	29	(NA)	(NA)	
1976..	29,474.0	1,158.8	(D)	(D)	(D)	(D)	132.8	88.6	(D)	(D)	(X)	23	(NA)	(NA)	
1976..	(NA)	(NA)	191.8	162.4	24.0	5.4	107.9	75.8	21.3	11.0	8	18	2	(NA)	
1975..	26,074.6	1,236.4	177.2	154.4	21.2	1.8	91.5	55.1	20.7	15.6	-2	33	(NA)	(NA)	
1974..	25,427.6	1,137.5	177.2	154.4	21.2	1.8	91.5	55.1	20.7	15.6	-2	33	(NA)	(NA)	
1973..	20,804.7	829.6	181.3	157.1	23.5	0.6	68.8	35.2	18.4	15.3	(X)	(X)	(NA)	(NA)	
Montana.....															
1980..	(NA)	(NA)	12.8	11.3	0.8	0.8	23.0	17.9	3.5	1.7	11	7	11	3	
1980..	(NA)	(NA)	12.7	11.2	0.8	0.8	22.8	17.8	3.5	1.7	11	7	11	3	
1979..	(NA)	(NA)	11.5	9.8	(S)	(S)	21.5	16.0	3.9	1.5	35	31	6	4	
1979..	(NA)	(NA)	11.4	9.7	(S)	(S)	21.3	15.9	3.9	1.5	35	31	6	4	
1978..	3,070.5	130.6	8.5	6.8	(D)	(D)	16.4	11.9	3.3	1.2	-76	13	10	4	
1978..	(NA)	(NA)	8.4	6.7	(D)	(D)	16.3	11.8	3.3	1.2	-76	13	10	4	
1977..	2,683.4	119.8	35.2	29.7	(D)	(D)	14.5	10.7	2.4	1.4	40	-34	7	6	
1977..	(NA)	(NA)	34.8	29.4	(D)	(D)	14.4	10.7	2.4	1.4	39	-35	7	6	
1976..	2,524.9	85.6	25.1	(D)	(D)	(D)	0.1	22.0	17.3	5.9	0.8	11	68	5	3
1976..	(NA)	(NA)	22.7	21.0	(D)	(D)	13.1	10.0	2.5	0.5	(X)	2	3	6	
1975..	2,202.0	76.3	(D)	(D)	(D)	(D)	12.9	7.6	4.4	0.8	(X)	8	(X)	9	
1974..	2,217.4	99.8	(D)	(D)	(D)	(D)	12.9	7.6	4.4	0.8	(X)	8	(X)	9	
1973..	1,793.7	66.3	17.3	15.9	1.4	(Z)	11.9	7.2	(D)	(X)	(X)	8	8	4	
Idaho.....															
1980..	(NA)	(NA)	26.1	20.8	3.5	1.8	36.1	22.0	9.7	4.5	-5	8	8	4	
1980..	(NA)	(NA)	25.8	20.6	3.4	1.8	35.8	21.8	9.6	4.5	-5	8	8	4	
1979..	(NA)	(NA)	27.6	16.9	7.6	3.0	33.4	17.4	10.7	5.2	200	39	7	7	
1979..	(NA)	(NA)	27.3	16.8	7.5										

Table 1B. Pollution Abatement Capital Expenditures and Operating Costs, by Form of Abatement and State: 1973 to 1980—Continued

(In millions of dollars, except percents)

Division and State	Selected data from the Annual Survey of Manufactures (ASM)		Pollution abatement capital expenditures (PACE)				Pollution abatement gross annual costs, (GAC) including payments to government units				Percent change ¹		Standard error of estimates (percent)		
	Total value of shipments	Total new capital expenditures	Total	Air	Water	Solid waste	Total	Air	Water	Solid waste	PACE	GAC	PACE	GAC	
Mountain Division—Continued															
Wyoming.....	1980..	(NA)	(NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)	
	1980..	(NA)	(NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)	
	1979..	(NA)	(NA)	2.6	2.3	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	1	(X)
	1979..	(NA)	(NA)	2.6	2.3	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	1	(X)
	1978..	1,402.6	53.5	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)
	1978..	(NA)	(NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)
	1977..	1,287.8	36.2	2.8	1.8	(D)	(D)	4.7	2.2	1.6	0.9	180	96	24	25
	1977..	(NA)	(NA)	2.8	1.8	(D)	(D)	4.7	2.2	1.6	0.9	180	96	24	25
	1976..	833.2	30.5	1.0	0.5	0.5	(Z)	2.4	0.7	(D)	(D)	-38	(X)	15	20
	1975..	846.2	21.2	1.6	0.7	0.9	-	(D)	(D)	(D)	(D)	-82	-17	22	(X)
	1974..	712.6	17.2	8.8	7.4	1.4	-	2.3	1.0	1.1	0.2	(X)	-26	66	35
1973..	547.6	15.6	(D)	(D)	(D)	(D)	3.1	2.1	0.8	0.3	(X)	(X)	(X)	36	
Colorado.....	1980..	(NA)	(NA)	28.5	15.6	11.5	1.4	44.7	16.9	17.5	10.1	(X)	-13	4	6
	1980..	(NA)	(NA)	28.2	15.5	11.3	1.4	44.3	16.8	17.4	10.0	(X)	-13	4	6
	1979..	(NA)	(NA)	(S)	(S)	(S)	(S)	51.6	29.5	15.0	7.1	(X)	39	(X)	4
	1979..	(NA)	(NA)	(S)	(S)	(S)	(S)	51.2	29.3	14.9	7.0	(X)	39	(X)	4
	1978..	11,765.5	550.7	19.4	12.4	6.3	0.6	37.0	20.2	10.4	6.5	26	6	4	6
	1978..	(NA)	(NA)	19.2	12.3	6.2	0.6	36.7	20.0	10.3	6.4	26	6	4	6
	1977..	10,018.0	443.1	15.4	8.6	6.5	0.2	34.8	14.2	15.6	4.9	-52	28	39	8
	1977..	(NA)	(NA)	15.2	8.5	6.4	0.2	34.5	14.1	15.5	4.9	-109	26	39	8
	1976..	9,555.3	385.2	31.9	11.9	11.0	9.0	27.2	10.3	10.5	6.4	26	27	27	9
	1975..	8,388.2	365.0	25.3	10.4	(D)	(D)	20.6	9.1	7.2	4.3	81	6	7	6
	1974..	7,885.2	358.0	14.0	9.9	3.9	0.2	19.4	5.8	7.1	6.6	-32	14	11	12
1973..	6,473.3	310.6	20.7	18.1	2.3	0.3	17.1	5.4	5.9	5.8	(X)	(X)	17	9	
New Mexico.....	1980..	(NA)	(NA)	8.2	7.5	0.6	0.1	33.2	31.6	1.2	0.5	116	8	11	5
	1980..	(NA)	(NA)	8.1	7.4	0.6	0.1	32.9	31.4	1.2	0.5	116	9	11	5
	1979..	(NA)	(NA)	3.8	2.0	(S)	(S)	30.6	28.8	(S)	(S)	(X)	(X)	18	5
	1979..	(NA)	(NA)	3.8	2.0	(S)	(S)	30.3	28.6	(S)	(S)	(X)	(X)	18	5
	1978..	2,126.0	56.6	(S)	(S)	(S)	(S)	(D)	22.5	1.0	(D)	(X)	(X)	(X)	(X)
	1978..	(NA)	(NA)	(S)	(S)	(S)	(S)	(D)	22.3	1.0	(D)	(X)	(X)	(X)	(X)
	1977..	2,009.2	75.5	(D)	(D)	1.0	0.2	21.9	19.6	0.7	1.6	(X)	448	(X)	5
	1977..	(NA)	(NA)	(D)	(D)	1.0	0.2	21.7	19.4	0.7	1.6	(X)	443	(X)	5
	1976..	1,534.0	119.5	2.0	1.5	0.4	0.1	4.0	3.2	0.3	0.6	(X)	(X)	21	5
	1975..	1,303.1	177.9	(D)	(D)	(D)	-	(D)	(D)	(D)	(D)	(X)	82	(X)	(X)
	1974..	1,272.9	144.2	(D)	(D)	(D)	(D)	1.7	1.2	0.1	0.3	(X)	325	(X)	5
1973..	1,060.5	59.0	(D)	(D)	(D)	(D)	0.4	0.1	0.1	0.1	(X)	(X)	(X)	15	
Arizona.....	1980..	(NA)	(NA)	10.2	8.2	1.4	0.6	62.1	49.4	7.7	5.1	-39	-6	13	2
	1980..	(NA)	(NA)	10.1	8.1	1.4	0.6	61.6	49.0	7.6	5.0	-39	-6	13	2
	1979..	(NA)	(NA)	16.7	14.8	(S)	(S)	65.8	51.3	(S)	(S)	(X)	(X)	-2	7
	1979..	(NA)	(NA)	16.5	14.7	(S)	(S)	65.3	50.9	(S)	(S)	(X)	(X)	-2	7
	1978..	8,051.9	318.2	(S)	(S)	(S)	(S)	67.4	59.1	3.3	4.8	(X)	12	(X)	15
	1978..	(NA)	(NA)	(S)	(S)	(S)	(S)	66.9	58.7	3.3	4.8	(X)	12	(X)	15
	1977..	7,022.4	213.7	(NA)	(NA)	(D)	(D)	60.4	53.9	3.0	3.2	-69	47	11	14
	1977..	(NA)	(NA)	4.0	2.4	(D)	(D)	59.9	53.5	3.0	3.3	-69	45	11	14
	1976..	6,232.9	183.2	12.9	11.3	1.6	(Z)	41.2	37.2	2.0	2.0	(X)	13	3	2
	1975..	5,517.0	292.9	(D)	(D)	(D)	(D)	36.4	32.2	2.0	2.2	-45	37	(X)	2
	1974..	5,742.3	247.1	83.5	82.4	(D)	(D)	26.5	21.5	2.0	2.9	-18	104	1	4
1973..	4,939.7	219.4	102.2	101.6	0.4	0.1	13.0	6.7	1.8	4.5	(X)	(X)	1	8	
Utah.....	1980..	(NA)	(NA)	13.6	8.3	4.8	0.5	38.6	28.9	5.1	4.4	-7	27	13	4
	1980..	(NA)	(NA)	13.5	8.2	4.8	0.5	38.3	28.7	5.1	4.4	-7	27	13	4
	1979..	(NA)	(NA)	14.7	13.1	(S)	(S)	30.5	22.7	4.7	3.0	-69	18	8	3
	1979..	(NA)	(NA)	14.5	13.0	(D)	(D)	30.2	22.5	4.7	3.0	-69	18	8	3
	1978..	5,935.9	248.2	48.0	(D)	0.6	(D)	25.8	18.6	3.9	3.1	(X)	51	1	3
	1978..	(NA)	(NA)	47.5	(D)	0.6	(D)	25.6	18.5	3.9	3.1	(X)	51	1	3
	1977..	5,092.8	393.6	(D)	(D)	5.1	(Z)	17.1	11.9	2.9	2.3	(X)	30	(X)	3
	1977..	(NA)	(NA)	(D)	(D)	5.0	(Z)	16.9	11.8	2.9	2.3	(X)	28	(X)	3
	1976..	4,640.6	141.9	(D)	(D)	(D)	(D)	13.2	9.7	2.4	1.1	(X)	5	(X)	2
	1975..	4,131.2	131.6	(D)	(D)	(D)	(D)	12.6	9.5	2.3	0.8	118	5	(X)	5
	1974..	4,053.8	114.3	28.4	23.4	4.8	0.3	12.0	9.2	1.8	1.0	279	29	8	3
1973..	3,124.8	70.8	7.5	4.6	2.9	(Z)	9.3	6.5	2.4	0.4	(X)	(X)	10	7	
Nevada.....	1980..	(NA)	(NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)
	1980..	(NA)	(NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)
	1979..	(NA)	(NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)
	1979..	(NA)	(NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)
	1978..	1,216.2	68.2	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)
	1978..	(NA)	(NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)	(X)	(X)	(X)
	1977..	942.0	46.4	1.5	0.3	1.2	-	1.8	1.0	0.6	0.2	-69	-56	5	17
	1977..	(NA)	(NA)	1.5	0.3	1.2	-	1.8	1.0	0.6	0.2	-69	-56	5	17
	1976..	724.8	53.0	4.9	3.9	1.1	(Z)	4.1	2.0	1.3	0.7	-42	-31	32	20
	1975..	638.4	28.5	8.5	6.1	(D)	(D)	5.9	4.3	0.9	0.7	37	37	17	26
	1974..	640.2	24.3	6.2	3.9	2.3	(Z)	4.3	3.5	0.4	0.4	13	13	16	35
1973..	519.9	12.7	5.5	2.1	3.4	(Z)	3.8	2.8	(D)	(D)	(X)	(X)	47	34	
Pacific Division.....	1980..	(NA)	(NA)	401.5	269.5	108.3	23.5	900.5	420.2	300.4	179.7	3	14	(NA)	(NA)
	1980..	(NA)	(NA)	397.0	267.1	106.7	23.2	893.1	417.0	297.9	178.0	3	14	(NA)	(NA)
	1979..	(NA)	(NA)	389.3	231.1	129.6	28.6	793.2	368.4	270.2	154.6	24	12	(NA)	(NA)
	1979..	(NA)	(NA)	385.2	229.2	127.9	28.1	786.7	365.6	268.0	153.1	24	12	(NA)	(NA)
	1978..	181,258.8	6,184.8	314.4	192.5	111.1	10.5	706.9	336.0	231.8	139.4	-8	15	(NA)	(NA)
	1978..	(NA)	(NA)	310.9	190.7	109.7	10.4	700.8	333.1	229.8	138.2	-8	15	(NA)	(NA)
	1977..	160,237.0	5,032.4	343.1	(D)	158.7	(D)	616.5	303.6	201.0	112.1	(X)	13	(NA)	(NA)
	1977..	(NA)	(NA)	339.3	(D)	156.7	(D)	611.4	301.1	199.3	111.2	(X)	10	(NA)	(NA)
	1976..	135,959.6	4,133.7	(D)	(D)	140.2	15.1	546.9	246.7	202.1	98.0	(X)	20	(NA)	(NA)
	1975..	119,286.4	3,993.2	365.7	228.6	115.4	21.8	455.4	207.4	164.9	83.2	-7	18	(NA)	(NA)
	1974..	114,928.7	3,656.3	394.7	275.9	97.9	21.0	385.8	164.4	147.0	74.4	20	17	(NA)	(NA)
1973..	98,045.4	2,775.4	330.2	217.7	94.4	13.0	329.6	151.5	117.1	61.0	(X)	(X)	(NA)	(NA)	

See footnotes at end of table.

Table 1B. Pollution Abatement Capital Expenditures and Operating Costs, by Form of Abatement and State: 1973 to 1980—Continued

(In millions of dollars, except percents)

Division and State	Selected data from the Annual Survey of Manufactures (ASM)		Pollution abatement capital expenditures (PACE)				Pollution abatement gross annual costs, (GAC) including payments to government units				Percent change ¹		Standard error of estimates (percent)	
	Total value of shipments	Total new capital expenditures	Total	Air	Water	Solid waste	Total	Air	Water	Solid waste	PACE	GAC	PACE	GAC
Pacific Division--Continued														
Washington.....	1980.. (NA)	(NA)	87.7	47.2	36.8	3.3	175.9	77.9	72.7	25.3	43	9	14	1
	1980.. (NA)	(NA)	86.7	46.8	36.3	3.3	174.5	77.3	72.1	25.1	43	9	14	1
	1979.. (NA)	(NA)	153.8	71.2	72.7	10.1	160.9	79.9	60.7	20.3	52	22	5	1
	1979.. (NA)	(NA)	152.2	70.6	71.7	9.9	159.6	79.3	60.2	20.1	52	22	5	1
	1978.. 25,604.1	943.3	101.3	43.4	54.4	3.4	131.4	62.0	48.8	20.5	-11	7	4	2
	1978.. (NA)	(NA)	100.2	43.0	53.7	3.4	130.3	61.5	48.4	20.3	-11	7	4	2
	1977.. 21,746.9	850.0	114.4	47.1	65.4	1.9	122.4	54.7	49.6	18.2	30	14	5	2
	1977.. (NA)	(NA)	113.1	46.7	64.6	1.9	121.4	54.2	49.2	18.0	28	14	5	2
	1976.. 18,842.8	662.2	88.3	31.1	56.4	0.9	106.9	46.1	40.2	20.6	-22	10	6	3
	1975.. 16,932.5	808.0	113.9	66.2	44.6	3.1	97.6	38.0	35.8	23.8	-9	27	7	3
	1974.. 16,068.2	560.0	125.3	91.6	25.8	8.1	77.0	29.1	27.5	20.5	5	25	5	3
	1973.. 13,524.2	446.3	119.2	78.5	38.6	2.1	61.7	21.7	25.6	14.5	(X)	(X)	4	6
Oregon.....	1980.. (NA)	(NA)	55.3	37.6	10.8	6.9	89.5	29.7	39.5	20.2	3	-3	8	6
	1980.. (NA)	(NA)	54.7	37.3	10.6	6.8	88.8	29.5	39.2	20.0	3	-3	8	6
	1979.. (NA)	(NA)	54.1	33.0	(S)	(S)	92.7	29.2	37.3	26.2	39	23	10	4
	1979.. (NA)	(NA)	53.5	32.7	(S)	(S)	91.9	29.0	37.0	25.9	39	23	10	4
	1978.. 16,753.0	659.1	39.0	25.5	11.5	1.9	75.4	25.0	29.6	20.9	-23	15	10	4
	1978.. (NA)	(NA)	38.6	25.3	11.4	1.9	74.7	24.8	29.3	20.7	-23	15	10	4
	1977.. 14,370.0	574.5	50.7	30.1	18.8	1.7	65.7	24.2	27.6	14.0	74	16	6	5
	1977.. (NA)	(NA)	50.1	29.8	18.6	1.7	65.1	24.0	27.3	13.9	71	15	6	5
	1976.. 12,229.2	378.2	29.2	9.0	(D)	(D)	56.7	20.8	25.5	10.4	-51	41	8	6
	1975.. 10,310.8	439.3	59.5	29.7	21.3	8.5	40.1	15.4	17.7	7.0	62	17	4	8
	1974.. 9,899.7	412.7	36.8	26.6	7.8	0.5	34.2	13.0	13.0	7.5	12	-3	6	8
	1973.. 9,067.0	332.6	32.8	20.1	9.2	3.5	35.2	14.0	14.0	5.4	(X)	(X)	9	7
California.....	1980.. (NA)	(NA)	238.3	170.7	54.7	12.7	617.3	310.4	178.9	128.0	36	19	6	4
	1980.. (NA)	(NA)	235.6	169.2	53.9	12.5	612.2	308.0	177.4	126.8	36	19	6	4
	1979.. (NA)	(NA)	174.8	124.5	44.7	5.5	520.3	256.8	161.7	101.8	4	8	6	1
	1979.. (NA)	(NA)	173.0	123.5	44.1	5.4	516.0	254.8	160.4	100.8	4	8	6	1
	1978.. 135,765.2	4,493.1	167.6	120.1	42.4	5.0	483.4	247.5	142.7	93.4	5	15	7	1
	1978.. (NA)	(NA)	165.7	119.0	41.9	4.9	479.6	245.5	141.6	92.7	5	15	7	1
	1977.. 120,895.8	3,385.4	159.3	90.5	59.8	8.9	420.8	223.6	121.0	76.3	-6	15	4	1
	1977.. (NA)	(NA)	157.5	89.7	59.0	8.8	417.3	221.7	120.0	75.7	-7	14	4	1
	1976.. 102,041.0	2,867.1	169.2	106.8	55.5	7.0	366.7	175.3	128.9	62.5	-10	21	16	2
	1975.. 89,415.1	2,572.8	188.1	130.9	47.5	9.8	302.6	149.4	105.4	47.9	-7	16	6	2
	1974.. 86,449.7	2,583.6	202.2	153.6	41.1	7.5	261.2	117.4	100.1	43.1	28	17	6	4
	1973.. 73,880.5	1,917.2	157.6	112.8	38.0	6.7	223.4	110.3	74.1	39.2	(X)	(X)	6	8
Alaska.....	1980.. (NA)	(NA)	8.3	6.9	1.5	-	6.0	0.3	4.0	1.7	(X)	-30	2	7
	1980.. (NA)	(NA)	8.2	6.8	1.5	-	6.0	0.3	4.0	1.7	(X)	-29	2	7
	1979.. (NA)	(NA)	(S)	(S)	(S)	(S)	8.6	0.6	6.4	1.6	(X)	-1	(X)	4
	1979.. (NA)	(NA)	(S)	(S)	(S)	(S)	8.5	0.6	6.3	1.6	(X)	-1	(X)	4
	1978.. 1,464.6	65.0	(S)	(S)	(S)	(S)	8.7	0.3	7.4	1.0	(X)	867	(X)	3
	1978.. (NA)	(NA)	(S)	(S)	(S)	(S)	8.6	0.3	7.4	1.0	(X)	856	(X)	3
	1977.. 1,250.3	178.1	15.0	(D)	13.9	(D)	0.9	(Z)	0.3	0.6	(X)	-78	8	30
	1977.. (NA)	(NA)	14.8	(D)	13.7	(D)	0.9	(Z)	0.3	0.6	(X)	-78	8	30
	1976.. 991.8	170.6	(D)	(D)	10.8	(D)	4.1	0.6	2.6	0.8	(X)	52	26	55
	1975.. 827.7	121.6	2.0	1.1	(D)	(D)	2.7	0.7	1.6	0.4	(X)	-7	8	10
	1974.. 672.9	49.8	(D)	(D)	(D)	(D)	2.9	0.9	1.4	0.5	(X)	107	(X)	16
	1973.. 487.3	42.7	(D)	(D)	(D)	(D)	1.4	0.5	0.7	0.2	(X)	(X)	(X)	6
Hawaii.....	1980.. (NA)	(NA)	11.9	7.1	4.2	0.6	11.7	1.9	5.2	4.4	(X)	8	19	14
	1980.. (NA)	(NA)	11.8	7.0	4.1	0.6	11.6	1.9	5.2	4.4	(X)	8	19	14
	1979.. (NA)	(NA)	(S)	(S)	(S)	(S)	10.8	1.9	4.1	4.7	(X)	42	(X)	13
	1979.. (NA)	(NA)	(S)	(S)	(S)	(S)	10.7	1.9	4.1	4.7	(X)	42	(X)	13
	1978.. 1,671.9	24.3	(S)	(S)	(S)	(S)	7.6	1.0	3.1	3.5	(X)	13	(X)	16
	1978.. (NA)	(NA)	(S)	(S)	(S)	(S)	7.6	1.0	3.1	3.5	(X)	13	(X)	16
	1977.. 1,974.0	44.4	3.8	2.8	0.8	0.2	6.7	1.2	2.5	3.0	-27	-46	53	15
	1977.. (NA)	(NA)	3.8	2.8	0.8	0.2	6.7	1.2	2.5	3.0	-27	-46	53	15
	1976.. 1,854.8	55.6	5.2	0.9	(D)	(D)	12.5	3.9	4.9	3.7	136	1	14	13
	1975.. 1,800.3	51.5	2.2	0.7	(D)	(D)	12.4	3.9	4.2	4.3	(X)	18	11	14
	1974.. 1,848.2	50.2	(D)	(D)	(D)	(D)	10.5	3.3	4.4	2.8	(X)	33	(X)	14
	1973.. 1,086.4	36.6	(D)	(D)	(D)	(D)	7.9	3.2	2.8	2.0	(X)	(X)	(X)	19

Note: Totals may not agree precisely with detail because of independent rounding. See "Limitations of Data" in the text for specific limitations of the 1973 statistics.

- Represents zero. (D) Withheld to avoid disclosing operations of individual companies. (NA) Not available. Revised. (S) Data suppressed because did not meet publication standards. This includes cells where PACE or GAC is less than \$5.0 million or the standard error is 20 or greater. See text. (X) Not applicable. (Z) Represents less than \$50,000.

¹The calculation of the percent change is based upon the change from the previous year to the subsequent year (e.g. 1973 to 1974). For 1977 through 1980, the comparison is done separately for all establishment totals and establishments with 20 or more employees.²Major industry group 23, Apparel and Other Textile Products, is excluded from all but the U.S. totals of the first two columns.³Two lines of data are presented for 1977 through 1980. The top line for each year represents the estimate for all establishments and is comparable to the estimates for 1973 to 1976. The bottom line is the estimate for establishments with 20 or more employees. See text.

Table 2A. Pollution Abatement Capital Expenditures, by Industry for Establishments With 20 or More Employees: 1980

(Millions of dollars)

SIC code	Industry	Total pollution abatement capital expenditures	Air							Water			Solid waste	Standard error of estimates (percent) PACE
			Total	By abatement technique		By type of pollutant abated				Total	By abatement technique			
				End of line	Changes in production processes	Particulates	Sulfur oxides	Nitrogen oxides, hydrocarbons, and carbon monoxides	Heavy metals, radioactive and toxic substances, and other		End of line	Changes in production processes		
	All industries ¹	3,502.9	2,105.5	1,766.9	338.6	1,113.9	328.8	495.9	166.8	1,146.5	993.8	152.6	251.0	3
20	Food and kindred products.....	208.2	61.7	54.3	7.4	52.6	1.4	2.3	5.4	133.0	98.2	34.8	13.5	4
201	Meat products.....	41.5	2.5	2.0	0.5	1.5	-	-	1.1	37.6	21.2	16.4	1.4	12
2011	Meatpacking plants.....	21.1	1.4	1.1	0.3	0.8	-	-	0.3	19.2	(D)	(D)	0.6	2
203	Preserved fruits and vegetables.....	28.1	3.5	2.6	0.8	2.2	-	-	1.2	21.6	14.9	6.7	3.1	8
2033	Canned fruits and vegetables.....	15.2	0.1	0.1	-	(D)	-	-	(D)	13.4	7.6	5.8	1.6	14
204	Grain mill products.....	30.9	17.2	15.5	1.7	15.9	0.3	0.2	0.7	10.6	9.4	1.2	3.1	1
2046	Wet corn milling.....	18.8	8.5	8.1	0.4	7.6	0.2	-	0.7	8.1	7.3	0.9	2.2	1
207	Fats and oils.....	31.0	20.0	18.1	1.9	17.5	0.4	1.0	0.8	10.6	8.9	1.7	0.5	7
2075	Soybean oil mills.....	20.7	14.8	13.1	1.7	13.8	(D)	0.7	(D)	5.7	(D)	(D)	0.2	6
2079	Shortening and cooking oils.....	5.0	1.3	1.3	-	0.6	(D)	(D)	(D)	3.6	(D)	(D)	0.1	2
208	Beverages.....	25.8	6.3	5.8	0.5	4.4	0.6	0.9	0.6	17.1	9.6	7.5	2.5	5
2082	Malt beverages.....	20.3	3.6	3.3	0.3	3.1	0.2	(D)	(D)	15.0	8.0	7.0	1.7	1
209	Misc. foods, kindred products.....	8.4	2.6	2.5	0.1	1.6	-	0.1	0.9	5.0	4.9	0.1	0.7	13
21	Tobacco products.....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(X)
22	Textile mill products.....	59.5	32.5	21.3	11.2	26.7	1.3	2.2	2.3	23.6	22.4	1.3	3.5	10
2211	Weaving mills, cotton.....	11.2	10.1	7.7	2.4	10.1	-	-	-	1.0	1.0	-	0.1	6
2221	Weaving mills, manmade fiber, silk.....	12.2	9.6	4.2	5.4	7.2	-	0.2	2.2	0.7	0.7	-	1.9	6
226	Textile finishing, except wool.....	7.7	3.2	(D)	(D)	1.9	1.1	0.1	-	(D)	4.0	(D)	(D)	3
2262	Finishing plants, manmade fiber, silk.....	6.8	2.4	(D)	(D)	1.3	1.1	-	-	(D)	3.8	(D)	(D)	14
227	Floor covering mills.....	8.3	0.9	(D)	(D)	0.8	0.1	-	-	(D)	7.0	(D)	(D)	14
2272	Tufted carpets and rugs.....	8.2	0.9	(D)	(D)	0.8	0.1	-	-	(D)	7.0	(D)	(D)	14
24	Lumber and wood products.....	81.5	55.8	49.2	6.6	48.1	-	6.4	1.3	15.6	13.2	2.4	10.1	12
2436	Softwood veneer and plywood.....	16.8	10.9	10.7	0.2	7.9	-	(D)	(D)	3.3	3.3	0.1	2.6	16
25	Furniture and fixtures.....	12.8	9.4	7.8	1.6	7.2	-	2.1	0.1	1.4	1.3	0.1	2.0	10
251	Household furniture.....	5.3	4.7	4.6	0.1	4.5	-	0.1	-	0.4	0.4	-	0.2	13
26	Paper and allied products.....	339.6	197.4	171.8	25.7	144.0	30.3	14.4	8.7	111.2	95.2	16.0	31.0	2
2611	Pulpmills.....	55.4	30.6	21.4	9.2	28.2	1.1	-	1.2	20.9	20.1	0.7	3.9	5
2621	Papermills, except building paper.....	145.9	94.0	92.1	2.0	61.4	25.7	(D)	(D)	40.5	35.1	5.3	11.4	1
2631	Paperboard mills.....	118.3	58.0	49.6	8.4	50.6	3.2	(D)	(D)	46.5	37.4	9.1	13.8	4
264	Misc. converted paper products.....	15.6	12.3	6.5	5.8	3.3	0.1	8.9	0.2	2.2	1.8	0.4	1.1	8
2641	Paper coating and glazing.....	9.1	8.3	2.9	5.5	0.4	-	8.0	-	0.1	0.1	-	0.6	7
27	Printing and publishing.....	12.8	9.0	6.8	2.2	3.5	0.1	5.2	0.2	1.7	1.4	0.2	2.1	11
275	Commercial printing.....	7.7	6.1	4.5	1.6	2.0	0.1	3.9	-	0.7	0.5	0.2	0.9	17
28	Chemicals and allied products.....	780.7	325.9	281.1	44.8	127.8	29.4	111.4	57.5	350.0	309.8	40.3	104.8	3
281	Industrial inorganic chemicals.....	156.5	68.5	61.4	7.1	43.1	9.2	3.3	13.2	74.4	63.0	11.4	13.5	6
2812	Alkalies and chlorine.....	24.9	6.1	(D)	(D)	1.5	(D)	(D)	3.2	15.0	14.8	0.2	3.8	5
2816	Inorganic pigments.....	16.2	3.1	(D)	(D)	2.0	(D)	(D)	0.7	12.7	7.1	5.6	0.4	7
2819	Industrial inorganic chemicals, n.e.c.....	111.9	56.9	50.9	6.0	39.0	9.0	0.4	8.8	45.9	40.9	5.0	9.1	8
282	Plastics materials, synthetics.....	114.4	66.7	46.5	20.2	23.2	12.3	15.2	16.2	39.5	35.1	4.4	8.3	3
2821	Plastics materials and resins.....	74.6	37.8	31.8	6.0	9.8	(D)	13.7	(D)	29.8	25.7	4.0	7.1	4
283	Drugs.....	32.5	7.7	7.3	0.4	3.3	0.4	3.0	0.9	21.4	18.2	3.2	3.4	3
2833	Medicinals and botanicals.....	17.8	3.6	3.3	0.3	1.7	(D)	1.2	(D)	12.8	(D)	(D)	1.4	6
2834	Pharmaceutical preparations.....	14.7	4.2	4.0	0.1	1.5	(D)	1.8	(D)	8.5	(D)	(D)	1.9	1
284	Soaps, cleaners, toilet goods.....	14.8	6.2	4.6	1.6	4.2	0.1	1.3	0.7	7.0	6.7	0.3	1.6	6
2841	Soap and other detergents.....	7.1	2.4	2.4	-	2.5	-	(D)	(D)	(D)	(D)	0.2	(D)	11
286	Industrial organic chemicals.....	332.0	134.3	123.3	11.1	28.2	5.4	85.1	15.6	134.1	120.9	13.2	63.5	2
2865	Cyclic crudes and intermediates.....	61.4	20.9	20.3	0.6	6.1	0.3	11.2	3.2	(D)	(D)	0.9	(D)	8
2869	Industrial organic chemicals, n.e.c.....	270.4	113.3	102.8	10.5	22.0	5.1	73.8	12.4	110.5	98.1	12.4	46.6	2
287	Agricultural chemicals.....	73.5	23.3	22.2	1.2	10.4	2.1	1.8	8.7	42.6	37.1	5.5	7.6	6
2873	Nitrogenous fertilizers.....	16.2	4.5	(D)	(D)	3.1	(D)	0.7	0.3	7.7	(D)	(D)	4.0	10
2874	Phosphatic fertilizers.....	25.3	10.9	(D)	(D)	6.3	(D)	-	3.0	13.6	(D)	(D)	0.9	3
2879	Agricultural chemicals, n.e.c.....	31.4	7.4	(D)	(D)	0.5	0.4	1.1	5.3	21.2	18.0	3.2	2.8	15
289	Miscellaneous chemical products.....	47.9	16.1	13.6	2.5	13.8	-	0.7	1.6	28.2	26.6	1.7	3.6	15
2892	Explosives.....	20.1	(D)	(D)	(D)	(D)	-	(D)	-	(D)	18.2	(D)	(D)	7
29	Petroleum and coal products.....	532.0	402.3	294.8	107.5	41.6	166.4	141.6	52.7	114.2	94.1	20.1	15.4	3
2911	Petroleum refining.....	509.3	387.9	281.3	106.6	28.7	166.3	140.1	52.6	110.2	90.3	20.0	11.2	3
299	Misc. petroleum, coal products.....	12.0	10.2	9.7	0.6	9.3	-	0.8	0.1	0.9	0.8	-	0.9	10
2999	Petroleum and coal products, n.e.c.....	11.0	9.9	9.5	0.5	(D)	-	(D)	-	0.2	0.2	-	0.9	10
30	Rubber, misc. plastics products.....	21.7	12.6	10.8	1.8	9.2	0.6	2.1	0.5	6.9	6.7	0.2	2.3	13
3079	Miscellaneous plastics products.....	14.1	7.5	6.1	1.5	5.0	0.6	1.4	0.4	5.3	5.3	0.1	1.2	19
31	Leather and leather products.....	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)
32	Stone, clay, glass products.....	151.0	123.1	113.1	10.1	120.0	1.6	0.7	0.8	17.9	15.0	2.9	10.0	12
322	Glass, pressed or blown.....	13.5	7.9	5.0	2.9	6.8	0.5	0.1	0.3	4.4	4.1	0.3	1.3	10
3229	Pressed and blown glass, n.e.c.....	9.1	5.3	3.5	1.8	(D)	-	0.1	(D)	2.8	2.7	-	1.0	13
3241	Cement, hydraulic.....	43.1	40.1	39.3	0.8	39.8	0.3	-	-	1.4	1.4	-	1.6	19
3296	Mineral wool.....	11.9	9.7	(D)	(D)	9.4	-	(D)	(D)	0.9	0.1	0.8	1.3	5

See footnotes at end of table.

Table 2A. Pollution Abatement Capital Expenditures, by Industry for Establishments With 20 or More Employees: 1980—Continued

(Millions of dollars)

SIC code	Industry	Total pollution abatement capital expenditures	Air							Water			Solid waste	Standard error of estimates (percent) PACE
			Total	By abatement technique		By type of pollutant abated				Total	By abatement technique			
				End of line	Changes in production processes	Particulates	Sulfur oxides	Nitrogen oxides, hydrocarbons, and carbon monoxides	Heavy metals, radioactive and toxic substances, and other		End of line	Changes in production processes		
33	Primary metal industries.....	740.0	539.7	452.9	86.8	419.5	92.7	13.7	13.8	180.7	160.3	20.3	19.6	1
331	Blast furnace, basic steel products.....	543.7	389.0	317.2	71.8	318.8	67.3	2.1	0.8	150.7	132.5	18.3	4.0	1
3312	Blast furnaces and steel mills.....	529.5	382.1	310.3	71.8	312.3	67.3	2.1	0.4	144.0	(D)	(D)	3.4	1
3313	Electrometallurgical products.....	6.6	5.4	5.4	-	(D)	-	-	(D)	1.2	1.2	-	-	1
332	Iron and steel foundries.....	67.6	57.9	48.8	9.1	51.1	1.0	5.2	0.5	4.9	4.9	0.1	4.7	6
3321	Gray iron foundries.....	50.0	43.3	(D)	(D)	36.5	1.0	5.2	0.4	(D)	(D)	(D)	(D)	7
3325	Steel foundries, n.e.c.....	11.2	10.4	10.2	0.2	10.4	-	-	-	(D)	(D)	(D)	(D)	18
333	Primary nonferrous metals.....	80.0	62.2	59.8	2.4	27.5	22.6	2.0	10.2	12.1	11.6	0.5	5.6	2
3331	Primary copper.....	18.0	(D)	(D)	(D)	5.5	6.6	(D)	(D)	(D)	(D)	(D)	(D)	8
3332	Primary lead.....	7.1	7.0	6.3	0.6	1.8	1.8	-	3.3	(D)	(D)	(D)	(D)	12
3333	Primary zinc.....	10.8	(D)	(D)	(D)	(D)	(D)	(D)	(D)	2.4	2.4	-	(D)	1
3334	Primary aluminum.....	31.0	19.5	(D)	(D)	15.4	(D)	(D)	1.3	6.0	6.0	-	5.4	1
3339	Primary nonferrous metals, n.e.c.....	13.1	10.4	10.4	-	(D)	(D)	-	1.2	(D)	(D)	(D)	(D)	6
3341	Secondary nonferrous metals.....	20.0	14.6	12.6	2.0	10.8	1.4	0.3	2.1	4.0	3.0	1.0	1.4	17
335	Nonferrous rolling and drawing.....	21.7	11.2	10.0	1.2	6.7	0.5	3.8	0.2	7.8	7.3	0.4	2.7	2
3353	Aluminum sheet, plate, and foil.....	9.0	4.5	4.5	-	2.8	-	1.8	-	2.3	2.3	-	2.1	1
34	Fabricated metal products.....	76.4	37.5	31.8	5.7	22.2	0.6	12.3	2.4	34.8	30.5	4.3	4.2	6
341	Metal cans, shipping containers.....	7.6	5.7	3.1	2.5	1.0	-	4.0	0.8	1.8	1.7	-	0.2	19
342	Cutlery, handtools and hardware.....	8.7	2.7	2.3	0.3	1.9	-	0.4	0.3	5.5	5.1	0.4	0.5	6
3429	Hardware, n.e.c.....	7.2	1.8	1.7	0.1	1.2	-	0.2	0.3	4.9	4.5	0.4	0.5	6
344	Fabricated structural metal products.....	11.0	8.4	8.0	0.4	4.2	-	4.2	0.1	2.3	2.1	0.2	0.3	11
3444	Sheet metalwork.....	5.7	5.4	5.4	-	(D)	-	(D)	-	(D)	(D)	(D)	(D)	16
345	Screw machine products, bolts, etc.....	6.2	1.3	1.2	0.1	0.9	-	0.2	0.1	4.8	4.7	0.1	0.1	19
346	Metal forgings and stampings.....	13.0	7.8	6.4	1.4	5.7	0.5	1.3	0.3	4.7	3.6	1.1	0.5	10
3465	Automotive stampings.....	5.2	3.6	(D)	(D)	3.3	(D)	(D)	-	1.4	1.4	-	0.1	7
349	Misc. fabricated metal products.....	6.9	3.6	3.4	0.3	2.5	0.1	0.7	0.4	2.5	1.6	0.9	0.8	9
35	Machinery, except electrical.....	74.5	34.0	27.4	6.7	23.7	0.6	6.7	3.0	34.9	31.8	3.2	5.6	17
351	Engines and turbines.....	7.0	3.5	3.2	0.3	3.1	-	0.2	0.2	2.7	2.7	-	0.8	2
3519	Internal combustion engines, n.e.c.....	6.6	3.2	(D)	(D)	3.0	-	0.2	0.1	2.7	2.6	-	0.7	2
352	Farm and garden machinery.....	11.6	9.4	7.5	2.0	7.3	-	1.8	0.2	2.0	1.4	0.5	0.2	3
3523	Farm machinery and equipment.....	11.1	9.0	(D)	(D)	(D)	-	(D)	0.2	1.9	(D)	(D)	0.2	3
353	Construction, related machinery.....	17.2	7.9	5.7	2.2	7.1	0.4	0.3	0.1	8.5	8.3	0.2	0.8	13
3531	Construction machinery.....	10.8	(D)	(D)	(D)	3.2	(D)	(D)	(D)	(D)	(D)	(D)	0.3	1
355	Special industry machinery.....	5.3	2.6	2.4	0.2	1.4	-	0.2	1.0	2.3	2.3	0.1	0.3	12
356	General industrial machinery.....	5.6	2.9	2.3	0.6	2.0	0.2	0.6	0.1	1.9	1.4	0.5	0.8	6
357	Office and computing machines.....	6.5	1.6	1.5	0.1	0.4	-	0.9	0.2	4.2	3.0	1.2	0.7	4
358	Refrigeration and service machines.....	15.0	2.5	1.3	1.2	0.2	-	2.1	0.2	11.4	10.7	0.7	1.0	1
3585	Refrigeration, heating equipment.....	14.9	2.4	1.2	1.2	0.1	-	2.1	0.2	(D)	(D)	(D)	(D)	1
36	Electric, electronic equipment.....	79.0	43.5	34.0	9.5	15.2	0.7	17.4	10.2	27.1	24.1	3.0	8.4	3
362	Electrical industrial apparatus.....	9.0	5.0	3.5	1.5	4.1	-	0.6	0.3	2.0	1.7	0.2	2.0	12
363	Household appliances.....	8.4	4.6	1.9	2.8	2.4	0.1	1.9	0.2	2.9	2.7	0.2	0.9	2
364	Electric lighting, wiring equipment.....	6.6	3.0	2.9	0.1	1.6	-	0.5	0.9	2.7	2.5	0.1	0.9	17
366	Communication equipment.....	6.6	2.8	2.5	0.3	1.3	0.2	0.9	0.3	2.7	2.5	0.2	1.2	6
367	Electronic components, accessories.....	27.2	16.4	16.1	0.3	1.2	0.2	12.9	2.1	9.7	8.6	1.2	1.0	5
3674	Semiconductors, related devices.....	13.0	7.7	7.6	0.1	0.6	0.1	5.7	1.4	4.9	4.6	0.3	0.4	7
3679	Electronic components, n.e.c.....	10.9	7.7	7.5	0.2	0.4	0.1	(D)	(D)	2.9	(D)	(D)	0.4	6
369	Misc. electronic equipment, supplies.....	13.4	7.8	5.9	1.8	1.3	0.2	0.2	6.1	4.5	4.1	0.4	1.1	11
3691	Storage batteries.....	9.9	6.0	4.5	1.5	0.4	(D)	(D)	5.5	2.9	2.6	0.4	0.9	15
37	Transportation equipment.....	275.0	201.4	193.5	7.9	45.2	1.5	152.4	2.3	60.7	58.6	2.2	12.9	1
371	Motor vehicles and equipment.....	245.8	185.7	178.6	7.1	34.5	1.3	149.1	0.8	51.5	50.1	1.4	8.5	1
3711	Motor vehicles and car bodies.....	193.9	166.6	165.1	1.4	22.8	0.7	142.8	0.3	21.1	(D)	(D)	6.3	1
3714	Motor vehicle parts, accessories.....	51.0	18.6	13.1	5.6	11.1	0.6	6.2	0.5	30.3	29.6	0.6	2.1	2
372	Aircraft and parts.....	11.1	5.5	5.3	0.2	3.7	-	1.6	0.2	4.6	3.9	0.6	1.1	3
373	Ship, boat building, repairing.....	8.7	6.4	5.9	0.5	4.2	-	1.4	0.8	1.8	1.8	-	0.6	7
3731	Ship building and repairing.....	7.6	5.6	(D)	(D)	3.9	-	(D)	(D)	1.7	1.7	-	0.3	3
376	Guided missiles, space vehicles.....	5.4	1.6	1.5	0.1	0.6	0.2	0.3	0.4	1.6	1.5	-	2.2	1
38	Instruments, related products.....	27.2	11.3	8.8	2.4	2.1	1.4	4.0	3.6	12.7	11.4	1.3	3.2	9
382	Measuring, controlling devices.....	5.9	0.9	0.5	0.4	0.5	0.1	0.2	0.1	3.1	3.1	0.1	1.9	10
3861	Photographic equipment and supplies.....	14.7	6.4	6.4	-	0.3	(D)	(D)	1.4	7.1	6.6	0.5	1.1	7
39	Misc. manufacturing industries.....	11.0	6.4	5.7	0.6	3.4	0.1	0.9	2.0	4.2	4.1	0.1	0.5	19
399	Miscellaneous manufactures.....	5.6	3.6	3.2	0.4	1.4	0.2	0.2	1.7	1.7	1.7	-	0.4	15

Note: Totals may not agree precisely with detail because of independent rounding.

No 3- or 4-digit industries are shown where PACE is less than \$5.0 million or the standard error is 20 or greater.

- Represents zero. (D) Withheld to avoid disclosing operations of individual companies. (S) Data suppressed because did not meet publication standards. This includes cases where PACE is less than \$5.0 million or the standard error is 20 or greater. See text. (X) Not applicable.

¹Excludes major industry group 23, Apparel and Other Textile Products.

Table 2B. Pollution Abatement Capital Expenditures, by State and Major Industry Group for Establishments With 20 or More Employees: 1980

(Millions of dollars)

SIC code	State and major industry group	Total pollution abatement capital expenditures	Air							Water			Solid waste	Standard error of estimates (percent) PACE
			Total	By abatement technique		By type of pollutant abated				Total	By abatement technique			
				End of line	Changes in production processes	Particulates	Sulfur oxides	Nitrogen oxides, hydrocarbons, and carbon monoxides	Heavy metals, radioactive and toxic substances, and other		End of line	Changes in production processes		
	United States ¹	3,502.9	2,105.5	1,766.9	338.6	1,113.9	328.8	495.9	166.8	1,146.5	993.8	152.6	251.0	3
	New England Division:													
	Maine	20.9	13.8	12.9	0.9	9.1	4.5	0.2	-	6.2	5.7	0.5	0.9	7
26	Paper and allied products	16.1	10.9	(D)	(D)	6.7	(D)	(D)	-	(D)	4.0	(D)	(D)	1
	New Hampshire	25.6	16.9	16.8	0.1	8.8	8.1	-	-	8.3	7.9	0.3	0.4	18
26	Paper and allied products	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(X)
	Vermont	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)
	Massachusetts	24.0	12.9	10.8	2.1	8.6	2.1	1.9	0.3	9.2	8.1	1.2	1.9	11
	Rhode Island	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)
	Connecticut	20.7	7.3	6.9	0.4	4.4	1.3	1.2	0.4	12.4	9.5	2.9	1.0	13
28	Chemicals and allied products	5.1	0.7	(D)	(D)	0.3	-	0.4	-	4.3	(D)	(D)	0.1	9
	Middle Atlantic Division:													
	New York	148.9	62.0	54.4	7.5	30.1	7.1	19.2	5.6	54.7	46.6	8.1	32.3	3
	Food and kindred products	8.1	1.4	(D)	(D)	1.3	-	-	-	6.3	1.9	4.4	0.5	8
26	Paper and allied products	10.6	(D)	8.1	(D)	(D)	4.9	(D)	-	1.6	1.2	0.4	(D)	15
28	Chemicals and allied products	55.6	14.4	13.2	1.2	7.9	0.3	4.0	2.2	16.9	15.4	1.5	(D)	3
32	Stone, clay, glass products	5.0	3.7	(D)	(D)	3.5	(D)	(D)	(D)	0.7	0.7	-	0.6	5
33	Primary metal industries	15.6	(D)	9.1	(D)	9.1	(D)	(D)	0.1	4.5	4.5	-	(D)	1
35	Machinery, except electrical	8.4	1.4	1.2	0.1	0.6	-	(D)	(D)	6.7	(D)	(D)	0.3	1
36	Electric, electronic equipment	11.5	6.4	5.7	0.6	1.0	0.2	5.0	0.1	4.6	(D)	(D)	0.4	3
37	Transportation equipment	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(X)
38	Instruments, related products	14.6	(D)	4.4	(D)	0.6	(D)	(D)	3.0	7.2	6.6	0.6	(D)	15
	New Jersey	103.9	66.9	63.0	4.0	21.0	27.1	10.7	8.1	31.2	25.7	5.5	5.8	2
20	Food and kindred products	5.1	2.4	2.1	0.3	0.9	(D)	0.2	(D)	2.6	(D)	(D)	0.2	7
28	Chemicals and allied products	34.9	13.9	12.6	1.3	8.0	0.4	3.2	2.3	18.2	16.6	1.6	2.9	3
29	Petroleum and coal products	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(X)
32	Stone, clay, glass products	5.1	4.1	(D)	(D)	(D)	(D)	-	-	0.6	(D)	(D)	0.5	14
33	Primary metal industries	8.5	7.0	6.8	0.2	2.4	(D)	0.3	4.0	1.5	1.2	0.2	0.1	16
	Pennsylvania	346.1	245.6	192.4	53.3	165.4	61.2	11.9	7.0	87.5	76.6	10.8	13.0	1
20	Food and kindred products	6.0	1.0	0.9	0.1	0.9	-	-	-	3.6	3.4	0.2	1.4	13
26	Paper and allied products	9.2	3.5	2.9	0.7	1.3	(D)	(D)	-	4.5	(D)	(D)	1.2	9
28	Chemicals and allied products	28.6	13.3	(D)	(D)	1.4	(D)	2.1	(D)	13.9	13.3	0.7	1.3	5
29	Petroleum and coal products	30.7	18.9	(D)	(D)	(D)	(D)	(D)	0.1	(D)	5.7	(D)	(D)	1
33	Primary metal industries	233.1	182.8	139.9	42.8	142.4	39.3	(D)	(D)	46.5	(D)	(D)	3.8	1
36	Electric, electronic equipment	9.2	6.5	3.3	3.2	3.2	-	0.2	3.0	2.0	(D)	(D)	0.8	17
37	Transportation equipment	7.7	(D)	(D)	(D)	(D)	-	(D)	0.1	1.1	1.1	-	(D)	1
	East North Central Division:													
	Ohio	251.5	186.9	157.8	29.1	94.6	26.7	61.3	4.3	55.8	52.8	3.0	8.7	2
20	Food and kindred products	6.9	4.4	4.1	0.3	3.8	-	-	(D)	2.4	1.9	0.6	0.1	12
26	Paper and allied products	7.1	2.3	(D)	(D)	1.2	-	1.2	(D)	4.3	4.0	0.2	0.6	5
28	Chemicals and allied products	37.7	21.5	15.8	5.7	8.7	5.7	4.0	2.9	14.2	(D)	(D)	2.0	15
29	Petroleum and coal products	10.9	7.7	(D)	(D)	(D)	5.0	(D)	-	(D)	2.4	(D)	(D)	3
32	Stone, clay, glass products	12.6	10.1	(D)	(D)	9.9	-	(D)	(D)	0.9	(D)	(D)	1.6	16
33	Primary metal industries	78.3	65.8	46.6	19.2	50.2	(D)	(D)	0.1	11.2	(D)	(D)	1.2	2
34	Fabricated metal products	14.0	8.2	7.6	0.5	6.2	0.2	1.7	0.1	5.1	4.8	0.3	0.7	16
35	Machinery, except electrical	9.6	3.3	3.0	0.4	2.7	(D)	(D)	0.2	(D)	-	(D)	2	2
37	Transportation equipment	67.4	(D)	(D)	0.1	7.4	(D)	(D)	-	8.6	8.5	-	(D)	1
	Indiana	192.6	95.2	87.8	7.3	77.7	11.0	5.3	1.4	82.1	67.5	14.6	15.3	1
20	Food and kindred products	5.9	2.0	1.8	0.2	1.5	(D)	(D)	(D)	3.7	3.5	0.2	0.3	6
28	Chemicals and allied products	18.8	1.7	1.3	0.4	(D)	(D)	0.9	(D)	3.9	(D)	(D)	(D)	4
29	Petroleum and coal products	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(X)
33	Primary metal industries	134.1	73.1	68.1	5.0	71.6	0.6	0.7	0.1	58.8	(D)	(D)	2.2	2
37	Transportation equipment	4.9	1.1	1.0	0.1	0.6	(D)	(D)	(D)	3.6	3.5	0.1	0.1	14
	Illinois	136.6	75.7	59.5	16.2	50.8	10.4	10.1	4.4	48.9	43.1	5.8	12.0	2
20	Food and kindred products	19.5	7.3	6.6	0.7	7.0	-	(D)	0.2	9.0	8.1	0.9	3.2	5
28	Chemicals and allied products	26.9	9.4	6.7	2.7	5.0	0.2	1.0	3.2	12.2	8.6	3.6	5.3	5
29	Petroleum and coal products	9.6	5.3	(D)	(D)	1.6	-	2.8	(D)	3.9	3.9	-	0.5	1
33	Primary metal industries	34.9	32.4	(D)	(D)	23.8	(D)	0.4	(D)	1.9	1.8	0.1	0.6	1
35	Machinery, except electrical	16.6	(D)	7.0	(D)	6.8	(D)	(D)	-	(D)	(D)	(D)	0.2	1
37	Transportation equipment	5.0	1.3	1.3	-	1.2	-	-	0.1	(D)	(D)	-	(D)	2
	Michigan	163.5	83.6	71.0	12.5	47.4	2.4	31.5	2.3	66.3	61.3	5.0	13.6	2
25	Furniture and fixtures	3.8	2.1	1.2	0.8	0.9	-	1.2	(D)	0.2	(D)	(D)	(D)	19
28	Chemicals and allied products	25.9	10.1	(D)	(D)	3.3	(D)	(D)	0.6	12.5	10.9	1.6	3.4	7
33	Primary metal industries	47.0	(D)	26.6	(D)	25.3	(D)	(D)	(D)	15.0	14.9	0.1	(D)	1
37	Transportation equipment	55.8	26.0	24.2	1.8	9.1	(D)	15.8	(D)	27.7	(D)	(D)	2.1	1
	Wisconsin	67.7	27.1	24.0	3.1	17.9	0.7	6.5	2.3	33.6	31.2	2.4	7.0	12
26	Paper and allied products	16.8	1.6	1.4	0.1	(D)	(D)	-	-	13.5	12.5	1.1	1.7	19
37	Transportation equipment	5.3	4.3	(D)	(D)	0.5	(D)	(D)	(D)	(D)	(D)	-	(D)	3
	West North Central Division:													
	Minnesota	68.8	45.5	38.8	6.7	29.0	5.7	10.5	0.3	20.2	18.4	1.8	3.1	11
26	Paper and allied products	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(X)
29	Petroleum and coal products	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(X)
	Iowa	36.1	20.2	13.0	7.2	12.1	-	7.3	0.8	14.0	11.7	2.3	1.9	4
20	Food and kindred products	15.3	5.3	4.8	0.4	4.4	(D)	0.2	(D)	8.7	6.5	2.2	1.3	9
26	Paper and allied products	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(X)
28	Chemicals and allied products	5.1	1.7	(D)	(D)	1.4	(D)	(D)	(D)	3.2	(D)	(D)	0.2	3

See footnotes at end of table.

Table 2B. Pollution Abatement Capital Expenditures, by State and Major Industry Group for Establishments With 20 or More Employees: 1980—Continued

(Millions of dollars)

SIC code	State and major industry group	Total pollution abatement capital expenditures	Air							Water			Solid waste	Standard error of estimates (percent) PACE
			Total	By abatement technique		By type of pollutant abated				Total	By abatement technique			
				End of line	Changes in production processes	Particulates	Sulfur oxides	Nitrogen oxides, hydrocarbons, and carbon monoxides	Heavy metals, radioactive and toxic substances, and other		End of line	Changes in production processes		
West North Central Division--Continued														
28	Missouri.....	52.6	39.5	38.5	1.0	17.7	11.3	8.7	1.8	9.8	8.6	1.2	3.2	3
	Chemicals and allied products.....	14.8	9.9	(D)	(D)	3.7	-	(D)	3.7	(D)	(D)	(D)	1.2	9
29	Petroleum and coal products.....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(X)
33	Primary metal industries.....	6.8	6.5	6.4	0.1	4.4	(D)	(D)	(D)	(D)	(D)	(D)	(D)	7
	North Dakota.....	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)
	South Dakota.....	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)
	Nebraska.....	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)
29	Kansas.....	23.8	18.3	15.0	3.3	7.9	3.1	6.2	1.1	5.1	3.7	1.3	0.4	16
	Petroleum and coal products.....	9.0	(D)	(D)	(D)	(D)	(D)	(D)	-	1.8	(D)	(D)	(D)	1
South Atlantic Division:														
28	Delaware.....	82.0	48.5	47.9	0.6	10.1	12.5	24.7	1.2	32.2	27.1	5.1	1.3	1
	Chemicals and allied products.....	13.7	1.9	1.9	-	(D)	0.1	(D)	(D)	11.7	(D)	(D)	0.1	2
29	Petroleum and coal products.....	34.6	14.6	14.6	-	1.5	12.4	0.7	-	20.0	20.0	-	1.1	1
37	Transportation equipment.....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(X)
	Maryland.....	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)
33	Primary metal industries.....	5.4	2.6	2.6	-	(D)	-	(D)	(D)	2.1	2.1	-	0.7	13
37	Transportation equipment.....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(X)
	District of Columbia.....	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)
	Virginia.....	68.0	30.3	18.5	11.8	25.9	1.3	2.9	0.2	31.4	23.6	7.8	6.3	2
20	Food and kindred products.....	8.5	0.4	0.3	-	0.3	-	-	-	8.0	(D)	(D)	0.1	11
26	Paper and allied products.....	22.6	14.3	(D)	(D)	(D)	(D)	1.3	(D)	(D)	2.4	(D)	(D)	3
28	Chemicals and allied products.....	24.0	(D)	1.6	(D)	(D)	(D)	0.6	(D)	10.1	(D)	(D)	(D)	1
	West Virginia.....	59.1	23.6	22.5	1.1	17.9	4.1	0.2	1.4	26.0	25.6	0.3	9.5	5
28	Chemicals and allied products.....	18.9	3.6	3.5	-	2.0	(D)	0.2	(D)	7.4	(D)	(D)	7.9	12
32	Stone, clay, glass products.....	1.6	0.7	0.6	0.2	0.7	-	-	-	(D)	(D)	-	(D)	14
33	Primary metal industries.....	29.6	(D)	13.3	(D)	9.8	(D)	(D)	-	(D)	(D)	(D)	0.4	1
	North Carolina.....	81.2	46.6	33.7	12.8	41.8	1.3	0.9	2.5	28.0	23.4	4.6	6.6	7
26	Paper and allied products.....	26.6	20.4	(D)	(D)	(D)	(D)	-	(D)	3.7	(D)	(D)	2.5	1
32	Stone, clay, glass products.....	5.8	(D)	5.2	(D)	(D)	(D)	-	(D)	(D)	(D)	-	-	15
	South Carolina.....	51.2	27.7	22.0	5.7	20.0	0.2	0.8	6.7	20.9	18.2	2.8	2.5	5
22	Textile mill products.....	12.2	9.0	3.8	5.3	7.9	-	-	1.1	(D)	(D)	-	(D)	7
26	Paper and allied products.....	10.7	(D)	(D)	-	(D)	-	0.4	(D)	2.6	2.6	-	(D)	6
28	Chemicals and allied products.....	16.8	5.7	5.5	0.2	1.0	-	0.4	4.3	10.2	9.7	0.5	0.9	2
	Georgia.....	72.5	56.2	53.7	2.5	19.5	0.4	33.9	2.4	11.5	10.7	0.7	4.9	5
22	Textile mill products.....	5.5	3.6	2.9	0.7	2.3	(D)	0.3	(D)	0.7	(D)	(D)	1.3	6
26	Paper and allied products.....	13.5	9.1	(D)	(D)	8.5	(D)	(D)	(D)	3.3	(D)	(D)	1.1	1
37	Transportation equipment.....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(X)
	Florida.....	32.4	11.3	10.5	0.9	7.2	1.5	0.9	1.7	18.1	16.6	1.5	3.0	8
20	Food and kindred products.....	5.4	0.9	0.7	0.2	0.8	-	-	-	4.4	3.9	0.5	0.1	7
28	Chemicals and allied products.....	11.4	(D)	2.8	(D)	0.7	(D)	(D)	0.6	7.9	7.1	0.9	(D)	7
East South Central Division:														
28	Kentucky.....	47.1	24.5	21.1	3.4	12.1	5.2	5.8	1.4	11.7	10.8	0.9	10.9	12
	Chemicals and allied products.....	12.7	7.8	7.3	0.5	3.9	0.9	1.6	1.3	4.0	3.2	0.8	0.9	11
29	Petroleum and coal products.....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(X)
	Tennessee.....	78.7	32.6	30.0	2.6	23.0	0.6	6.7	2.0	41.1	38.3	2.9	5.0	9
28	Chemicals and allied products.....	51.0	12.7	12.3	0.4	8.3	(D)	(D)	1.0	35.0	32.7	2.2	3.4	14
33	Primary metal industries.....	6.8	4.8	4.5	0.2	4.4	(D)	(D)	-	(D)	1.6	(D)	(D)	8
	Alabama.....	86.9	57.3	52.7	4.6	32.2	5.5	7.5	12.0	26.0	24.7	1.3	3.6	9
26	Paper and allied products.....	18.1	10.4	(D)	(D)	(D)	-	-	(D)	6.1	(D)	(D)	1.6	1
28	Chemicals and allied products.....	31.4	(D)	(D)	(D)	1.4	(D)	0.2	(D)	13.6	13.6	-	(D)	2
33	Primary metal industries.....	13.2	11.4	(D)	(D)	9.7	(D)	(D)	(D)	1.8	1.8	-	-	4
36	Electric, electronic equipment.....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(X)
	Mississippi.....	20.8	8.4	7.8	0.6	5.7	0.2	1.1	1.4	11.1	11.0	0.1	1.3	11
26	Paper and allied products.....	6.4	1.6	1.6	-	(D)	-	-	(D)	(D)	(D)	-	(D)	1
West South Central Division:														
29	Arkansas.....	48.7	24.6	15.1	9.6	11.4	2.2	2.5	8.5	17.9	15.5	2.4	6.2	14
	Petroleum and coal products.....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(X)
	Louisiana.....	200.4	133.5	76.6	56.9	34.1	20.7	50.3	28.3	59.3	51.6	7.8	7.6	4
26	Paper and allied products.....	7.3	6.1	(D)	(D)	5.3	(D)	(D)	(D)	1.2	(D)	(D)	-	1
28	Chemicals and allied products.....	102.6	53.5	47.4	6.1	10.3	2.1	35.1	6.0	43.0	40.0	3.0	6.0	6
29	Petroleum and coal products.....	74.4	64.3	14.3	50.0	(D)	17.7	13.6	(D)	9.7	5.9	3.8	0.4	1
33	Primary metal industries.....	8.4	5.1	5.1	-	3.2	-	-	(D)	(D)	(D)	(D)	(D)	6
	Oklahoma.....	34.9	18.2	7.6	10.6	2.4	2.0	4.4	9.3	14.4	13.0	1.4	2.3	9
22	Textile mill products.....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(X)
29	Petroleum and coal products.....	16.6	14.1	(D)	(D)	0.5	(D)	(D)	(D)	(D)	2.3	(D)	(D)	1
	Texas.....	301.8	178.2	153.8	24.5	56.8	18.7	78.4	24.3	98.1	78.5	19.6	25.5	5
26	Paper and allied products.....	9.3	5.8	(D)	(D)	5.2	(D)	-	(D)	3.0	2.4	0.7	0.4	3
28	Chemicals and allied products.....	122.2	57.1	54.0	3.1	18.0	0.6	31.3	7.4	49.8	40.5	9.3	15.3	4
29	Petroleum and coal products.....	116.0	79.9	65.4	14.6	(D)	15.6	45.9	(D)	32.5	25.0	7.6	3.5	1
33	Primary metal industries.....	23.5	16.9	12.5	6.4	12.0	(D)	(D)	2.5	3.0	(D)	(D)	3.6	9

See footnotes at end of table.

Table 2B. Pollution Abatement Capital Expenditures, by State and Major Industry Group for Establishments With 20 or More Employees: 1980—Continued

(Millions of dollars)

SIC code	State and major industry group	Total pollution abatement capital expenditures	Air							Water			Solid waste	Standard error of estimates (percent) PACE
			Total	By abatement technique		By type of pollutant abated				Total	By abatement technique			
				End of line	Changes in production processes	Particulates	Sulfur oxides	Nitrogen oxides, hydrocarbons, and carbon monoxides	Heavy metals, radioactive and toxic substances, and other		End of line	Changes in production processes		
	Mountain Division:													
	Montana.....	12.7	11.2	8.5	2.8	4.5	3.6	0.5	2.6	0.8	0.5	0.2	0.8	11
28	Idaho.....	25.8	20.6	18.3	2.3	17.8	1.5	-	1.3	3.4	3.3	-	1.8	8
	Chemicals and allied products.....	20.4	(D)	(D)	-	14.9	(D)	(D)	(D)	(D)	(D)	(D)	(D)	1
	Wyoming.....	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)
	Colorado.....	28.2	15.5	15.1	0.4	12.3	0.2	0.7	2.6	11.3	8.7	2.6	1.4	4
	New Mexico.....	8.1	7.4	7.2	0.2	4.3	1.3	1.0	0.8	0.6	0.5	0.1	0.1	11
	Arizona.....	10.1	8.1	7.9	0.2	2.9	2.7	1.3	1.2	1.4	1.3	0.1	0.6	13
33	Utah.....	13.5	8.2	8.1	0.1	4.6	2.7	0.7	0.2	4.8	4.4	0.4	0.5	17
	Primary metal industries.....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(X)
	Nevada.....	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)
	Pacific Division:													
	Washington.....	86.5	46.8	38.1	8.8	36.4	1.7	1.8	6.9	36.3	34.2	2.1	3.3	14
24	Lumber and wood products.....	7.1	4.2	3.0	1.2	3.9	-	0.3	-	2.5	(D)	(D)	0.4	13
26	Paper and allied products.....	41.5	15.9	(D)	(D)	(D)	0.4	(D)	(D)	24.1	(D)	(D)	1.5	1
33	Primary metal industries.....	8.6	6.1	6.1	-	4.3	(D)	-	(D)	1.8	1.8	-	0.7	2
	Oregon.....	54.7	37.3	35.0	2.3	28.9	1.7	5.9	0.8	10.6	9.8	0.9	6.8	8
24	Lumber and wood products.....	21.7	18.5	16.5	2.1	13.6	-	4.2	0.6	1.1	0.7	0.4	2.1	19
26	Paper and allied products.....	19.8	(D)	(D)	-	(D)	(D)	(D)	-	5.0	(D)	(D)	(D)	1
	California.....	235.6	169.2	153.8	15.4	50.5	47.1	65.5	6.1	53.9	38.0	15.9	12.5	6
	Food and kindred products.....	20.0	4.6	4.4	0.3	4.0	(D)	0.4	(D)	14.7	(D)	(D)	0.6	8
28	Chemicals and allied products.....	28.2	9.6	7.4	2.2	2.9	0.2	4.5	2.0	13.4	10.9	2.5	5.1	8
29	Petroleum and coal products.....	93.0	82.0	72.9	9.1	(D)	33.2	44.5	(D)	9.4	8.5	0.9	1.6	15
33	Primary metal industries.....	31.9	29.3	29.0	0.3	15.2	13.2	0.5	0.4	2.5	2.4	0.1	-	6
34	Fabricated metal products.....	7.7	4.1	2.6	1.5	1.6	-	1.3	1.0	3.3	3.0	0.4	0.3	14
37	Transportation equipment.....	21.6	15.2	14.5	0.6	1.9	(D)	(D)	0.4	3.7	3.5	0.2	2.8	3
	Alaska.....	8.2	6.8	6.1	0.7	4.7	1.7	0.4	(D)	1.5	1.5	(D)	(D)	2
26	Paper and allied products.....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(X)
	Hawaii.....	11.8	7.0	5.7	1.4	2.7	2.7	1.7	-	4.1	4.1	-	0.6	19
29	Petroleum and coal products.....	4.8	4.6	4.4	0.1	0.2	2.7	1.7	-	-	-	-	0.2	1

Note: Totals may not agree precisely with detail because of independent rounding.

No 2-digit industries are shown where PACE is less than \$5.0 million or the standard error is 20 or greater.

- Represents zero. (D) Withheld to avoid disclosing operations of individual companies. (S) Data suppressed because did not meet publication standards. This includes cells where PACE is less than \$5.0 million or the standard error is 20 or greater. See text. (X) Not applicable.

¹Excludes major industry group 23, Apparel and Other Textile Products.

Table 2C. Pollution Abatement Capital Expenditures, by SMSA for Establishments With 20 or More Employees: 1980

(Millions of dollars)

Standard metropolitan statistical area	Total pollution abatement capital expenditures	Air							Water			Solid waste	Standard error of estimates (percent) PACE
		Total	By abatement technique		By type of pollutant abated				Total	By abatement technique			
			End of line	Changes in-production processes	Particulates	Sulfur oxides	Nitrogen oxides, hydrocarbons, and carbon monoxides	Heavy metals, radioactive substances, and other		End of line	Changes in-production processes		
Akron, Ohio.....	8.3	4.4	4.0	0.3	1.1	-	3.3	-	3.3	3.2	0.1	0.6	4
Albany-Schenectady-Troy, N.Y.....	18.7	5.2	5.1	0.1	2.9	-	1.8	0.5	(D)	(D)	0.4	(D)	1
Allentown-Bethlehem-Easton, Pa.-N.J.....	28.5	19.4	19.2	0.3	11.9	7.0	0.5	-	(D)	(D)	1.5	(D)	3
Appleton-Oshkosh, Wis.....	5.7	1.9	1.8	0.1	1.8	-	0.1	-	3.2	2.8	0.4	0.5	16
Atlanta, Ga.....	38.5	35.9	35.8	-	1.1	-	33.4	1.2	1.3	1.3	-	1.4	2
Augusta, Ga.-S.C.....	16.8	6.8	6.6	0.1	2.7	-	0.2	3.9	(D)	(D)	-	(D)	15
Baltimore, Md.....	19.4	10.2	10.2	-	9.5	0.3	-	0.5	4.4	3.8	0.6	4.7	9
Baton Rouge, La.....	33.1	17.4	10.3	7.1	6.5	0.5	8.9	1.6	11.5	9.5	2.0	4.1	2
Beaumont-Port Arthur-Orange, Tex.....	58.5	42.8	29.9	12.9	7.9	5.0	17.3	12.7	13.7	9.3	4.4	2.0	4
Birmingham, Ala.....	13.9	10.8	10.2	0.5	8.9	0.5	1.1	0.2	3.1	2.4	0.8	-	3
Boston, Mass.....	8.2	4.3	3.1	1.2	2.6	0.6	1.0	-	3.3	2.9	0.4	0.6	10
Buffalo, N.Y.....	51.0	17.8	15.5	2.3	14.0	0.5	1.7	1.6	16.4	14.9	1.4	16.8	2
Canton, Ohio.....	13.3	11.8	11.7	0.1	10.9	0.7	0.2	-	(D)	(D)	0.3	(D)	2
Charleston-North Charleston, S.C.....	7.7	4.3	4.3	-	4.3	-	-	-	(D)	2.7	(D)	(D)	15
Chattanooga, Tenn.-Ga.....	7.1	5.1	5.1	-	4.7	0.2	0.2	-	2.0	1.9	-	0.1	16
Chicago, Ill.....	77.2	44.4	33.7	10.7	27.8	8.7	6.8	1.1	27.4	23.8	3.6	5.4	4
Cincinnati, Ohio-Ky.-Ind.....	68.3	61.0	59.5	1.5	10.2	1.0	49.2	0.6	6.4	6.3	0.2	0.9	4
Cleveland, Ohio.....	36.1	29.1	20.4	8.7	18.4	9.1	1.0	0.6	6.0	5.9	0.1	1.0	1
Corpus Christi, Tex.....	31.4	21.6	21.6	-	1.9	2.2	17.5	-	(D)	(D)	-	(D)	1
Dallas-Fort Worth, Tex.....	18.6	14.4	12.2	2.2	11.8	-	0.5	2.0	3.3	2.6	0.7	0.9	17
Davenport-Rock Island-Moline, Iowa-Ill.....	7.8	7.1	5.5	1.5	5.5	-	1.5	-	0.5	0.4	0.2	0.2	1
Dayton, Ohio.....	15.6	6.6	6.5	0.1	5.4	0.2	0.9	-	(D)	(D)	0.1	(D)	1
Decatur, Ill.....	5.8	4.0	4.0	-	4.0	-	-	-	1.7	1.7	-	-	1
Denver-Boulder, Colo.....	12.0	3.8	3.8	-	0.5	0.2	0.6	2.5	7.3	5.9	1.4	0.9	12
Detroit, Mich.....	55.6	28.2	26.9	1.3	21.0	1.2	4.7	1.1	26.1	24.9	1.2	1.3	2
Flint, Mich.....	17.2	14.6	13.5	1.0	1.9	-	12.3	0.3	1.4	1.4	-	1.2	1
Galveston-Texas City, Tex.....	10.4	(D)	(D)	1.6	1.6	(D)	(D)	-	2.1	1.1	1.0	(D)	1
Gary-Hammond-East Chicago, Ind.....	137.7	76.3	70.9	5.3	64.1	10.1	1.9	0.2	(D)	(D)	10.7	(D)	1
Grand Rapids, Mich.....	13.6	3.7	2.5	1.2	2.2	0.1	1.4	-	7.3	6.5	0.8	2.5	8
Greensboro-Winston-Salem-High Point, N.C.....	5.4	2.6	1.4	1.2	2.2	-	0.1	0.3	(D)	(D)	0.1	(D)	7
Honolulu, Hawaii.....	5.7	4.7	4.6	0.1	0.4	2.7	1.7	-	0.7	0.7	-	0.4	8
Houston, Tex.....	101.5	38.3	34.3	4.0	8.5	1.8	25.3	2.9	50.8	39.4	11.4	12.5	13
Huntington-Ashland, W.Va.-Ky.-Ohio.....	11.1	9.9	8.6	1.3	2.5	4.6	1.6	1.1	0.9	0.5	0.4	0.3	12
Indianapolis, Ind.....	8.0	4.3	3.4	0.9	2.8	0.2	1.2	-	3.2	2.6	0.6	0.5	15
Kansas City, Mo.-Kans.....	25.8	19.6	19.3	0.3	5.0	10.1	3.5	1.1	5.8	5.2	0.6	0.4	1
Killeen-Temple, Tex.....	24.4	9.9	9.8	0.1	5.4	0.1	4.4	0.1	14.3	14.3	-	0.2	3
Lafayette-West Lafayette, Ind.....	5.2	0.7	0.7	-	0.4	-	0.3	-	4.3	4.3	-	0.3	3
Lake Charles, La.....	60.5	48.1	11.8	36.2	3.8	16.8	6.8	20.7	10.8	9.8	1.0	1.7	5
Lakeland-Winter Haven, Fla.....	5.4	1.0	1.0	-	0.4	-	-	0.5	4.3	3.5	0.7	0.1	12
Lancaster, Pa.....	8.7	4.4	4.4	-	3.1	-	0.5	0.8	1.8	1.5	0.3	2.5	18
Lansing-East Lansing, Mich.....	12.3	3.1	3.0	0.1	2.3	-	0.7	0.1	8.8	8.0	0.8	0.4	1
Little Rock-North Little Rock, Ark.....	6.5	5.0	5.0	0.1	5.0	-	-	-	1.3	1.1	0.2	0.2	17
Lorain-Elyria, Ohio.....	5.6	3.4	3.3	0.1	3.1	-	0.2	0.2	2.2	1.1	1.1	-	1
Los Angeles-Long Beach, Calif.....	79.1	61.0	54.9	6.0	15.8	18.9	23.4	2.9	15.3	13.5	1.8	2.8	7
Louisville, Ky.-Ind.....	8.7	5.8	4.0	1.7	2.7	0.4	2.6	0.1	1.8	1.7	0.1	1.1	4
Memphis, Tenn.-Ark.-Miss.....	6.3	2.8	1.9	0.9	2.4	0.1	0.2	0.1	2.5	2.0	0.5	1.0	14
Milwaukee, Wis.....	18.4	9.9	7.7	2.2	4.8	-	4.4	0.6	5.3	4.2	1.1	3.2	14
Mobile, Ala.....	13.4	6.8	3.2	3.5	1.5	4.5	0.2	0.5	6.1	6.1	-	0.5	5
Montgomery, Ala.....	8.4	4.2	4.2	-	4.2	-	-	-	4.2	4.2	-	-	1
Muskegon-North Shores-Muskegon Heights, Mich.....	5.6	4.3	1.2	3.2	3.8	0.1	0.2	0.2	0.9	0.8	0.1	0.4	6
New Brunswick-Perth Amboy-Sayreville, N.J.....	35.8	30.7	29.6	1.2	2.9	19.2	4.4	4.3	4.5	3.5	0.9	0.6	3
New Orleans, La.....	11.4	6.5	6.5	-	1.8	-	4.6	0.1	4.9	4.9	-	-	1
New York, N.Y.-N.J.....	22.5	13.5	11.9	1.6	4.6	0.3	8.1	0.5	7.3	6.4	0.9	1.7	8
Newark, N.J.....	23.3	9.4	8.5	0.9	4.7	0.4	2.8	1.4	12.7	11.3	1.5	1.2	3
Newport News-Hampton, Va.....	6.1	0.3	0.3	-	0.2	-	-	-	5.7	1.3	4.5	0.1	1
Parkersburg-Marietta, W.Va.-Ohio.....	11.1	(D)	(D)	0.1	(D)	-	(D)	0.7	5.2	5.2	-	(D)	17
Peoria, Ill.....	9.7	(D)	(D)	0.1	(D)	(D)	-	0.2	7.2	7.2	-	(D)	1
Petersburg-Colonial Heights-Hopewell, Va.....	15.4	(D)	(D)	0.2	(D)	0.7	(D)	0.1	(D)	(D)	0.4	(D)	1
Philadelphia, Pa.-N.J.....	67.2	33.2	29.8	3.4	15.9	5.4	8.5	3.4	29.2	19.8	9.4	4.8	2
Pittsburgh, Pa.....	203.2	167.0	123.4	43.6	118.1	48.0	0.5	0.4	34.9	34.9	-	1.3	1
Poughkeepsie, N.Y.....	6.8	3.8	3.8	-	0.2	-	3.6	-	3.0	3.0	-	-	4
Reading, Pa.....	8.4	4.7	1.5	3.2	0.9	-	2.1	1.5	3.2	2.9	0.2	0.5	18
Richmond, Va.....	14.2	(D)	(D)	10.7	(D)	(D)	-	-	1.6	1.6	0.1	(D)	8
Riverside-San Bernardino-Ontario, Calif.....	31.9	30.6	30.6	-	17.1	13.1	0.4	-	0.9	0.9	0.1	0.3	11
Rochester, N.Y.....	12.8	4.8	4.8	-	0.5	1.3	1.9	1.0	6.7	6.6	-	1.4	3
Sacramento, Calif.....	12.6	2.0	1.9	0.1	1.4	0.2	-	0.3	10.5	0.5	10.1	0.1	6
Saginaw, Mich.....	14.0	8.8	8.6	0.2	4.6	-	4.0	0.2	3.2	3.2	-	2.0	1
St. Louis, Mo.-Ill.....	32.3	24.7	20.8	4.0	13.6	1.4	6.2	3.5	5.2	4.2	1.0	2.4	2
Salt Lake City-Ogden, Utah.....	7.4	6.5	6.5	-	3.0	2.7	0.6	0.1	0.4	0.3	0.1	0.5	14
San Francisco-Oakland, Calif.....	50.4	31.9	25.7	6.2	3.9	4.2	22.8	0.8	12.8	11.5	1.3	5.7	5
San Jose, Calif.....	11.6	6.3	5.8	0.4	5.1	-	0.5	0.6	3.3	2.9	0.4	2.1	2
Seattle-Everett, Wash.....	6.8	3.3	3.1	0.3	3.2	-	-	0.1	3.0	2.9	0.1	0.5	9
Steubenville-Weirton, Ohio-W.Va.....	32.0	14.4	14.2	0.2	10.3	4.1	-	-	(D)	(D)	0.1	(D)	2
Tulsa, Okla.....	5.5	4.8	4.3	0.5	0.7	1.4	2.3	0.4	0.5	0.5	-	0.2	12
Tyler, Tex.....	8.7	8.0	8.0	-	0.9	6.4	0.8	-	0.6	0.6	-	-	1
Vallejo-Fairfield-Napa, Calif.....	7.9	7.8	7.8	-	0.2	7.5	0.1	-	0.1	0.1	-	-	1
Wilmington, Del.-N.J.-Md.....	63.6	53.1	52.2	0.9	13.6	12.5	25.5	1.5	8.6	8.2	0.4	1.9	1
Youngstown-Warren, Ohio.....	22.2	17.5	12.1	5.5	8.9	5.5	3.1	0.1	4.4	4.3	0.1	0.3	1

Note: Totals may not agree precisely with detail because of independent rounding. No major industry groups are shown. No SMSA totals are shown where PACE is less than \$5.0 million or the standard error is 20 or greater. Major industry group 23, Apparel and Other Textile Products, was not included in the survey and therefore is excluded from the SMSA totals.

- Represents zero. (D) Withheld to avoid disclosing operations of individual companies.

Table 3A. Pollution Abatement Operating Costs, by Form of Abatement and by Industry for Establishments With 20 or More Employees: 1980

(Millions of dollars)

SIC code	Industry	Total gross annual cost	Payments to government units for			Operating costs by form of pollutants abated				Standard error of estimates (percent) GAC
			Total	Use of public sewage	Solid waste collection and disposal	Total	Air	Water	Solid waste	
	All industries ¹	8,141.8	599.9	512.8	86.8	7,541.6	3,297.8	2,680.0	1,563.5	1
20	Food and kindred products.....	519.4	179.9	165.4	14.5	339.5	81.6	148.9	109.1	7
201	Meat products.....	84.5	32.9	30.3	2.6	51.6	4.2	31.6	16.3	2
2011	Meatpacking plants.....	44.9	19.0	17.3	1.7	25.9	2.7	14.9	8.4	1
2013	Sausages and other prepared meats.....	10.6	4.6	3.9	0.6	6.0	0.7	2.3	3.3	5
2016	Poultry dressing plants.....	25.7	7.9	7.7	0.2	17.7	0.7	13.3	3.8	15
202	Dairy products.....	55.4	24.8	22.6	2.3	30.6	1.3	17.4	11.2	13
2023	Condensed and evaporated milk.....	5.8	2.8	2.5	0.3	3.0	0.8	1.3	1.0	11
2026	Fluid milk.....	25.9	15.8	14.2	1.5	10.1	0.1	3.8	6.1	7
203	Preserved fruits and vegetables.....	86.7	31.5	28.3	3.1	55.3	5.6	27.0	23.2	3
2032	Canned specialties.....	10.3	4.2	3.9	0.4	6.1	1.2	2.9	1.9	2
2033	Canned fruits and vegetables.....	32.0	15.2	14.3	0.9	16.8	1.0	6.9	8.7	6
2034	Dehydrated fruits, vegetables, soups... Pickles, sauces, salad dressings.....	5.5 9.0	1.8 3.0	1.5 2.5	0.2 0.5	3.7 6.0	0.3 0.3	2.3 4.2	1.1 1.6	10 12
2035	Frozen fruits and vegetables.....	15.9	3.5	2.6	0.9	12.4	1.5	8.6	3.0	7
2037	Frozen specialties.....	14.0	3.7	3.4	0.2	10.3	1.3	2.2	6.9	15
204	Grain mill products.....	63.3	12.9	11.7	1.2	50.4	27.0	13.6	9.9	2
2041	Flour, other grain mill products.....	8.5	1.7	1.5	0.2	6.9	5.5	0.3	1.1	9
2043	Cereal breakfast foods.....	6.7	1.9	1.7	0.2	4.8	2.4	0.4	2.0	3
2046	Wet corn milling.....	29.4	5.6	(D)	(D)	23.8	12.4	9.2	2.1	1
2047	Dog, cat, and other pet food.....	7.2	2.0	1.9	0.2	5.2	0.9	2.5	1.7	5
205	Bakery products.....	12.7	5.6	4.6	1.1	7.1	0.4	1.4	5.2	4
2051	Bread, cake, and related products.....	9.2	4.4	3.4	0.9	4.9	0.1	1.0	3.5	5
206	Sugar, confectionery products.....	44.4	5.3	4.3	0.9	39.1	9.8	17.8	11.5	4
2061	Raw cane sugar.....	9.2	(D)	(D)	(D)	(D)	1.8	3.9	(D)	17
2062	Cane sugar refining.....	5.7	(D)	(D)	(D)	(D)	0.7	2.7	(D)	1
2063	Beet sugar.....	17.0	0.7	0.6	0.1	16.3	5.8	8.7	1.8	7
2065	Confectionery products.....	9.6	2.6	2.1	0.6	7.0	1.2	1.7	4.0	6
207	Fats and oils.....	42.1	9.0	8.7	0.4	33.1	14.0	11.2	7.8	4
2075	Soybean oil mills.....	18.1	3.4	3.2	0.2	14.8	8.8	3.6	2.3	5
2079	Shortening and cooking oils.....	13.8	4.0	3.9	0.1	9.8	0.7	5.4	3.6	2
208	Beverages.....	90.9	43.5	41.8	1.7	47.4	10.6	21.4	15.3	10
2082	Malt beverages.....	61.0	31.1	30.5	0.6	30.0	7.0	15.9	7.1	1
2086	Bottled and canned soft drinks.....	13.9	8.0	7.2	0.8	5.9	0.3	1.1	4.4	8
209	Misc. foods, kindred products.....	39.3	14.3	13.1	1.2	25.0	8.6	7.6	8.6	4
2095	Roasted coffee.....	12.9	1.7	1.5	0.2	11.2	6.3	3.0	2.0	1
2099	Food preparations, n.e.c.....	19.7	10.6	10.0	0.6	9.1	2.1	2.2	4.7	7
21	Tobacco products.....	14.8	3.7	3.4	0.2	11.1	6.8	1.0	3.3	2
2111	Cigarettes.....	10.1	3.1	3.0	0.1	6.9	3.9	0.8	2.2	1
22	Textile mill products.....	115.8	36.8	33.5	3.3	79.0	16.6	25.8	36.6	7
2211	Weaving mills, cotton.....	12.9	3.4	3.3	0.2	9.4	3.2	3.6	2.6	6
2221	Weaving mills, manmade fiber, silk.....	15.8	5.2	4.6	0.7	10.5	3.8	3.2	3.6	9
225	Knitting mills.....	18.2	8.7	8.1	0.6	9.5	1.8	4.1	3.5	10
2257	Circular knit fabric mills.....	6.3	3.2	3.0	0.2	3.1	0.9	1.2	0.9	18
226	Textile finishing, except wool.....	26.7	9.8	9.1	0.7	16.8	2.7	10.6	3.6	16
2262	Finishing plants, manmade fiber, silk..	11.4	2.1	1.9	0.2	9.4	0.9	6.9	1.5	11
227	Floor covering mills.....	10.0	3.1	2.8	0.3	6.9	0.1	1.3	5.5	11
2272	Tufted carpets and rugs.....	8.9	2.9	2.6	0.3	6.0	0.1	1.0	4.9	12
229	Miscellaneous textile goods.....	11.7	1.7	1.3	0.4	10.0	3.3	1.1	5.6	10
24	Lumber and wood products.....	129.1	4.4	1.9	2.4	124.4	39.6	30.8	53.8	8
2411	Logging camps, log contractors.....	17.3	0.3	-	0.3	17.0	(D)	(D)	6.4	6
242	Sawmills and planing mills.....	35.0	0.5	0.3	0.2	34.5	15.5	2.6	16.1	11
2421	Sawmills, planing mills, general.....	32.3	0.4	0.2	0.2	31.9	14.0	2.6	15.1	12
243	Millwork, plywood, structural members....	32.0	1.7	1.0	0.7	30.3	11.0	3.4	15.9	15
2436	Softwood veneer and plywood.....	18.6	0.4	0.3	0.1	18.2	8.4	3.1	6.6	11
249	Miscellaneous wood products.....	38.7	1.1	0.5	0.6	37.6	11.6	15.3	10.6	13
2499	Wood products, n.e.c.....	24.9	0.8	0.2	0.5	24.1	5.5	13.2	5.2	12
25	Furniture and fixtures.....	31.9	5.3	3.2	2.1	26.7	12.2	1.7	12.7	5
251	Household furniture.....	21.1	3.2	1.7	1.5	17.9	9.5	0.6	7.7	7
2511	Wood household furniture.....	12.4	1.3	0.9	0.4	11.1	7.8	0.2	3.1	11

See footnotes at end of table.

Table 3A. Pollution Abatement Operating Costs, by Form of Abatement and by Industry for Establishments With 20 or More Employees: 1980—Continued

(Millions of dollars)

SIC code	Industry	Total gross annual cost	Payments to government units for			Operating costs by form of pollutants abated				Standard error of estimates (percent) GAC
			Total	Use of public sewage	Solid waste collection and disposal	Total	Air	Water	Solid waste	
26	Paper and allied products.....	762.1	60.6	48.1	12.4	701.5	196.2	388.6	116.7	4
2611	Pulpmills.....	110.2	3.4	2.5	0.8	106.8	20.6	75.2	11.0	7
2621	Papermills, except building paper.....	350.5	32.1	24.8	7.3	318.4	80.6	189.6	48.4	1
2631	Paperboard mills.....	223.1	12.7	11.9	0.7	210.4	73.2	110.4	26.8	5
264	Misc. converted paper products.....	39.9	6.4	4.1	2.3	33.5	8.5	5.6	19.4	4
2641	Paper coating and glazing.....	15.9	2.4	1.6	0.7	13.6	5.4	1.0	7.1	7
2643	Bags, except textile bags.....	5.3	1.0	0.5	0.6	4.2	0.4	0.6	3.2	12
2647	Sanitary paper products.....	11.2	1.2	0.8	0.5	10.0	1.9	3.0	5.1	13
265	Paperboard containers and boxes.....	27.6	5.2	4.2	1.0	22.4	8.7	4.3	6.7	10
2653	Corrugated and solid fiber boxes.....	11.8	3.3	2.8	0.5	8.5	0.8	3.0	4.7	13
27	Printing and publishing.....	50.6	9.3	5.7	3.5	41.3	13.3	4.1	24.0	6
2711	Newspapers.....	9.4	3.0	2.1	0.9	6.4	0.3	0.2	6.0	6
275	Commercial printing.....	27.2	3.3	1.9	1.4	23.8	12.4	2.6	9.0	7
2751	Commercial printing, letterpress.....	5.5	0.7	(D)	(D)	4.9	(D)	0.2	(D)	8
2752	Commercial printing, lithographic.....	10.8	2.1	(D)	(D)	8.7	(D)	0.4	(D)	9
2754	Commercial printing, gravure.....	8.9	0.4	0.2	0.2	8.5	7.0	0.6	0.9	6
28	Chemicals and allied products.....	1,851.8	71.9	66.0	5.9	1,779.9	539.9	876.8	362.9	1
281	Industrial inorganic chemicals.....	345.9	6.2	5.3	0.9	339.7	109.2	159.8	70.7	3
2812	Alkalies and chlorine.....	59.5	0.4	0.3	0.1	59.1	14.2	29.3	15.6	3
2816	Inorganic pigments.....	67.4	1.4	1.4	0.1	65.9	19.2	41.8	4.7	4
2819	Industrial inorganic chemicals, n.e.c.....	215.7	4.1	3.4	0.7	211.6	75.0	87.3	49.3	5
282	Plastics materials, synthetics.....	237.4	9.0	8.2	0.8	228.4	65.9	116.4	46.1	2
2821	Plastics materials and resins.....	151.3	7.4	6.8	0.6	143.9	43.0	69.2	31.7	3
2822	Synthetic rubber.....	22.2	(D)	(D)	(D)	20.9	7.0	(D)	(D)	6
2823	Cellulosic manmade fibers.....	11.8	-	-	-	11.8	2.7	(D)	(D)	1
2824	Organic fibers, noncellulosic.....	52.2	(D)	(D)	(D)	51.9	13.2	(D)	(D)	1
283	Drugs.....	86.0	10.5	9.7	0.8	75.5	20.5	35.5	19.4	2
2833	Medicinals and botanicals.....	41.0	1.4	1.4	-	39.6	10.9	21.7	7.0	4
2834	Pharmaceutical preparations.....	43.5	8.8	8.0	0.8	34.7	9.6	13.4	11.7	1
284	Soaps, cleaners, toilet goods.....	42.9	7.9	7.2	0.8	34.9	11.8	11.4	11.7	4
2841	Soap and other detergents.....	19.3	3.8	3.7	0.2	15.5	7.9	4.1	3.5	7
2843	Surface active agents.....	12.7	1.8	1.7	0.1	11.0	3.2	4.5	3.3	10
2844	Toilet preparations.....	6.9	1.2	0.9	0.3	5.6	0.5	1.8	3.3	2
2851	Paints and allied products.....	21.2	2.4	1.9	0.4	18.8	2.2	3.4	13.3	7
286	Industrial organic chemicals.....	818.0	29.0	27.6	1.4	789.0	225.3	422.3	141.3	1
2865	Cyclic crudes and intermediates.....	151.9	8.4	8.2	0.2	143.5	35.8	83.9	23.8	2
2869	Industrial organic chemicals, n.e.c.....	662.5	20.0	18.8	1.2	642.5	188.4	336.7	117.4	1
287	Agricultural chemicals.....	235.1	1.2	1.1	0.2	233.9	81.7	107.2	44.9	3
2873	Nitrogenous fertilizers.....	70.6	0.2	0.1	-	70.4	33.0	29.7	7.7	8
2874	Phosphatic fertilizers.....	69.3	0.1	0.1	-	69.1	29.9	21.3	17.8	4
2879	Agricultural chemicals, n.e.c.....	92.2	0.9	0.8	0.1	91.4	16.9	55.9	18.4	5
289	Miscellaneous chemical products.....	65.4	5.7	5.2	0.5	59.7	23.3	20.7	15.6	9
2892	Explosives.....	9.8	0.2	0.1	-	9.6	3.8	3.3	2.6	15
2899	Chemical preparations, n.e.c.....	34.3	3.0	2.6	0.2	31.3	9.8	13.9	7.5	11
29	Petroleum and coal products.....	1,418.0	9.2	7.7	1.5	1,408.8	910.1	399.2	99.5	1
2911	Petroleum refining.....	1,384.0	6.9	5.9	1.0	1,377.1	893.2	395.2	88.7	1
295	Paving and roofing materials.....	24.3	2.0	1.5	0.5	22.3	10.7	2.4	9.2	10
2952	Asphalt felts and coatings.....	21.8	1.9	1.5	0.4	19.9	8.9	2.4	8.7	11
299	Misc. petroleum, coal products.....	9.6	0.3	0.2	0.1	9.4	6.2	1.6	1.5	9
2999	Petroleum and coal products, n.e.c.....	5.9	-	-	-	5.9	(D)	0.2	(D)	11
30	Rubber, misc. plastics products.....	108.2	14.2	9.6	4.6	94.0	30.4	18.0	45.6	4
3011	Tires and inner tubes.....	25.9	2.7	2.1	0.6	23.2	11.5	3.6	8.1	1
3069	Fabricated rubber products, n.e.c.....	14.2	2.0	1.3	0.8	12.2	3.4	1.8	7.0	6
3079	Miscellaneous plastics products.....	62.2	8.4	5.6	2.9	53.8	14.0	12.1	27.7	7
31	Leather and leather products.....	26.3	7.4	6.6	0.8	18.9	1.1	7.8	9.9	19
32	Stone, clay, glass products.....	301.7	13.0	9.4	3.6	288.7	182.1	38.8	67.8	3
3211	Flat glass.....	11.6	0.8	(D)	(D)	10.9	4.5	(D)	(D)	7
322	Glass, pressed or blown.....	33.0	2.8	2.2	0.6	30.1	9.1	8.5	12.5	4
3221	Glass containers.....	12.0	1.4	0.9	0.4	10.6	2.5	1.5	6.7	3
3229	Pressed and blown glass, n.e.c.....	21.0	1.5	1.3	0.2	19.5	6.6	7.0	5.9	7
3241	Cement, hydraulic.....	91.8	0.2	0.1	0.1	91.6	79.3	2.9	9.4	7
326	Pottery and related products.....	8.0	1.0	0.6	0.4	6.9	2.1	2.1	2.7	15
327	Concrete, gypsum, plaster products.....	35.6	1.6	0.9	0.7	34.0	19.7	3.6	10.7	12
3273	Ready-mixed concrete.....	7.5	0.5	0.4	0.1	7.0	3.5	1.4	2.1	16

See footnotes at end of table.

Table 3A. Pollution Abatement Operating Costs, by Form of Abatement and by Industry for Establishments With 20 or More Employees: 1980—Continued

(Millions of dollars)

SIC code	Industry	Total gross annual cost	Payments to government units for			Operating costs by form of pollutants abated				Standard error of estimates (percent) GAC
			Total	Use of public sewage	Solid waste collection and disposal	Total	Air	Water	Solid waste	
	Stone, clay, glass products--Continued									
329	Misc. nonmetallic mineral products.....	106.1	5.0	3.7	1.3	101.1	59.2	16.7	25.2	6
3292	Asbestos products.....	21.0	0.9	0.5	0.4	20.1	10.9	2.1	7.1	11
3296	Mineral wool.....	49.8	1.7	1.4	0.3	48.1	28.0	8.9	11.2	7
33	Primary metal industries.....	1,676.8	31.2	27.3	3.9	1,645.6	998.2	435.9	211.3	1
331	Blast furnace, basic steel products.....	1,075.0	14.9	14.0	0.9	1,060.1	573.4	353.1	133.7	1
3312	Blast furnaces and steel mills.....	1,018.7	12.5	12.0	0.5	1,006.2	543.3	338.9	124.0	1
3313	Electrometallurgical products.....	32.3	-	-	-	32.3	26.9	4.0	1.4	2
3315	Steel wire and related products.....	7.5	1.2	0.8	0.4	6.3	0.9	3.4	2.0	11
3316	Cold finishing of steel shapes.....	11.8	0.5	0.5	-	11.3	2.0	5.1	4.2	2
332	Iron and steel foundries.....	176.2	7.6	6.3	1.4	168.5	113.5	13.9	41.0	4
3321	Gray iron foundries.....	139.4	4.3	3.8	0.5	135.1	92.6	11.6	30.6	4
3325	Steel foundries, n.e.c.....	21.3	1.8	1.1	0.7	19.3	11.6	1.2	6.7	10
333	Primary nonferrous metals.....	316.4	0.7	0.6	0.1	315.7	263.0	38.7	14.0	1
3331	Primary copper.....	109.8	0.1	0.1	-	109.6	98.3	7.8	3.5	1
3332	Primary lead.....	30.1	(D)	(D)	(D)	(D)	27.9	(D)	(D)	4
3333	Primary zinc.....	14.8	0.1	0.1	-	14.6	10.4	3.8	0.3	1
3334	Primary aluminum.....	111.6	(D)	(D)	(D)	(D)	90.6	(D)	(D)	1
3339	Primary nonferrous metals, n.e.c.....	50.2	0.2	0.1	-	50.0	35.8	10.8	3.4	4
3341	Secondary nonferrous metals.....	28.8	0.6	0.4	0.1	28.3	20.2	3.5	4.6	12
335	Nonferrous rolling and drawing.....	64.5	4.9	4.0	0.9	59.6	23.1	22.6	13.9	19
3351	Copper rolling and drawing.....	10.7	1.4	1.2	0.2	9.3	3.1	4.5	1.7	3
3353	Aluminum sheet, plate, and foil.....	22.4	0.6	0.5	0.1	21.7	9.0	8.6	4.1	1
3356	Nonferrous rolling and drawing, n.e.c.....	13.2	0.8	0.6	0.1	12.4	4.5	4.0	3.9	10
3357	Nonferrous wire drawing, insulating....	10.4	1.4	1.1	0.3	9.0	5.2	1.5	2.4	8
336	Nonferrous foundries.....	12.1	1.9	1.5	0.4	10.2	3.3	3.5	3.2	9
3361	Aluminum foundries.....	8.0	1.3	1.1	0.2	6.7	2.1	2.1	2.3	10
34	Fabricated metal products.....	219.2	33.9	27.0	6.9	185.3	49.0	61.2	74.9	4
341	Metal cans, shipping containers.....	24.8	4.1	3.1	1.0	20.7	11.5	2.7	6.8	9
3411	Metal cans.....	19.4	3.6	2.8	0.8	15.8	8.6	2.0	5.2	5
342	Cutlery, handtools and hardware.....	30.0	4.4	3.1	1.3	25.6	7.2	10.1	8.2	5
3429	Hardware, n.e.c.....	22.9	3.6	2.5	1.1	19.3	5.4	7.9	6.0	5
344	Fabricated structural metal products.....	23.5	4.9	3.8	1.2	18.6	4.0	4.8	9.8	6
3443	Fabricated platework, boiler shop.....	5.6	1.4	1.2	0.3	4.2	0.6	1.3	2.3	9
3444	Sheet metalwork.....	5.7	1.1	0.8	0.3	4.6	1.6	1.1	1.9	9
345	Screw machine products, bolts, etc.....	11.7	2.5	2.1	0.4	9.2	0.8	5.4	3.0	15
3452	Bolts, nuts, rivets, and washers.....	10.8	2.1	1.8	0.3	8.7	0.7	5.3	2.7	16
346	Metal forgings and stampings.....	39.5	6.5	5.6	0.9	33.0	8.8	10.9	13.2	4
3462	Iron and steel forgings.....	6.0	0.9	0.8	0.1	5.1	2.4	1.3	1.4	8
3463	Nonferrous forgings.....	5.9	(D)	(D)	(D)	(D)	1.8	1.5	(D)	9
3465	Automotive stampings.....	17.5	2.5	2.2	0.2	15.0	2.4	5.9	6.6	4
3469	Metal stampings, n.e.c.....	8.8	2.0	1.4	0.5	6.8	1.3	2.2	3.1	13
348	Ordnance and accessories, n.e.c.....	16.9	1.9	1.8	0.1	15.0	3.5	5.0	6.4	5
3483	Ammunition, except small arms, n.e.c....	5.3	0.5	0.5	-	4.7	1.1	1.6	2.0	10
349	Misc. fabricated metal products.....	23.1	4.2	3.1	1.1	19.0	5.2	4.3	9.2	5
3494	Valves and pipe fittings.....	11.8	2.0	1.6	0.4	9.8	3.7	1.7	4.4	6
35	Machinery, except electrical.....	206.4	27.7	22.4	5.3	178.7	48.0	50.6	79.9	1
351	Engines and turbines.....	33.4	3.2	2.8	0.4	30.2	11.4	10.6	8.1	2
3511	Turbines, turbine generator sets.....	8.3	0.7	0.5	0.2	7.6	4.9	1.4	1.3	1
3519	Internal combustion engines, n.e.c.....	25.1	2.5	2.3	0.2	22.6	6.5	9.3	6.8	3
352	Farm and garden machinery.....	20.6	2.3	2.0	0.3	18.3	6.9	4.0	7.2	1
3523	Farm machinery and equipment.....	18.8	1.9	1.7	0.2	16.8	6.8	3.6	6.3	1
353	Construction, related machinery.....	39.7	3.9	3.0	0.9	35.8	10.5	9.7	15.6	2
3531	Construction machinery.....	28.9	2.1	1.7	0.4	26.8	8.1	8.0	10.7	2
3533	Oilfield machinery.....	5.3	0.8	0.6	0.2	4.5	1.3	0.9	2.2	4
354	Metalworking machinery.....	12.6	3.4	2.8	0.6	9.2	1.6	1.4	6.1	5
355	Special industry machinery.....	15.2	2.0	1.5	0.5	13.3	4.2	3.4	5.7	6
3559	Special industry machinery, n.e.c.....	9.0	0.7	0.5	0.2	8.3	3.0	2.3	3.0	8
356	General industrial machinery.....	25.3	4.3	3.7	0.7	21.0	5.1	5.3	10.4	5
3561	Pumps and pumping equipment.....	5.1	0.9	0.6	0.3	4.2	0.7	1.0	2.4	10
3562	Ball and roller bearings.....	7.1	0.9	0.9	-	6.2	1.1	2.5	2.5	8
357	Office and computing machines.....	28.0	2.8	2.1	0.7	25.2	3.1	8.5	13.6	2
3573	Electronic computing equipment.....	19.5	1.6	1.3	0.3	17.9	1.1	6.0	10.8	2
3579	Office machines, typewriters, etc.....	6.5	0.5	0.5	-	6.0	(D)	2.2	(D)	7

See footnotes at end of table.

Table 3A. Pollution Abatement Operating Costs, by Form of Abatement and by Industry for Establishments With 20 or More Employees: 1980—Continued

(Millions of dollars)

SIC code	Industry	Total gross annual cost	Payments to government units for			Operating costs by form of pollutants abated				Standard error of estimates (percent) GAC
			Total	Use of public sewage	Solid waste collection and disposal	Total	Air	Water	Solid waste	
358	Machinery, except electrical--Continued	21.1	3.9	3.0	0.9	17.2	3.6	5.2	8.4	2
3585	Refrigeration and service machines.....	18.5	3.4	2.7	0.7	15.1	3.2	4.8	7.1	2
359	Misc. machinery, except electric.....	10.7	1.9	1.6	0.3	8.8	1.6	2.5	4.7	9
3592	Carburetors, pistons, rings, etc.....	6.9	1.1	1.0	0.1	5.8	1.4	2.3	2.1	5
36	Electric, electronic equipment.....	205.0	33.4	28.5	4.9	171.4	45.2	59.3	66.9	1
361	Electric distributing equipment.....	10.2	1.4	1.2	0.2	8.8	1.2	3.8	3.8	4
3613	Switchgear, switchboard apparatus.....	5.4	1.0	0.9	0.1	4.4	0.8	1.7	1.9	6
362	Electrical industrial apparatus.....	27.1	3.3	2.8	0.5	23.8	8.8	4.3	10.8	2
3621	Motors and generators.....	6.9	1.5	1.3	0.3	5.4	0.6	1.4	3.3	4
3624	Carbon and graphite products.....	9.8	0.6	0.5	-	9.2	7.2	0.2	1.8	3
363	Household appliances.....	25.5	4.7	4.2	0.5	20.8	4.9	6.6	9.3	1
3632	Household refrigerators, freezers.....	5.7	1.3	1.2	0.1	4.4	1.0	1.1	2.2	1
3633	Household laundry equipment.....	5.0	0.8	0.7	0.1	4.2	1.8	1.3	1.2	1
364	Electric lighting, wiring equipment.....	19.8	4.4	3.9	0.5	15.4	4.5	4.1	6.8	6
3647	Vehicular lighting equipment.....	5.8	(D)	(D)	(D)	(D)	(D)	(D)	(D)	1
365	Radio, TV receiving equipment.....	9.7	1.7	1.6	0.1	8.0	1.6	0.3	6.1	6
3651	Radio and TV receiving sets.....	7.9	1.4	1.2	0.1	6.5	1.2	0.3	5.0	4
366	Communication equipment.....	35.6	7.1	6.0	1.2	28.5	5.9	11.9	10.7	1
3661	Telephone and telegraph apparatus.....	16.6	1.7	1.6	0.2	14.8	3.7	7.5	3.7	1
3662	Radio and TV communication equipment...	19.1	5.4	4.4	1.0	13.7	2.3	4.4	7.0	2
367	Electronic components, accessories.....	53.2	7.7	6.2	1.5	45.5	8.4	21.5	15.5	5
3674	Semiconductors, related devices.....	25.0	3.8	3.1	0.6	21.2	3.8	12.2	5.1	4
3679	Electronic components, n.e.c.....	19.3	2.2	1.7	0.5	17.1	3.4	6.2	7.3	14
369	Misc. electric equipment, supplies.....	23.9	3.1	2.7	0.3	20.8	9.9	7.0	3.9	5
3691	Storage batteries.....	14.2	1.2	1.1	0.1	13.0	8.0	4.0	1.0	7
3694	Engine electrical equipment.....	5.5	1.3	1.2	-	4.3	0.9	1.9	1.4	1
37	Transportation equipment.....	401.5	45.0	37.6	7.4	356.5	110.7	99.7	145.8	1
371	Motor vehicles and equipment.....	296.5	27.3	24.3	3.0	269.2	92.0	69.2	107.9	1
3711	Motor vehicles and car bodies.....	178.0	13.1	11.1	1.9	164.9	71.5	28.9	64.5	1
3714	Motor vehicle parts, accessories.....	114.6	13.6	12.7	0.9	101.0	19.8	40.0	41.2	1
372	Aircraft and parts.....	50.3	10.2	8.8	1.4	40.1	8.1	16.9	15.0	7
3721	Aircraft.....	17.3	2.6	1.9	0.7	14.7	2.5	5.3	6.9	1
3724	Aircraft engines and engine parts.....	22.1	5.5	5.3	0.2	16.6	3.3	8.0	5.3	17
3728	Aircraft equipment, n.e.c.....	10.7	2.0	1.5	0.5	8.7	2.3	3.5	2.8	3
373	Ship, boat building, repairing.....	28.6	3.5	1.6	1.9	25.1	5.6	5.1	14.3	5
3731	Ship building and repairing.....	25.2	2.1	1.5	0.5	23.1	5.4	5.1	12.5	3
3743	Railroad equipment.....	8.3	0.9	0.7	0.3	7.4	2.1	1.7	3.5	7
376	Guided missiles, space vehicles.....	12.1	2.3	1.8	0.5	9.9	2.1	5.1	2.7	1
3761	Guided missiles, space vehicles.....	7.8	1.8	1.4	0.4	6.0	1.6	2.9	1.4	1
38	Instruments, related products.....	77.1	8.3	6.5	1.8	68.8	11.3	27.2	30.3	1
382	Measuring, controlling devices.....	11.0	2.5	2.0	0.5	8.5	0.7	3.1	4.7	5
3825	Instruments to measure electricity.....	5.4	1.1	0.8	0.3	4.3	0.3	1.5	2.5	7
384	Medical instruments, supplies.....	8.4	1.8	1.5	0.3	6.7	1.4	1.3	4.0	6
3842	Surgical appliances and supplies.....	5.5	1.0	0.8	0.2	4.5	1.0	0.9	2.6	6
3861	Photographic equipment and supplies.....	51.6	2.3	1.7	0.6	49.3	8.6	21.3	19.4	1
39	Misc. manufacturing industries.....	26.3	4.4	2.9	1.5	21.9	5.2	4.3	12.2	5
394	Toys and sporting goods.....	6.0	1.3	0.8	0.4	4.7	0.4	0.6	3.8	11
399	Miscellaneous manufactures.....	10.7	1.6	1.0	0.7	9.0	3.3	1.5	4.1	9

Note: Total may not agree precisely with detail because of independent rounding. No data cells are shown where GAC is less than \$5.0 million or the standard error is 20 or greater.

- Represents zero. (D) Withheld to avoid disclosing operations of individual companies.

¹Excludes major industry group 23, Apparel and Other Textile Products.

Table 3B. Pollution Abatement Operating Costs, by Form of Abatement and by State and Major Industry Group for Establishments With 20 or More Employees: 1980

(Millions of dollars)

SIC code	State and major industry group	Total gross annual cost	Payments to government units for			Operating costs by form of pollutants abated				Standard error of estimates (percent) GAC
			Total	Use of public sewage	Solid waste collection and disposal	Total	Air	Water	Solid waste	
	United States ¹	8,141.8	599.9	512.8	86.8	7,541.6	3,297.8	2,680.0	1,563.5	1
	New England Division:									
	Maine.....	50.5	4.1	3.5	0.6	46.3	8.3	30.3	7.7	4
26	Paper and allied products.....	38.3	0.9	0.7	0.2	37.4	5.7	26.5	5.1	3
	New Hampshire.....	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)
26	Paper and allied products.....	6.5	-	-	-	6.5	(D)	5.2	(D)	5
	Vermont.....	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)
	Massachusetts.....	78.5	9.1	7.5	1.6	69.5	17.8	25.5	26.2	12
26	Paper and allied products.....	9.7	1.6	1.5	-	8.1	1.8	2.7	3.5	14
28	Chemicals and allied products.....	12.6	2.2	2.1	0.1	10.4	2.1	5.9	2.3	12
34	Fabricated metal products.....	6.6	0.5	0.4	-	6.2	2.1	2.7	1.3	13
36	Electric, electronic equipment.....	11.8	0.6	0.4	0.2	11.2	1.5	5.7	3.9	19
38	Instruments, related products.....	8.8	0.1	0.1	-	8.7	1.6	3.2	3.9	3
	Rhode Island.....	9.7	1.1	1.0	0.1	8.6	1.5	3.2	4.0	8
	Connecticut.....	74.2	5.5	4.5	1.0	68.7	22.8	27.3	18.6	9
28	Chemicals and allied products.....	23.6	0.7	(D)	(D)	22.9	(D)	10.6	(D)	5
34	Fabricated metal products.....	8.6	0.6	0.4	0.2	8.1	2.0	3.9	2.1	16
37	Transportation equipment.....	8.3	0.3	0.1	0.2	8.1	1.0	5.5	1.6	2
	Middle Atlantic Division:									
	New York.....	335.5	29.0	25.0	4.1	306.5	97.3	118.3	90.9	2
20	Food and kindred products.....	16.3	5.4	5.1	0.3	10.9	1.6	4.7	4.4	6
26	Paper and allied products.....	26.0	3.5	2.4	1.0	22.5	3.6	13.6	5.1	7
28	Chemicals and allied products.....	87.5	6.9	6.4	0.5	80.5	23.2	40.4	16.8	8
32	Stone, clay, glass products.....	15.2	1.0	0.8	0.3	14.2	7.6	2.2	4.4	7
33	Primary metal industries.....	44.3	0.9	0.9	-	43.5	25.6	13.2	4.7	1
34	Fabricated metal products.....	8.4	0.6	0.4	0.3	7.8	1.8	2.3	3.7	10
35	Machinery, except electrical.....	23.0	1.8	1.6	0.2	21.3	3.5	7.0	10.8	2
36	Electric, electronic equipment.....	31.5	1.8	1.7	0.1	29.7	4.6	10.1	15.0	3
37	Transportation equipment.....	30.1	1.0	0.8	0.1	29.2	(D)	6.7	(D)	1
38	Instruments, related products.....	35.5	2.2	1.7	0.5	33.3	4.8	15.4	13.1	1
	New Jersey.....	380.6	22.2	19.7	2.6	358.4	166.7	130.3	61.3	5
20	Food and kindred products.....	25.2	3.9	3.7	0.2	21.3	7.2	9.4	4.7	11
28	Chemicals and allied products.....	153.6	7.6	6.9	0.7	146.0	46.5	76.4	23.1	2
29	Petroleum and coal products.....	105.1	0.1	0.1	-	105.0	(D)	27.4	(D)	1
32	Stone, clay, glass products.....	15.2	0.6	0.4	0.2	14.6	8.7	1.3	4.6	12
33	Primary metal industries.....	22.7	0.8	0.7	0.1	21.9	15.1	5.0	1.8	11
34	Fabricated metal products.....	8.2	1.4	(D)	(D)	6.9	3.1	1.8	1.9	8
35	Machinery, except electrical.....	5.1	0.6	0.6	-	4.5	1.6	0.7	2.2	8
36	Electric, electronic equipment.....	8.0	1.1	1.0	0.1	6.9	2.1	1.5	3.3	6
37	Transportation equipment.....	8.2	0.3	0.3	-	7.9	(D)	(D)	4.0	3
	Pennsylvania.....	578.1	34.0	28.6	5.4	544.1	263.1	167.9	113.3	1
20	Food and kindred products.....	20.0	7.7	6.6	1.1	11.7	2.1	4.9	4.7	5
26	Paper and allied products.....	33.8	5.2	4.7	0.6	29.3	8.5	11.4	9.4	3
28	Chemicals and allied products.....	55.6	4.1	(D)	(D)	52.3	19.4	22.9	10.0	6
29	Petroleum and coal products.....	88.2	2.0	(D)	(D)	86.2	51.1	30.4	4.6	1
30	Rubber, misc. plastics products.....	5.6	0.6	0.3	0.3	5.0	2.4	0.5	2.0	14
32	Stone, clay, glass products.....	24.9	0.9	0.6	0.3	24.0	12.8	3.2	8.0	16
33	Primary metal industries.....	279.2	4.0	3.3	0.7	275.2	143.5	79.7	52.0	1
34	Fabricated metal products.....	12.2	1.9	1.5	0.3	10.3	3.8	2.3	4.1	5
35	Machinery, except electrical.....	13.8	2.0	1.7	0.4	11.7	5.5	2.8	3.4	3
36	Electric, electronic equipment.....	15.2	1.5	1.3	0.3	13.6	4.9	5.1	3.7	5
37	Transportation equipment.....	8.2	0.8	0.7	0.2	7.4	2.3	1.8	3.3	2
	East North Central Division:									
	Ohio.....	505.7	50.4	46.3	4.1	455.6	196.2	153.3	106.1	3
20	Food and kindred products.....	27.8	13.4	12.7	0.8	14.4	3.7	5.9	4.7	7
26	Paper and allied products.....	24.6	2.8	2.6	0.2	21.8	5.1	12.6	4.1	6
28	Chemicals and allied products.....	60.4	6.1	5.8	0.3	54.3	14.4	25.8	14.2	6
29	Petroleum and coal products.....	16.2	0.4	0.4	-	15.8	6.1	7.9	1.7	1
30	Rubber, misc. plastics products.....	22.7	2.4	1.9	0.5	20.3	10.9	2.1	7.1	2
32	Stone, clay, glass products.....	28.5	1.3	1.2	0.1	27.2	13.2	7.7	6.3	8
33	Primary metal industries.....	211.6	5.0	4.8	0.2	206.6	113.7	67.7	25.2	1
34	Fabricated metal products.....	31.4	5.1	4.6	0.5	26.4	7.8	8.2	10.1	4
35	Machinery, except electrical.....	18.9	3.8	3.3	0.6	15.1	4.5	2.8	7.6	6
36	Electric, electronic equipment.....	10.9	2.7	2.3	0.4	8.2	2.2	2.8	3.3	4
37	Transportation equipment.....	46.8	5.4	5.2	0.2	41.5	13.8	8.9	18.7	2

See footnotes at end of table.

Table 3B. Pollution Abatement Operating Costs, by Form of Abatement and by State and Major Industry Group for Establishments With 20 or More Employees: 1980—Continued

(Millions of dollars)

SIC code	State and major industry group	Total gross annual cost	Payments to government units for			Operating costs by form of pollutants abated				Standard error of estimates (percent) GAC
			Total	Use of public sewage	Solid waste collection and disposal	Total	Air	Water	Solid waste	
East North Central Division--Continued										
	Indiana.....	407.3	20.5	18.6	1.9	386.8	190.3	135.9	60.5	1
20	Food and kindred products.....	14.3	4.1	3.7	0.5	10.1	3.6	3.3	3.1	6
28	Chemicals and allied products.....	45.6	2.9	2.7	0.1	42.7	6.4	28.8	7.6	4
29	Petroleum and coal products.....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(X)
30	Rubber, misc. plastics products.....	5.0	0.5	0.4	0.1	4.5	0.5	1.3	2.7	19
33	Primary metal industries.....	219.5	2.5	2.2	0.3	217.0	122.8	74.9	19.2	1
35	Machinery, except electrical.....	6.5	1.3	1.2	0.2	5.2	1.5	1.7	2.0	7
36	Electric, electronic equipment.....	21.2	3.5	3.3	0.2	17.7	5.7	4.6	7.5	1
37	Transportation equipment.....	17.9	1.8	1.7	0.1	16.1	3.3	5.9	6.9	2
	Illinois.....	422.1	37.2	32.6	4.6	384.9	162.2	125.1	97.3	4
20	Food and kindred products.....	42.9	10.0	8.9	1.1	32.9	10.3	9.2	13.3	3
26	Paper and allied products.....	15.3	3.1	2.5	0.6	12.3	4.2	3.5	4.6	19
27	Printing and publishing.....	9.3	0.7	0.6	0.1	8.6	3.9	2.3	2.4	18
28	Chemicals and allied products.....	75.4	7.5	7.1	0.4	67.9	24.1	24.5	19.3	4
29	Petroleum and coal products.....	63.4	0.9	(D)	(D)	62.6	34.9	22.2	5.5	1
30	Rubber, misc. plastics products.....	8.9	0.8	0.6	0.2	8.1	1.9	2.0	4.2	7
32	Stone, clay, glass products.....	12.0	0.4	0.4	0.1	11.6	6.6	1.3	3.6	17
33	Primary metal industries.....	101.5	2.4	2.1	0.3	99.1	55.4	32.3	11.4	14
34	Fabricated metal products.....	22.5	3.4	3.0	0.3	19.1	4.9	8.3	5.9	12
35	Machinery, except electrical.....	36.6	3.4	2.8	0.6	33.2	8.9	11.3	12.9	1
36	Electric, electronic equipment.....	12.3	2.1	2.0	0.1	10.1	2.3	3.5	4.3	3
37	Transportation equipment.....	9.2	0.8	0.6	0.1	8.4	2.1	2.1	4.2	4
	Michigan.....	413.0	45.8	41.0	4.8	367.2	135.3	127.7	104.5	13
20	Food and kindred products.....	15.6	7.6	7.3	0.3	8.0	0.9	3.9	3.2	7
28	Chemicals and allied products.....	54.7	2.9	2.8	0.1	51.9	10.0	26.7	15.1	4
29	Petroleum and coal products.....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(X)
32	Stone, clay, glass products.....	16.9	0.6	0.5	-	16.3	9.6	1.9	5.6	9
33	Primary metal industries.....	110.7	6.1	5.9	0.2	104.6	60.5	17.8	26.2	1
34	Fabricated metal products.....	15.4	3.4	2.8	0.7	11.9	1.8	5.6	4.4	12
35	Machinery, except electrical.....	15.6	1.9	1.8	0.1	13.7	4.7	3.9	5.0	3
37	Transportation equipment.....	119.5	13.9	12.7	1.2	105.6	30.7	42.0	33.0	1
	Wisconsin.....	154.7	30.0	27.8	2.2	124.7	29.2	61.7	33.8	6
26	Paper and allied products.....	62.6	5.3	4.7	0.6	57.3	8.6	40.8	7.9	8
34	Fabricated metal products.....	7.0	1.4	1.2	0.1	5.7	1.5	1.5	2.7	14
35	Machinery, except electrical.....	8.9	1.5	1.4	0.2	7.4	2.5	1.3	3.5	4
37	Transportation equipment.....	5.9	0.8	0.8	-	5.0	1.5	0.9	2.6	2
West North Central Division:										
	Minnesota.....	88.9	15.8	13.2	2.6	73.1	28.8	28.6	15.5	2
20	Food and kindred products.....	24.5	6.2	5.6	0.6	18.3	7.1	8.5	2.8	4
26	Paper and allied products.....	16.0	2.7	2.1	0.6	13.3	0.5	11.1	1.7	7
29	Petroleum and coal products.....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(X)
	Iowa.....	84.3	14.6	12.9	1.7	69.7	22.1	30.5	17.1	2
20	Food and kindred products.....	35.6	11.5	10.9	0.6	24.0	9.0	11.2	3.8	3
28	Chemicals and allied products.....	15.3	0.3	0.2	0.1	15.0	1.5	10.8	2.7	5
35	Machinery, except electrical.....	14.4	0.7	0.6	0.2	13.7	4.7	3.3	5.6	4
	Missouri.....	116.7	10.9	9.3	1.5	105.8	53.8	20.4	31.6	4
20	Food and kindred products.....	13.4	5.2	5.0	0.2	8.2	2.9	2.5	2.8	7
28	Chemicals and allied products.....	29.5	1.1	1.0	0.1	28.4	17.6	6.6	4.3	14
29	Petroleum and coal products.....	7.0	0.2	(D)	(D)	6.9	2.3	(D)	(D)	14
32	Stone, clay, glass products.....	9.5	0.7	0.4	0.3	8.8	6.4	0.7	1.7	13
33	Primary metal industries.....	17.6	0.4	0.4	-	17.2	12.4	2.7	2.1	4
37	Transportation equipment.....	24.2	0.8	(D)	(D)	23.4	9.2	1.2	13.0	1
	North Dakota.....	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)
	South Dakota.....	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)
	Nebraska.....	19.4	4.5	3.9	0.6	14.9	5.1	4.4	5.5	8
20	Food and kindred products.....	9.2	3.4	3.0	0.4	5.8	1.4	2.3	2.1	8
	Kansas.....	58.0	4.9	3.9	0.9	53.1	30.0	11.1	12.1	7
20	Food and kindred products.....	6.0	1.1	0.9	0.2	4.9	1.8	2.0	1.1	4
28	Chemicals and allied products.....	17.1	0.9	(D)	(D)	16.2	11.5	3.7	0.9	5
29	Petroleum and coal products.....	5.3	0.1	0.1	-	5.2	1.2	2.6	(D)	1
32	Stone, clay, glass products.....	14.3	0.8	0.8	-	13.5	9.6	(D)	(D)	9
South Atlantic Division:										
	Delaware.....	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)
28	Chemicals and allied products.....	37.7	2.4	2.4	-	35.3	12.2	20.1	3.0	3
29	Petroleum and coal products.....	58.9	-	-	-	58.9	41.3	17.1	0.6	1
	Maryland.....	134.1	9.7	8.8	1.0	124.3	57.8	47.5	18.9	3
26	Paper and allied products.....	8.4	(D)	(D)	-	(D)	(D)	(D)	0.7	7
28	Chemicals and allied products.....	25.0	0.5	0.5	-	24.6	6.9	12.5	4.9	4
33	Primary metal industries.....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(X)

See footnotes at end of table.

Table 3B. Pollution Abatement Operating Costs, by Form of Abatement and by State and Major Industry Group for Establishments With 20 or More Employees: 1980—Continued

(Millions of dollars)

SIC code	State and major industry group	Total gross annual cost	Payments to government units for			Operating costs by form of pollutants abated				Standard error of estimates (percent) GAC
			Total	Use of public sewage	Solid waste collection and disposal	Total	Air	Water	Solid waste	
	South Atlantic Division--Continued									
	District of Columbia.....	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)
	Virginia.....	119.3	14.9	14.1	0.8	104.4	38.0	44.6	21.8	2
20	Food and kindred products.....	11.3	3.3	3.2	0.1	8.0	3.0	3.3	1.8	12
22	Textile mill products.....	7.8	2.2	2.1	0.1	5.6	0.8	3.1	1.8	5
26	Paper and allied products.....	27.3	(D)	(D)	-	(D)	(D)	12.6	(D)	4
28	Chemicals and allied products.....	34.6	3.8	3.7	0.1	30.8	8.3	17.5	5.0	2
37	Transportation equipment.....	8.6	0.5	0.5	-	8.0	(D)	(D)	2.8	4
	West Virginia.....	171.6	4.5	4.0	0.5	167.1	60.5	74.6	31.7	2
28	Chemicals and allied products.....	72.8	2.6	2.5	0.1	70.2	15.5	44.6	9.8	2
33	Primary metal industries.....	81.2	0.4	0.4	-	80.8	39.7	(D)	(D)	1
	North Carolina.....	145.9	25.2	22.0	3.2	120.7	40.7	47.4	32.4	3
20	Food and kindred products.....	7.9	4.7	(D)	(D)	3.2	0.4	1.9	0.9	7
21	Tobacco products.....	9.2	(D)	(D)	(D)	(D)	4.5	(D)	(D)	1
22	Textile mill products.....	34.3	11.3	10.5	0.8	23.1	8.0	9.6	5.4	8
25	Furniture and fixtures.....	7.1	1.1	0.7	0.5	6.0	4.2	0.1	1.7	14
26	Paper and allied products.....	24.0	0.2	0.1	0.1	23.8	6.4	13.0	4.4	1
28	Chemicals and allied products.....	21.2	1.3	1.0	0.2	19.9	4.6	8.9	6.3	7
35	Machinery, except electrical.....	5.9	0.4	0.4	-	5.5	(D)	2.5	(D)	2
36	Electric, electronic equipment.....	5.4	0.8	0.6	0.2	4.6	1.9	1.6	1.1	8
	South Carolina.....	91.0	7.9	6.7	1.2	83.0	18.5	42.9	21.4	9
22	Textile mill products.....	14.9	4.5	4.0	0.4	10.4	1.0	6.0	3.4	8
28	Chemicals and allied products.....	31.5	0.6	0.5	0.1	30.9	6.9	13.4	10.6	3
32	Stone, clay, glass products.....	6.1	0.4	0.4	-	5.7	2.7	(D)	(D)	12
	Georgia.....	125.4	14.0	12.2	1.7	111.5	46.3	43.4	21.6	2
20	Food and kindred products.....	10.8	4.1	4.0	0.1	6.7	0.5	3.7	2.3	5
22	Textile mill products.....	9.2	3.3	3.1	0.2	5.9	1.2	2.1	2.5	7
26	Paper and allied products.....	50.1	2.2	1.5	0.6	47.9	26.5	15.5	5.9	3
28	Chemicals and allied products.....	25.8	1.1	1.0	0.1	24.7	6.8	15.7	2.2	7
32	Stone, clay, glass products.....	7.1	0.4	0.2	0.2	6.7	4.3	1.3	1.1	19
37	Transportation equipment.....	6.6	0.8	0.7	-	5.8	1.1	1.5	3.0	1
	Florida.....	145.0	11.2	9.1	2.0	133.9	46.9	63.8	23.2	3
20	Food and kindred products.....	20.6	5.7	5.1	0.6	14.8	4.4	7.6	2.8	4
26	Paper and allied products.....	48.1	1.2	1.1	0.1	46.9	14.1	30.8	2.0	1
28	Chemicals and allied products.....	49.0	0.8	0.8	0.1	48.2	20.0	19.9	8.2	3
36	Electric, electronic equipment.....	5.1	0.7	0.5	0.1	4.4	0.3	2.1	2.0	13
	East South Central Division:									
	Kentucky.....	118.5	12.8	12.2	0.7	105.7	39.4	34.5	31.8	4
20	Food and kindred products.....	8.5	4.5	4.4	0.1	4.0	0.7	0.6	2.8	16
28	Chemicals and allied products.....	38.1	2.9	2.9	-	35.2	10.3	18.8	6.2	4
29	Petroleum and coal products.....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(X)
33	Primary metal industries.....	17.3	0.2	0.1	-	17.2	9.9	5.5	1.8	2
35	Machinery, except electrical.....	7.0	0.9	0.9	0.1	6.1	2.5	1.6	1.9	4
36	Electric, electronic equipment.....	6.2	1.4	1.4	0.1	4.8	2.5	0.8	1.5	3
	Tennessee.....	172.8	14.5	12.4	2.1	158.3	56.9	66.3	35.0	3
20	Food and kindred products.....	9.8	4.1	3.9	0.3	5.6	1.6	2.5	1.6	6
26	Paper and allied products.....	9.7	1.3	1.1	0.1	8.5	3.0	3.8	1.7	6
28	Chemicals and allied products.....	107.7	2.3	2.2	0.1	105.4	35.3	49.4	20.7	4
33	Primary metal industries.....	12.1	0.6	0.5	0.1	11.5	7.7	2.4	1.4	7
	Alabama.....	179.4	8.9	6.5	2.4	170.5	71.1	68.4	30.9	3
26	Paper and allied products.....	31.4	(D)	(D)	(D)	(D)	(D)	14.3	(D)	1
28	Chemicals and allied products.....	49.0	0.1	(D)	(D)	48.9	10.7	29.7	8.5	1
33	Primary metal industries.....	64.1	0.4	0.4	-	63.8	40.1	17.3	6.4	2
	Mississippi.....	86.4	2.7	2.2	0.5	83.7	30.6	30.9	22.1	9
24	Lumber and wood products.....	11.2	0.1	-	0.1	11.1	2.5	6.1	2.5	15
26	Paper and allied products.....	11.9	-	-	-	11.9	5.7	(D)	(D)	1
28	Chemicals and allied products.....	17.3	-	-	-	17.3	5.2	10.8	1.3	3
29	Petroleum and coal products.....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(X)
	West South Central Division:									
	Arkansas.....	81.3	4.6	3.6	1.0	76.7	22.7	37.3	16.7	12
20	Food and kindred products.....	8.5	2.3	2.2	0.1	6.2	1.3	3.0	1.9	6
26	Paper and allied products.....	15.3	-	-	-	15.2	5.3	6.3	3.6	2
	Louisiana.....	412.6	2.3	1.8	0.5	410.2	153.2	189.7	67.3	1
20	Food and kindred products.....	5.3	1.3	1.1	0.2	4.0	0.9	1.7	1.4	12
26	Paper and allied products.....	22.9	0.3	0.3	-	22.6	6.3	12.7	3.6	4
28	Chemicals and allied products.....	221.8	0.3	-	0.3	221.5	54.8	117.3	49.2	2
29	Petroleum and coal products.....	137.0	(D)	(D)	-	137.0	76.7	(D)	(D)	1
33	Primary metal industries.....	15.3	-	-	-	15.3	11.9	2.0	1.3	10

See footnotes at end of table.

Table 3B. Pollution Abatement Operating Costs, by Form of Abatement and by State and Major Industry Group for Establishments With 20 or More Employees: 1980—Continued

(Millions of dollars)

SIC code	State and major industry group	Total gross annual cost	Payments to government units for			Operating costs by form of pollutants abated				Standard error of estimates (percent) GAC
			Total	Use of public sewage	Solid waste collection and disposal	Total	Air	Water	Solid waste	
West South Central Division--Continued										
29	Oklahoma.....	56.2	2.8	2.3	0.5	53.4	23.1	15.3	14.8	11
	Petroleum and coal products.....	15.7	-	-	-	15.6	9.0	4.6	2.0	1
26	Texas.....	1,039.6	25.2	18.7	6.5	1,014.4	515.6	338.4	160.2	3
	Paper and allied products.....	46.0	3.3	(D)	(D)	42.8	15.1	23.4	4.2	2
28	Chemicals and allied products.....	319.9	2.5	1.6	0.9	317.4	106.9	145.4	65.1	1
29	Petroleum and coal products.....	490.9	0.4	0.3	0.1	490.4	305.2	139.5	45.9	1
32	Stone, clay, glass products.....	19.9	0.7	0.4	0.3	19.2	15.4	1.5	2.3	17
33	Primary metal industries.....	87.6	0.2	0.1	-	87.4	63.4	15.6	8.4	3
35	Machinery, except electrical.....	8.6	1.7	1.2	0.6	6.9	1.0	1.0	4.8	10
36	Electric, electronic equipment.....	6.6	3.0	2.6	0.4	3.6	1.1	0.9	1.5	9
37	Transportation equipment.....	8.3	1.1	0.9	0.2	7.2	1.0	1.4	4.4	9
Mountain Division:										
33	Montana.....	22.8	0.5	0.5	0.1	22.3	17.8	3.0	1.6	3
	Primary metal industries.....	10.5	-	-	-	10.5	10.3	-	0.1	1
20	Idaho.....	35.8	0.8	0.6	0.3	35.0	21.8	9.0	4.2	4
	Food and kindred products.....	5.1	0.5	0.4	0.1	4.6	0.3	3.1	1.2	13
28	Chemicals and allied products.....	16.3	-	-	-	16.3	12.9	1.9	1.5	1
33	Primary metal industries.....	6.4	-	-	-	6.4	4.5	1.9	-	1
	Wyoming.....	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)
20	Colorado.....	44.3	5.4	4.1	1.3	38.9	16.8	13.3	8.7	6
	Food and kindred products.....	7.9	1.8	1.5	0.2	6.1	(D)	(D)	2.9	5
33	Primary metal industries.....	15.0	-	-	-	15.0	(D)	4.6	(D)	11
38	Instruments, related products.....	5.1	0.4	(D)	(D)	4.7	(D)	2.0	(D)	1
33	New Mexico.....	32.9	0.1	0.1	-	32.7	31.4	1.1	0.5	5
	Primary metal industries.....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(X)
33	Arizona.....	61.6	2.9	2.5	0.4	58.7	49.0	5.1	4.6	2
	Primary metal industries.....	50.9	0.1	0.1	-	50.8	45.6	2.7	2.5	2
33	Utah.....	38.3	0.8	0.5	0.3	37.5	28.7	4.6	4.1	4
	Primary metal industries.....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(X)
	Nevada.....	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)
Pacific Division:										
20	Washington.....	174.5	10.5	6.5	4.0	164.0	77.3	65.6	21.1	1
	Food and kindred products.....	7.7	4.5	3.7	0.8	3.2	0.3	1.9	1.0	12
26	Paper and allied products.....	59.0	0.2	0.1	0.1	58.8	13.1	40.7	4.7	1
29	Petroleum and coal products.....	17.1	-	-	-	17.1	9.5	4.0	3.5	4
33	Primary metal industries.....	43.9	0.4	0.2	0.2	43.4	37.7	3.9	1.8	1
37	Transportation equipment.....	7.6	3.3	1.5	1.8	4.4	0.7	1.8	1.9	14
24	Oregon.....	88.8	5.7	3.9	1.7	83.1	29.5	35.3	18.3	6
	Lumber and wood products.....	20.1	0.6	0.3	0.3	19.5	8.8	2.7	8.0	10
26	Paper and allied products.....	35.1	(D)	0.7	(D)	(D)	(D)	22.4	(D)	12
33	Primary metal industries.....	20.2	(D)	(D)	-	(D)	10.5	(D)	(D)	7
20	California.....	612.2	61.3	48.5	12.8	550.9	308.0	128.9	114.0	4
	Food and kindred products.....	55.6	26.6	24.0	2.6	29.0	6.0	10.8	12.1	3
24	Lumber and wood products.....	7.1	0.2	-	0.2	6.9	2.9	0.7	3.1	11
26	Paper and allied products.....	17.0	5.2	4.0	1.1	11.8	2.9	5.3	3.6	6
28	Chemicals and allied products.....	63.6	3.6	3.0	0.6	60.0	15.6	23.0	21.4	5
29	Petroleum and coal products.....	266.2	3.1	2.6	0.4	263.1	197.4	54.3	11.4	1
30	Rubber, misc. plastics products.....	6.2	1.0	0.2	0.8	5.2	1.2	0.6	3.3	12
32	Stone, clay, glass products.....	37.8	1.2	0.5	0.8	36.6	25.4	2.7	8.4	8
33	Primary metal industries.....	46.0	2.3	1.7	0.7	43.7	24.0	13.5	6.2	8
34	Fabricated metal products.....	19.4	2.2	1.4	0.8	17.2	8.8	3.3	5.5	13
35	Machinery, except electrical.....	7.3	1.2	0.7	0.6	6.1	1.1	1.7	3.1	9
36	Electric, electronic equipment.....	16.5	3.1	1.9	1.2	13.4	5.3	3.8	4.2	9
37	Transportation equipment.....	52.1	7.9	6.5	1.4	44.1	15.1	7.7	21.1	7
	Alaska.....	6.0	0.1	-	0.1	5.9	0.3	4.0	1.6	7
20	Hawaii.....	11.6	0.6	0.5	-	11.0	1.9	4.7	4.4	14
	Food and kindred products.....	8.3	0.5	0.5	-	7.7	1.1	3.3	3.4	18

Note: Totals may not agree precisely with detail because of independent rounding. No 2-digit industries are shown where GAC is less than \$5.0 million or the standard error is 20 or greater.

- Represents zero. (D) Withheld to avoid disclosing operations of individual companies. (S) Data suppressed because did not meet publication standards. This includes cells where GAC is less than \$5.0 million or the standard error is 20 or greater. See text. (X) Not applicable.

¹Major industry group 23, Apparel and Other Textile Products, was not included in the survey and therefore is excluded from the U.S. and State totals.

Table 3C. Pollution Abatement Operating Costs, by Form of Abatement and by SMSA for Establishments With 20 or More Employees: 1980

(Millions of dollars)

Standard metropolitan statistical area	Total gross annual cost	Payments to government units for			Operating costs by form of pollutants abated				Standard error of estimates (percent) GAC
		Total	Use of public sewage	Solid waste collection and disposal	Total	Air	Water	Solid waste	
Akron, Ohio.....	18.1	2.3	2.0	0.3	15.8	9.2	3.0	3.6	4
Albany-Schenectady-Troy, N.Y.....	36.6	2.0	1.8	0.2	34.6	10.0	16.0	8.6	4
Allentown-Bethlehem-Easton, Pa.-N.J.....	56.8	1.7	1.6	0.1	55.1	27.9	18.7	8.6	5
Anaheim-Santa Ana-Garden Grove, Calif.....	13.3	2.7	1.6	1.1	10.7	3.3	2.7	4.8	13
Anderson, Ind.....	8.5	1.2	1.2	-	7.3	3.1	1.9	2.3	15
Ann Arbor, Mich.....	9.8	1.5	1.5	-	8.3	0.7	3.8	3.8	5
Appleton-Oshkosh, Wis.....	15.1	1.9	1.5	0.4	13.2	4.1	5.5	3.5	11
Atlanta, Ga.....	17.7	4.2	3.8	0.4	13.5	4.3	3.1	6.0	6
Augusta, Ga.-S.C.....	16.4	2.4	1.9	0.5	14.0	4.9	5.1	3.9	9
Bakersfield, Calif.....	7.2	-	-	-	7.1	4.0	1.4	1.8	13
Baltimore, Md.....	101.2	4.7	3.9	0.7	96.6	42.1	39.3	15.1	2
Baton Rouge, La.....	155.4	0.1	-	0.1	155.3	57.2	79.3	18.4	1
Beaumont-Port Arthur-Orange, Tex.....	212.3	0.2	0.1	0.1	212.1	92.1	79.0	40.9	1
Billings, Mont.....	5.4	0.4	0.4	-	5.0	2.9	1.4	0.7	1
Binghamton, N.Y.-Pa.....	8.2	0.6	0.6	-	7.6	0.9	1.5	5.1	1
Birmingham, Ala.....	41.3	0.6	0.5	-	40.8	26.0	10.7	4.0	4
Boston, Mass.....	27.4	3.1	2.1	1.0	24.4	6.6	6.7	10.9	5
Bridgeport, Conn.....	9.0	0.3	0.1	0.2	8.7	2.6	3.0	2.9	7
Buffalo, N.Y.....	92.3	7.5	7.0	0.5	84.8	32.3	34.8	17.7	3
Canton, Ohio.....	18.4	1.3	1.1	0.2	17.2	7.9	7.6	1.6	2
Cedar Rapids, Iowa.....	9.6	3.5	3.2	0.2	6.2	4.0	0.9	1.3	8
Charleston-North Charleston, S.C.....	6.7	0.3	0.2	0.1	6.4	3.3	1.7	1.4	18
Charleston, W. Va.....	43.0	2.4	2.4	-	40.6	5.6	30.9	3.7	2
Charlotte-Gastonia, N.C.....	10.9	2.3	2.2	0.2	8.5	3.5	1.5	3.5	18
Chattanooga, Tenn.-Ga.....	14.8	2.6	2.5	0.1	12.3	4.4	4.0	3.8	9
Chicago, Ill.....	238.8	22.5	19.7	2.8	216.3	86.6	70.4	59.3	7
Cincinnati, Ohio-Ky.-Ind.....	39.8	10.3	9.8	0.5	29.5	11.6	7.8	10.1	6
Cleveland, Ohio.....	108.2	9.8	9.2	0.6	98.4	41.4	34.0	23.1	1
Columbia, S.C.....	14.3	0.3	0.2	0.1	14.0	3.3	3.9	6.8	4
Columbus, Ohio.....	27.7	7.3	7.3	0.1	20.4	6.0	7.1	7.0	7
Corpus Christi, Tex.....	41.5	0.1	-	0.1	41.4	29.4	9.0	2.9	1
Dallas-Fort Worth, Tex.....	51.0	9.4	8.1	1.3	41.6	15.4	6.3	19.7	11
Davenport-Rock Island-Moline, Iowa-Ill.....	15.1	1.8	1.7	0.1	13.3	5.8	3.8	3.8	5
Dayton, Ohio.....	23.1	2.8	2.2	0.5	20.3	8.1	2.8	9.2	4
Denver-Boulder, Colo.....	25.1	4.9	3.6	1.3	20.2	5.2	7.8	7.0	9
Des Moines, Iowa.....	5.0	0.9	0.6	0.3	4.1	2.0	0.6	1.4	13
Detroit, Mich.....	198.4	24.3	22.4	1.9	174.1	77.8	47.3	48.8	1
Dubuque, Iowa.....	6.0	0.7	0.7	-	5.3	1.4	2.4	1.5	2
El Paso, Tex.....	20.7	0.3	0.2	0.1	20.4	19.1	0.8	0.5	6
Erie, Pa.....	7.1	2.0	1.9	0.2	5.1	1.4	1.3	2.3	6
Eugene-Springfield, Oreg.....	5.4	0.4	0.3	0.1	5.0	1.8	1.9	1.3	7
Evansville, Ind.-Ky.....	23.2	1.1	1.0	0.1	22.1	4.3	14.5	3.3	2
Fargo-Moorhead, N. Dak.-Minn.....	7.3	0.1	0.1	0.1	7.2	3.0	4.1	0.1	1
Flint, Minn.....	27.3	1.9	1.9	-	25.4	13.5	6.0	5.8	1
Florence, Ala.....	13.3	-	-	-	13.3	5.8	4.8	2.7	1
Fort Wayne, Ind.....	8.3	1.1	0.9	0.2	7.2	2.2	1.8	3.1	10
Gadsden, Ala.....	10.9	-	-	-	10.8	5.4	3.4	2.0	1
Galveston-Texas City, Tex.....	69.0	1.5	1.1	0.3	67.5	42.0	16.7	8.9	1
Gary-Hammond-East Chicago, Ind.....	248.7	2.6	2.4	0.2	246.1	149.0	76.5	20.6	1
Grand Rapids, Mich.....	16.1	3.0	2.8	0.2	13.1	1.9	6.3	4.8	14
Green Bay, Wis.....	21.1	5.4	5.1	0.3	15.7	0.9	16.1	2.2	10
Greensboro-Winston-Salem-High Point, N.C.....	25.2	7.6	6.7	0.9	17.6	9.0	4.7	3.8	9
Greenville-Spartanburg, S.C.....	13.2	3.2	2.6	0.6	10.1	2.2	4.5	3.3	8
Hamilton-Middletown, Ohio.....	33.1	2.7	2.6	0.2	30.4	14.1	11.5	4.8	1
Harrisburg, Pa.....	8.5	1.5	1.4	0.1	7.0	5.4	0.7	0.9	5
Hartford, Conn.....	9.5	1.1	0.9	0.1	8.4	1.6	3.6	3.2	15
Honolulu, Hawaii.....	5.7	0.6	0.5	-	5.1	1.6	2.1	1.4	12
Houston, Tex.....	500.7	9.4	6.0	3.3	491.3	243.8	186.1	65.8	1
Huntington-Ashland, W. Va.-Ky.-Ohio.....	29.9	0.7	0.6	0.1	29.2	13.8	9.2	6.2	5
Indianapolis, Ind.....	25.8	4.8	4.4	0.4	21.0	6.8	6.1	7.9	6
Jacksonville, Fla.....	53.9	3.9	3.7	0.1	50.1	13.9	32.6	3.5	2
Jersey City, N.J.....	19.7	1.0	1.0	-	18.7	8.2	6.0	4.0	10
Johnstown, Pa.....	12.2	0.4	0.2	0.2	11.8	5.5	4.6	1.8	2
Kalamazoo-Portage, Mich.....	15.5	4.0	3.1	0.9	11.5	2.3	4.3	4.9	6
Kansas City, Mo.-Kans.....	54.8	4.2	3.9	0.3	50.6	19.5	9.6	19.6	3

See footnotes at end of table.

Table 3C. Pollution Abatement Operating Costs, by Form of Abatement and by SMSA for Establishments With 20 or More Employees: 1980—Continued

(Millions of dollars)

Standard metropolitan statistical area	Total gross annual cost	Payments to government units for			Operating costs by form of pollutants abated				Standard error of estimates (percent) GAC
		Total	Use of public sewage	Solid waste collection and disposal	Total	Air	Water	Solid waste	
Killeen-Temple, Tex.....	26.0	1.0	0.8	0.2	25.1	10.0	3.7	11.4	1
Knoxville, Tenn.....	12.2	1.4	1.3	0.1	10.8	7.2	4.5	1.3	6
Lafayette-West Lafayette, Ind.....	13.6	0.6	0.5	-	13.1	1.4	9.2	2.4	3
Lake Charles, La.....	65.9	-	-	-	65.9	30.1	25.1	10.1	1
Lakeland-Winter Haven, Fla.....	21.3	0.2	0.1	0.2	21.1	9.1	8.7	3.2	5
Lancaster, Pa.....	12.6	1.8	1.3	0.5	10.9	4.7	2.7	3.4	6
Lansing-East Lansing, Mich.....	17.8	1.7	1.6	0.1	16.1	4.2	5.5	6.4	4
Las Vegas, Nev.....	5.1	0.2	-	0.1	4.9	2.9	1.6	0.5	11
Lexington-Fayette, Ky.....	6.7	0.3	0.3	0.1	6.4	2.3	1.8	2.2	17
Lima, Ohio.....	13.8	0.8	0.6	0.2	13.0	3.5	5.3	4.2	8
Little Rock-North Little Rock, Ark.....	9.0	0.8	0.7	0.1	8.2	3.4	2.4	2.3	15
Long Branch-Asbury Park, N.J.....	7.7	0.7	0.3	0.4	7.0	2.2	3.1	1.7	4
Lorain-Elyria, Ohio.....	32.8	1.2	1.0	0.2	31.6	13.4	11.8	6.4	2
Los Angeles-Long Beach, Calif.....	249.6	15.9	12.0	3.9	233.7	127.1	42.6	40.3	9
Louisville, Ky.-Ind.....	44.2	9.6	9.4	0.2	34.6	13.7	10.5	10.4	4
Macon, Ga.....	6.5	0.8	0.6	0.2	5.7	2.6	2.6	0.4	4
Memphis, Tenn.-Ark.-Miss.....	35.9	4.1	3.9	0.2	31.8	3.9	22.9	5.0	3
Milwaukee, Wis.....	38.3	11.2	10.7	0.4	27.2	11.4	5.1	10.6	11
Minneapolis-St. Paul, Minn.-Wis.....	47.5	10.2	8.8	1.4	37.3	20.0	7.2	9.9	3
Mobile, Ala.....	28.7	1.5	0.4	1.1	27.2	6.1	15.9	5.2	2
Monroe, La.....	8.0	-	-	-	7.9	1.9	1.2	1.8	1
Muskegon-Muskegon Heights, Mich.....	7.2	2.3	2.0	0.3	4.9	1.8	0.9	2.2	9
Nashville-Davidson, Tenn.....	14.2	2.1	1.5	0.6	12.1	2.8	4.5	4.8	3
Nassau-Suffolk, N.Y.....	12.6	1.4	0.8	0.6	11.2	1.2	4.5	5.5	9
New Brunswick-Perth Amboy-Sayreville, N.J.....	82.6	6.0	5.7	0.3	76.7	51.2	16.6	8.8	19
New London-Norwich, Conn.-R.I.....	15.7	1.1	1.0	0.1	14.6	7.0	5.7	1.8	6
New Orleans, La.....	29.1	1.2	1.1	0.1	27.9	12.5	10.8	4.7	3
New York, N.Y.-N.J.....	65.3	8.9	8.0	0.9	56.4	23.0	13.6	19.5	6
Newark, N.J.....	128.1	6.2	5.8	0.4	121.9	63.5	40.4	17.8	1
Newport News-Hampton, Va.....	15.8	2.2	2.1	0.1	13.6	6.3	4.7	2.5	1
Oklahoma City, Okla.....	6.2	1.1	1.0	0.1	5.1	2.3	1.3	1.5	7
Omaha, Nebr.-Iowa.....	9.3	2.5	2.2	0.4	6.7	2.6	1.7	2.4	10
Parkersburg-Marietta, W. Va.-Ohio.....	50.3	0.4	0.4	-	49.9	19.9	21.6	8.4	7
Pensacola, Fla.....	14.5	0.2	0.2	0.1	14.3	7.7	5.4	1.2	1
Peoria, Ill.....	34.2	1.5	1.4	0.1	32.7	15.5	11.7	5.5	2
Petersburg-Colonial Heights-Hopewell, Va.....	17.0	4.9	4.9	-	12.1	5.1	5.7	1.3	1
Philadelphia, Pa.-N.J.....	205.8	16.0	14.6	1.5	189.8	97.9	62.3	29.3	2
Phoenix, Ariz.....	8.9	2.6	2.3	0.3	6.2	2.6	2.0	1.7	4
Pittsburgh, Pa.....	210.9	4.2	3.5	0.7	206.7	105.8	53.2	48.1	1
Portland, Maine.....	5.6	1.0	0.7	0.4	4.6	0.4	3.2	1.0	17
Portland, Oreg.-Wash.....	34.6	3.5	2.7	0.8	31.1	14.6	11.3	4.9	6
Poughkeepsie, N.Y.....	16.8	0.1	0.1	-	16.7	1.3	7.8	7.6	1
Providence-Warwick-Pawtucket, R.I.-Mass.....	12.3	1.5	1.3	0.2	10.8	1.5	3.8	5.4	7
Provo-Orem, Utah.....	6.1	-	-	-	6.1	4.9	0.3	0.9	2
Pueblo, Colo.....	14.9	-	-	-	14.9	11.0	3.5	0.3	8
Raleigh-Durham, N.C.....	7.0	1.3	1.1	0.2	5.7	1.3	2.2	1.9	12
Reading, Pa.....	12.1	1.1	1.0	0.1	11.0	3.7	5.4	1.9	18
Richmond, Va.....	15.2	1.0	0.8	0.2	14.2	2.6	7.2	4.4	9
Riverside-San Bernardino-Ontario, Calif.....	50.6	3.1	1.9	1.2	47.5	28.9	10.4	7.3	3
Rochester, N.Y.....	45.6	4.0	3.4	0.6	41.5	5.4	19.9	16.1	3
Rockford, Ill.....	7.7	1.7	1.5	0.2	5.9	1.3	2.1	2.5	9
Sacramento, Calif.....	7.7	2.2	2.0	0.2	5.5	1.8	1.7	2.0	11
Saginaw, Mich.....	24.0	1.8	1.7	0.1	22.2	10.6	3.0	8.6	2
St Louis, Mo.-Ill.....	97.1	9.8	8.3	1.5	87.3	50.7	18.7	17.8	2
Salt Lake City-Ogden, Utah.....	29.3	0.6	0.5	0.1	28.7	23.2	2.7	2.7	3
San Francisco-Oakland, Calif.....	184.7	8.3	5.8	2.5	176.4	93.9	46.3	36.0	1
San Jose, Calif.....	24.6	7.1	5.8	1.3	17.6	6.6	4.7	6.1	5
Savannah, Ga.....	29.3	0.3	0.3	0.1	29.0	12.3	14.6	2.1	6
Seattle-Everett, Wash.....	28.6	5.9	3.4	2.5	22.7	5.2	11.0	6.5	6
Spokane, Wash.....	7.3	0.1	-	-	7.3	5.7	0.8	0.7	10
Springfield-Chicopee-Holyoke, Mass.-Conn.....	11.6	1.2	1.2	-	10.4	4.2	1.7	4.5	18
Steubenville-Weirton, Ohio-W. Va.....	68.3	0.5	0.4	0.2	67.8	26.6	27.6	12.3	1
Stockton, Calif.....	9.1	3.8	3.5	0.3	5.2	1.9	1.8	1.5	10
Syracuse, N.Y.....	13.7	1.8	1.7	0.1	11.9	4.3	4.2	3.4	4

See footnotes at end of table.

Table 3C. Pollution Abatement Operating Costs, by Form of Abatement and by SMSA for Establishments With 20 or More Employees: 1980—Continued

(Millions of dollars)

Standard metropolitan statistical area	Total gross annual cost	Payments to government units for			Operating costs by form of pollutants abated				Standard error of estimates (percent) GAC
		Total	Use of public sewage	Solid waste collection and disposal	Total	Air	Water	Solid waste	
Tacoma, Wash.....	23.4	1.3	0.8	0.4	22.1	17.6	3.1	1.4	2
Tampa-St Petersburg, Fla.....	23.2	2.3	1.5	0.8	20.9	9.6	4.6	6.5	11
Terre Haute, Ind.....	16.3	0.5	0.5	-	15.8	3.6	9.8	2.5	16
Texarkana, Tex.-Texarkana, Ark.....	7.6	0.1	0.1	0.1	7.5	2.8	2.7	2.0	7
Toledo, Ohio-Mich.....	38.0	3.6	3.3	0.3	34.4	8.8	15.9	10.4	6
Trenton, N.J.....	7.5	1.2	0.7	0.5	6.3	3.4	1.7	1.2	8
Tucson, Ariz.....	7.1	-	-	-	7.1	5.5	1.5	0.1	1
Tulsa, Okla.....	20.3	0.6	0.4	0.1	19.7	11.4	4.3	3.9	15
Tuscaloosa, Ala.....	5.6	0.1	-	-	5.5	3.2	1.6	0.7	2
Vallejo-Fairfield-Napa, Calif.....	32.1	2.4	2.2	0.2	29.7	22.3	7.1	0.3	1
Vineland-Millville-Bridgeton, N.J.....	6.3	1.1	1.0	0.1	5.2	1.3	3.1	0.8	12
Waterloo-Cedar Falls, Iowa.....	6.8	0.4	0.4	-	6.4	2.7	1.3	2.3	1
Wheeling, W. Va.-Ohio.....	10.0	0.4	0.4	-	9.6	5.5	3.0	1.0	17
Wilmington, Del.-N.J.-Md.....	136.1	3.7	3.6	0.1	132.4	64.7	59.0	8.4	1
Wilmington, N.C.....	13.2	-	-	-	13.1	3.4	5.6	4.1	4
York, Pa.....	13.8	1.6	1.3	0.2	12.2	2.7	6.3	3.2	7
Youngstown-Warren, Ohio.....	37.6	2.9	2.7	0.2	34.7	20.1	7.0	7.5	2

Note: Totals may not agree precisely with detail because of independent rounding. Major industry group 23, Apparel and Other Textile Products, was not included in the survey and therefore is excluded from the SMSA totals. No major industry groups are shown. No SMSA totals are shown where GAC is less than \$5.0 million or the standard error is 20 or greater.

- Represents zero.

Table 4A. Pollution Abatement Operating Costs, by Kind of Cost and Cost Recovered, by Form of Pollutants, and by Industry for Establishments With 20 or More Employees: 1980

(Millions of dollars)

SIC code	Industry	Operating cost					Cost recovered				Standard error of estimates (percent) ¹ GAC
		Total	By kind of cost				Total	By form of pollutants			
			Depreciation	Labor	Materials and supplies	Services, equipment leasing, and other costs		Air	Water	Solid waste	
	All industries ²	7,541.6	1,419.6	1,626.6	2,293.4	2,201.9	1,585.5	861.7	523.2	200.4	1
20	Food and kindred products.....	339.5	67.5	74.9	80.2	117.1	79.5	31.8	30.9	16.8	7
201	Meat products.....	51.6	11.9	12.8	12.7	14.3	11.1	0.7	6.1	4.4	2
2011	Meatpacking plants.....	25.9	5.8	7.1	6.3	6.7	5.5	0.7	3.9	1.0	1
2013	Sausages and other prepared meats.....	6.0	0.8	1.7	0.9	2.7	0.1	-	-	0.1	5
2016	Poultry dressing plants.....	17.7	5.1	3.6	5.1	4.0	5.0	-	2.0	3.0	15
202	Dairy products.....	30.6	3.5	7.4	3.7	15.3	4.7	1.9	1.7	1.1	13
2023	Condensed and evaporated milk.....	3.0	0.5	1.1	0.8	0.7	2.1	(D)	(D)	(D)	11
2026	Fluid milk.....	10.1	0.8	1.7	1.1	6.5	1.0	0.1	0.5	0.4	7
203	Preserved fruits and vegetables.....	55.3	9.4	14.9	8.9	22.7	7.4	1.0	2.1	4.3	3
2032	Canned specialties.....	6.1	0.7	1.5	0.8	3.1	0.1	-	-	-	2
2033	Canned fruits and vegetables.....	16.8	2.7	3.6	3.3	6.9	1.9	0.1	0.4	1.4	6
2034	Dehydrated fruits, vegetables, soups..	3.7	0.9	1.6	0.6	0.6	1.2	0.3	0.4	0.5	10
2035	Pickles, sauces, salad dressings.....	6.0	1.1	1.1	1.2	2.6	0.7	-	0.4	0.3	12
2037	Frozen fruits and vegetables.....	12.4	2.8	4.7	2.3	3.5	2.7	0.5	0.8	1.4	7
2038	Frozen specialties.....	10.3	1.2	2.4	0.8	5.9	0.8	-	0.1	0.7	15
204	Grain mill products.....	50.4	10.2	9.4	15.7	15.0	20.6	15.0	3.1	2.5	2
2041	Flour, other grain mill products.....	6.9	1.8	1.4	1.5	2.2	4.6	(D)	(D)	(D)	9
2043	Cereal breakfast foods.....	4.8	0.7	1.7	0.4	2.0	1.5	1.0	-	0.5	3
2046	Wet corn milling.....	23.8	4.6	2.6	10.5	6.0	4.3	(D)	1.7	(D)	1
2047	Dog, cat, and other pet food.....	5.2	0.9	1.4	1.3	1.5	1.4	0.3	(D)	(D)	5
205	Bakery products.....	7.1	0.4	1.2	0.8	4.6	0.4	0.1	0.1	0.2	4
2051	Bread, cake, and related products.....	4.9	0.3	0.6	0.6	3.3	0.1	-	0.1	-	5
206	Sugar, confectionery products.....	39.1	13.1	7.8	9.4	8.8	3.8	1.9	0.8	1.1	4
2061	Raw cane sugar.....	(D)	(D)	2.2	1.5	4.3	0.1	-	-	0.1	17
2062	Cane sugar refining.....	(D)	(D)	1.0	1.8	0.9	(D)	(D)	(D)	(D)	1
2063	Beet sugar.....	16.3	10.2	1.2	4.5	0.3	0.2	-	0.1	0.1	7
2065	Confectionery products.....	7.0	0.5	2.9	1.1	2.4	(D)	(D)	(D)	(D)	6
207	Fats and oils.....	33.1	6.6	6.9	8.6	10.8	12.6	8.8	3.4	0.3	4
2075	Soybean oil mills.....	14.8	3.6	3.1	3.5	4.5	8.3	6.9	1.4	-	5
2079	Shortening and cooking oils.....	9.8	1.4	2.2	3.4	2.7	1.9	(D)	(D)	(D)	2
208	Beverages.....	47.4	9.4	11.0	11.9	15.7	15.5	1.1	13.2	1.2	10
2082	Malt beverages.....	30.0	7.3	8.2	8.1	7.0	14.3	0.7	13.0	0.6	1
2086	Bottled and canned soft drinks.....	5.9	0.5	0.8	0.4	4.1	0.6	-	-	0.5	8
209	Misc. foods, kindred products.....	25.0	2.9	3.5	8.5	9.9	3.4	1.3	0.4	1.7	4
2095	Roasted coffee.....	11.2	0.8	0.6	6.7	3.2	(D)	(D)	-	(D)	1
2099	Food preparations, n.e.c.....	9.1	1.3	1.9	1.0	4.7	1.3	0.7	0.4	0.3	7
21	Tobacco products.....	11.1	3.5	4.0	1.9	1.7	5.4	5.3	-	-	2
2111	Cigarettes.....	6.9	2.0	2.7	1.1	1.2	5.3	5.3	-	-	1
22	Textile mill products.....	79.0	19.3	18.6	16.5	24.6	13.4	1.0	6.7	5.7	7
2211	Weaving mills, cotton.....	9.4	2.3	2.8	1.3	3.1	(D)	-	(D)	0.8	6
2221	Weaving mills, manmade fiber, silk.....	10.5	1.8	2.5	3.6	2.6	(D)	-	(D)	-	9
225	Knitting mills.....	9.5	2.3	2.2	1.9	3.0	1.7	0.5	0.2	1.0	10
2257	Circular knit fabric mills.....	3.1	0.8	0.7	0.7	0.8	1.0	(D)	(D)	(D)	18
226	Textile finishing, except wool.....	16.8	6.5	3.0	4.5	2.8	0.5	0.1	0.4	0.1	16
2262	Finishing plants, manmade fiber, silk.....	9.4	3.5	1.5	2.9	1.5	(D)	(D)	(D)	(D)	11
227	Floor covering mills.....	6.9	0.5	0.9	0.7	4.7	0.7	-	0.1	0.6	11
2272	Tufted carpets and rugs.....	6.0	0.4	0.7	0.5	4.4	0.7	-	(D)	(D)	12
229	Miscellaneous textile goods.....	10.0	1.3	1.8	2.1	4.7	4.1	0.4	0.7	3.0	10
24	Lumber and wood products.....	124.2	36.2	30.4	23.6	34.0	37.6	11.5	4.7	21.3	8
2411	Logging camps, log contractors.....	17.0	4.0	4.9	3.2	4.8	(D)	(D)	(D)	(D)	6
242	Sawmills and planing mills.....	34.5	12.4	10.3	5.3	6.3	13.5	3.5	-	10.0	11
2421	Sawmills, planing mills, general.....	31.9	11.4	9.9	5.2	5.4	11.3	1.3	-	9.9	12
243	Millwork, plywood, structural members...	30.3	8.4	6.5	4.3	11.1	11.9	5.2	0.3	6.5	15
2436	Softwood veneer and plywood.....	18.2	6.7	5.1	3.4	3.0	9.1	3.9	0.2	5.1	11
249	Miscellaneous wood products.....	37.6	10.9	7.7	10.4	8.3	10.8	2.6	4.3	3.8	13
2499	Wood products, n.e.c.....	24.1	6.3	4.1	7.6	5.9	6.5	0.9	6.3	(D)	12
25	Furniture and fixtures.....	26.7	6.9	5.9	4.0	9.8	4.6	3.7	0.1	0.8	5
251	Household furniture.....	17.9	5.2	4.0	2.4	6.2	4.1	3.3	0.1	0.7	7
2511	Wood household furniture.....	11.1	4.0	2.3	1.6	3.3	3.2	2.5	-	0.7	11

See footnotes at end of table.

Table 4A. Pollution Abatement Operating Costs, by Kind of Cost and Cost Recovered, by Form of Pollutants, and by Industry for Establishments With 20 or More Employees: 1980—Continued

(Millions of dollars)

SIC code	Industry	Operating cost					Cost recovered			Standard error of estimates (percent) ¹ GAC	
		Total	By kind of cost				Total	By form of pollutants			
			Depreciation	Labor	Materials and supplies	Services, equipment leasing, and other costs		Air	Water		Solid waste
26	Paper and allied products.....	701.5	173.5	122.8	241.4	163.4	248.1	107.1	100.3	40.7	4
2611	Pulpmills.....	106.8	26.8	17.7	46.3	15.9	43.5	(D)	27.8	(D)	7
2621	Papermills, except building paper.....	318.4	84.6	56.0	111.1	66.7	109.6	48.8	45.0	15.8	1
2631	Paperboard mills.....	210.4	54.9	36.5	65.1	53.9	67.7	32.0	25.9	9.7	5
264	Misc. converted paper products.....	33.5	3.9	7.6	7.1	14.9	19.8	9.6	0.1	10.0	4
2641	Paper coating and glazing.....	13.6	2.1	2.2	4.0	5.3	8.3	7.8	-	0.5	7
2643	Bags, except textile bags.....	4.2	0.2	0.7	0.5	2.8	6.0	0.1	-	5.9	12
2647	Sanitary paper products.....	10.0	1.1	3.2	2.2	3.6	3.0	1.1	0.1	1.8	13
265	Paperboard containers and boxes.....	68.7	1.9	3.4	35.8	7.5	10.6	0.8	0.8	9.1	10
2653	Corrugated and solid fiber boxes.....	8.5	1.1	1.9	1.7	3.8	4.5	-	0.3	4.2	13
27	Printing and publishing.....	41.3	4.4	9.4	8.6	18.3	13.8	6.7	0.5	6.6	6
2711	Newspapers.....	6.4	0.2	2.5	0.3	3.2	2.2	-	0.3	1.9	6
275	Commercial printing.....	23.8	3.6	3.5	5.9	10.5	9.3	6.7	0.2	2.4	7
2751	Commercial printing, letterpress.....	4.9	0.4	0.3	0.2	3.8	(D)	(D)	-	0.1	8
2752	Commercial printing, lithographic.....	8.7	0.9	1.8	2.2	3.5	(D)	(D)	0.1	1.5	9
2754	Commercial printing, gravure.....	8.5	2.2	0.9	2.5	2.9	4.7	3.8	0.1	0.8	6
28	Chemicals and allied products.....	1,779.9	331.7	338.5	590.4	519.3	305.9	152.2	127.1	26.5	1
281	Industrial inorganic chemicals.....	339.7	66.7	67.3	114.4	91.2	53.7	29.1	20.5	4.1	3
2812	Alkalies and chlorine.....	59.1	10.2	11.8	22.0	15.2	4.0	(D)	(D)	(D)	3
2816	Inorganic pigments.....	65.9	12.2	12.5	20.1	20.8	5.3	(D)	(D)	(D)	4
2819	Industrial inorganic chemicals, n.e.c.....	211.6	43.6	42.1	71.3	54.6	44.4	21.5	18.9	4.0	5
282	Plastics materials, synthetics.....	228.4	49.0	45.8	66.2	67.1	44.5	15.7	22.4	6.4	2
2821	Plastics materials and resins.....	143.9	31.0	25.5	37.3	49.7	31.9	10.5	16.7	4.7	3
2822	Synthetic rubber.....	20.9	3.0	4.9	9.0	3.9	7.2	3.3	(D)	(D)	6
2823	Cellulosic manmade fibers.....	11.8	3.0	3.0	(D)	(D)	(D)	(D)	(D)	(D)	1
2824	Organic fibers, noncellulosic.....	51.9	12.0	12.3	(D)	(D)	(D)	(D)	(D)	(D)	1
283	Drugs.....	75.5	10.1	15.4	21.0	29.0	13.8	6.8	5.7	1.3	2
2833	Medicinals and botanicals.....	39.6	4.8	6.7	14.1	14.0	5.1	(D)	3.8	0.8	4
2834	Pharmaceutical preparations.....	34.7	5.2	8.3	6.7	14.5	8.7	(D)	(D)	0.5	1
284	Soaps, cleaners, toilet goods.....	34.9	7.1	6.2	4.7	17.0	3.5	2.6	0.5	0.4	4
2841	Soap and other detergents.....	15.5	3.5	2.5	2.1	7.5	2.9	2.5	0.2	0.2	7
2843	Surface active agents.....	11.0	2.8	1.9	1.9	4.4	0.1	0.1	-	-	10
2844	Toilet preparations.....	5.6	0.5	1.1	0.4	3.6	(D)	(D)	(D)	(D)	2
2851	Paints and allied products.....	18.8	1.5	3.4	3.4	10.9	3.6	0.1	0.4	3.1	7
286	Industrial organic chemicals.....	789.0	132.0	148.8	282.4	225.8	136.8	63.7	62.2	10.9	1
2865	Cyclic crudes and intermediates.....	143.5	22.1	21.5	39.1	60.8	38.1	24.9	12.4	0.8	2
2869	Industrial organic chemicals, n.e.c.....	642.5	108.4	126.7	242.7	164.7	97.8	38.7	48.9	10.1	1
287	Agricultural chemicals.....	233.9	55.6	38.0	81.3	59.1	38.2	25.8	12.3	0.1	3
2873	Nitrogenous fertilizers.....	70.4	24.2	9.5	21.2	15.7	9.7	4.6	5.0	0.1	8
2874	Phosphatic fertilizers.....	69.1	18.6	11.6	25.7	13.2	20.3	13.7	6.7	-	4
2879	Agricultural chemicals, n.e.c.....	91.4	12.0	16.2	33.7	29.6	7.5	6.8	0.7	-	5
289	Miscellaneous chemical products.....	59.7	9.6	13.8	17.1	19.2	11.5	8.4	3.1	0.1	9
2892	Explosives.....	9.6	0.7	2.8	5.2	0.9	0.8	0.8	-	-	15
2899	Chemical preparations, n.e.c.....	31.3	6.1	6.2	8.6	10.5	5.2	(D)	(D)	0.1	11
29	Petroleum and coal products.....	1,408.8	173.3	295.1	547.0	393.5	506.7	310.1	189.6	7.0	1
2911	Petroleum refining.....	1,377.1	166.6	291.5	539.2	380.0	501.1	307.3	189.5	4.3	1
295	Paving and roofing materials.....	22.3	4.0	2.4	4.2	11.7	1.8	1.7	-	0.1	10
2952	Asphalt felts and coatings.....	19.9	3.3	1.8	3.7	11.1	1.5	1.4	-	0.1	11
299	Misc. petroleum, coal products.....	9.4	2.6	1.2	3.7	1.9	3.7	1.0	0.1	2.6	9
2999	Petroleum and coal products, n.e.c.....	5.9	1.8	0.4	3.0	0.7	-	-	-	-	11
30	Rubber, misc. plastics products.....	94.0	12.7	19.4	25.2	36.8	18.1	6.9	1.6	9.6	4
3011	Tires and inner tubes.....	23.2	2.7	6.2	7.3	7.1	3.9	(D)	(D)	0.4	1
3069	Fabricated rubber products, n.e.c.....	12.2	1.5	3.3	1.9	5.6	1.6	(D)	(D)	0.4	6
3079	Miscellaneous plastics products.....	53.8	8.1	9.1	14.8	21.8	12.2	2.4	1.2	8.6	7
31	Leather and leather products.....	18.9	4.0	3.4	4.3	7.1	0.5	0.1	0.2	0.3	19
32	Stone, clay, glass products.....	288.7	66.6	63.9	70.6	87.8	83.9	59.9	7.7	16.3	3
3211	Flat glass.....	10.9	4.4	2.5	1.2	2.7	-	-	-	-	7
322	Glass, pressed or blown.....	30.1	8.4	5.3	5.4	11.3	10.6	(D)	0.3	(D)	4
3221	Glass containers.....	10.6	1.8	2.0	1.8	5.2	8.4	(D)	-	(D)	3
3229	Pressed and blown glass, n.e.c.....	19.5	6.7	3.3	3.6	6.0	2.2	(D)	0.3	(D)	7
3241	Cement, hydraulic.....	91.6	19.7	24.6	27.1	19.9	43.8	(D)	0.6	(D)	7

See footnotes at end of table.

Table 4A. Pollution Abatement Operating Costs, by Kind of Cost and Cost Recovered, by Form of Pollutants, and by Industry for Establishments With 20 or More Employees: 1980—Continued

(Millions of dollars)

SIC code	Industry	Operating cost					Cost recovered				Standard error of estimates (percent) ¹ GAC	
		Total	By kind of cost				Total	By form of pollutants				
			Depreciation	Labor	Materials and supplies	Services, equipment, leasing, and other costs		Air	Water	Solid waste		
326	Stone, clay, glass products--Continued											
	Pottery and related products.....	6.9	1.2	2.1	2.0	1.6	2.6	1.0	1.0	0.5		15
327	Concrete, gypsum, plaster products.....	34.0	5.1	8.7	10.3	10.0	3.9	2.5	0.5	1.0		12
3273	Ready-mixed concrete.....	7.0	1.2	2.7	1.3	1.9	1.8	0.7	0.3	0.8		16
329	Misc. nonmetallic mineral products.....	101.1	25.3	17.3	19.1	39.6	22.0	13.7	5.2	3.0		6
3292	Asbestos products.....	20.1	5.3	3.4	3.8	7.8	1.6	0.9	0.3	0.4		11
3296	Mineral wool.....	48.1	10.7	8.7	6.5	22.3	15.8	8.7	4.5	2.6		7
33	Primary metal industries.....	1,645.6	363.7	349.4	445.8	486.4	169.5	137.2	24.3	8.1		1
331	Blast furnace, basic steel products.....	1,060.1	235.0	219.8	283.5	321.6	20.1	4.7	14.7	0.7		1
3312	Blast furnaces and steel mills.....	1,006.2	222.8	208.2	265.6	309.6	18.8	3.8	14.3	0.6		1
3313	Electrometallurgical products.....	32.3	8.9	7.5	13.1	2.8	(D)	(D)	(D)	(D)		2
3315	Steel wire and related products.....	6.3	1.1	1.3	1.9	2.0	0.2	0.1	-	0.1		11
3316	Cold finishing of steel shapes.....	11.3	1.7	2.3	2.0	5.3	(D)	(D)	(D)	(D)		2
332	Iron and steel foundries.....	168.5	44.0	39.1	47.9	37.5	6.6	3.3	0.2	3.1		4
3321	Gray iron foundries.....	135.1	35.0	31.9	41.9	26.3	(D)	(D)	(D)	(D)		4
3325	Steel foundries, n.e.c.....	19.4	5.6	4.3	3.1	6.4	(D)	(D)	(D)	(D)		10
333	Primary nonferrous metals.....	315.7	66.8	64.3	85.1	99.3	123.5	115.4	7.7	0.4		1
3331	Primary copper.....	109.6	16.3	19.4	31.2	42.7	43.2	(D)	(D)	(D)		1
3332	Primary lead.....	(D)	5.7	5.5	7.5	(D)	12.6	12.6	-	-		4
3333	Primary zinc.....	14.6	5.8	1.9	2.1	4.5	6.7	6.6	-	-		1
3334	Primary aluminum.....	(D)	23.8	29.0	(D)	30.3	48.2	42.5	(D)	(D)		1
3339	Primary nonferrous metals, n.e.c.....	50.0	15.2	8.5	(D)	(D)	12.8	(D)	(D)	-		4
3341	Secondary nonferrous metals.....	28.3	5.9	6.8	8.3	7.2	5.7	5.4	0.2	0.2		12
335	Nonferrous rolling and drawing.....	59.6	9.4	15.9	17.4	16.8	7.3	4.6	1.0	1.7		19
3351	Copper rolling and drawing.....	9.3	2.4	2.1	2.7	2.1	0.8	(D)	(D)	(D)		3
3353	Aluminum sheet, plate, and foil.....	21.7	3.6	6.4	4.9	6.6	3.0	(D)	(D)	(D)		1
3356	Nonferrous rolling and drawing, n.e.c.....	12.4	1.0	4.0	4.5	2.9	1.5	1.3	0.2	0.1		10
3357	Nonferrous wiredrawing, insulating.....	9.0	1.0	1.4	4.1	2.4	1.5	1.1	0.3	0.1		8
336	Nonferrous foundries.....	10.2	2.1	2.2	3.1	2.8	5.9	3.5	0.5	1.9		9
3361	Aluminum foundries.....	6.7	1.4	1.8	1.7	1.8	3.6	(D)	(D)	-		10
34	Fabricated metal products.....	185.3	27.2	45.7	49.7	62.5	23.9	8.0	5.2	10.6		4
341	Metal cans, shipping containers.....	20.7	2.0	3.3	9.5	6.9	0.8	0.4	-	0.4		9
3411	Metal cans.....	15.8	1.3	1.5	8.0	5.0	0.2	0.2	-	0.1		5
342	Cutlery, handtools and hardware.....	25.6	3.1	6.6	9.2	6.2	2.9	1.0	0.9	1.0		5
3429	Hardware, n.e.c.....	19.3	2.2	5.4	6.9	4.3	0.9	0.1	0.4	(D)		5
344	Fabricated structural metal products....	18.6	2.6	4.6	3.8	7.6	2.6	1.5	0.1	1.0		6
3443	Fabricated platework, boiler shop.....	4.2	0.7	1.2	0.4	1.8	(D)	(D)	-	0.5		9
3444	Sheet metalwork.....	4.6	0.8	0.9	1.1	1.8	1.0	0.4	-	0.5		9
345	Screw machine products, bolts, etc.....	9.2	1.5	2.1	2.5	3.0	0.7	-	0.7	-		15
3452	Bolts, nuts, rivets, and washers.....	8.7	1.4	2.0	2.5	2.6	0.7	-	0.7	-		16
346	Metal forgings and stampings.....	33.0	5.2	11.2	6.1	10.4	3.7	0.2	0.9	2.7		4
3462	Iron and steel forgings.....	5.1	1.6	1.3	1.1	1.1	0.1	-	0.1	-		8
3463	Nonferrous forgings.....	(D)	(D)	(D)	1.3	1.8	-	-	-	-		9
3465	Automotive stampings.....	15.0	1.7	6.6	1.9	4.8	2.9	-	0.3	2.5		4
3469	Metal stampings, n.e.c.....	6.8	0.9	1.8	1.4	2.4	0.6	0.1	0.5	-		13
348	Ordnance and accessories, n.e.c.....	15.0	2.9	5.7	3.4	2.9	2.8	0.1	-	2.7		5
3483	Ammunition, except small arms, n.e.c..	4.7	(D)	1.9	(D)	0.5	-	-	-	-		10
349	Misc. fabricated metal products.....	19.0	3.4	4.7	3.7	6.9	4.0	0.9	0.3	2.8		5
3494	Valves and pipe fittings.....	9.8	2.6	2.3	1.7	3.1	1.2	0.8	0.1	0.3		6
35	Machinery, except electrical.....	178.7	27.1	45.7	46.6	59.1	17.6	5.0	5.8	6.7		1
351	Engines and turbines.....	30.2	6.4	6.8	9.8	7.0	2.1	0.2	1.8	0.2		2
3511	Turbines, turbine generator sets.....	7.6	1.1	0.8	1.7	4.1	(D)	-	(D)	(D)		1
3519	Internal combustion engines, n.e.c....	22.6	5.4	6.0	8.1	2.9	(D)	0.2	(D)	(D)		3
352	Farm and garden machinery.....	18.3	2.8	4.8	4.4	6.1	0.8	0.1	0.2	0.5		1
3523	Farm machinery and equipment.....	16.8	2.8	4.4	4.3	5.3	0.7	0.1	0.2	0.3		1
353	Construction, related machinery.....	35.8	5.8	9.0	9.4	11.5	1.5	0.3	0.4	0.8		2
3531	Construction machinery.....	26.8	4.6	7.1	7.9	7.1	1.0	0.3	(D)	(D)		2
3533	Oilfield machinery.....	4.5	0.6	1.1	0.8	2.1	0.2	-	-	0.1		4
354	Metalworking machinery.....	9.2	1.1	2.5	1.1	4.5	2.3	0.2	0.2	1.9		5
355	Special industry machinery.....	13.3	1.7	3.8	4.1	3.7	3.5	1.3	1.4	0.7		6
3559	Special industry machinery, n.e.c.....	8.3	1.0	2.7	3.1	1.6	3.3	1.3	1.4	0.6		8

See footnotes at end of table.

Table 4A. Pollution Abatement Operating Costs, by Kind of Cost and Cost Recovered, by Form of Pollutants, and by Industry for Establishments With 20 or More Employees: 1980—Continued

(Millions of dollars)

SIC code	Industry	Operating cost					Cost recovered				Standard error of estimates (percent) ¹ GAC
		Total	By kind of cost				Total	By form of pollutants			
			Depreciation	Labor	Materials and supplies	Services, equipment leasing, and other costs		Air	Water	Solid waste	
	Machinery, except electrical--Continued										
356	General industrial machinery.....	21.0	2.1	6.2	4.1	8.6	1.4	0.1	0.9	0.4	5
3561	Pumps and pumping equipment.....	4.2	0.2	1.1	0.5	2.3	-	-	-	-	10
3562	Ball and roller bearings.....	6.2	0.7	2.8	1.0	1.6	(D)	-	(D)	0.3	8
357	Office and computing machines.....	25.2	2.9	5.1	9.8	7.3	3.1	1.9	0.3	0.9	2
3573	Electronic computing equipment.....	17.9	1.6	3.4	7.8	5.0	1.2	-	0.3	0.8	2
3579	Office machines, typewriters, etc.....	6.0	(D)	(D)	1.4	1.9	1.9	1.8	-	-	7
358	Refrigeration and service machinery.....	17.2	2.8	5.5	3.1	5.8	2.2	0.8	0.3	1.1	2
3585	Refrigeration, heating equipment.....	15.1	2.6	5.1	2.7	4.6	2.1	(D)	(D)	1.0	2
359	Misc. machinery, except electrical.....	8.8	1.5	2.0	0.8	4.5	0.7	0.2	0.3	0.2	9
3592	Carburetors, pistons, rings, etc.....	5.8	1.4	1.5	0.7	2.2	0.6	0.2	0.3	0.1	5
36	Electric, electronic equipment.....	171.4	29.4	42.1	38.9	60.9	17.0	9.0	3.0	4.9	1
361	Electric distributing equipment.....	8.8	1.2	1.9	2.6	3.0	0.1	-	-	-	4
3613	Switchgear, switchboard apparatus.....	4.4	0.7	1.2	1.1	1.3	-	-	-	-	6
362	Electrical industrial apparatus.....	23.8	3.6	4.0	4.9	11.3	1.4	0.8	0.3	0.3	2
3621	Motors and generators.....	5.4	1.0	1.3	0.5	2.6	0.3	(D)	0.1	(D)	4
3624	Carbon and graphite products.....	9.2	1.5	1.1	2.6	4.0	0.7	0.7	-	-	3
363	Household appliances.....	20.8	2.9	6.7	4.2	6.9	2.2	0.9	0.8	0.5	1
3632	Household refrigerators, freezers.....	4.4	0.5	1.3	0.7	1.9	0.5	-	0.3	0.1	1
3633	Household laundry equipment.....	4.2	0.5	1.8	0.7	1.2	0.2	-	0.2	0.1	1
364	Electric lighting, wiring equipment.....	15.4	1.9	5.4	3.6	4.5	1.3	0.2	0.3	0.8	6
3647	Vehicular lighting equipment.....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	1
365	Radio, TV receiving equipment.....	8.0	0.9	1.4	1.7	4.0	0.8	0.4	0.2	0.1	6
3651	Radio and TV receiving sets.....	6.5	0.9	1.2	1.3	3.1	0.4	(D)	(D)	(D)	4
366	Communication equipment.....	28.5	4.0	8.9	5.2	10.2	3.4	1.6	0.2	1.5	1
3661	Telephone and telegraph apparatus.....	14.8	2.7	5.4	2.8	4.0	2.0	(D)	(D)	(D)	1
3662	Radio and TV communication equipment..	13.7	1.3	3.6	2.4	6.3	1.4	(D)	(D)	(D)	2
367	Electronic components, accessories.....	45.5	8.0	10.3	10.9	16.3	4.3	2.6	0.7	1.1	5
3674	Semiconductors, related devices.....	21.2	3.1	5.6	4.4	8.2	0.9	(D)	(D)	0.6	4
3679	Electronic components, n.e.c.....	17.1	4.2	3.4	3.7	5.7	3.3	(D)	(D)	0.4	14
369	Misc. electric equipment, supplies.....	20.8	6.9	3.5	5.8	4.6	3.6	2.6	0.5	0.5	5
3691	Storage batteries.....	13.0	4.9	2.1	4.7	1.3	2.1	(D)	0.2	(D)	7
3694	Engine electrical equipment.....	4.3	1.5	0.7	0.3	1.8	0.4	(D)	0.2	(D)	1
37	Transportation equipment.....	356.5	59.9	131.7	79.3	85.7	24.6	0.8	10.2	13.6	1
371	Motor vehicles and equipment.....	269.2	52.1	98.2	64.4	54.5	20.3	0.6	9.6	10.1	1
3711	Motor vehicles and car bodies.....	164.9	31.5	65.9	40.3	27.4	3.8	-	1.0	2.9	1
3714	Motor vehicle parts, accessories.....	101.0	20.3	31.4	23.7	25.6	16.3	0.6	8.6	7.1	1
372	Aircraft and parts.....	40.1	3.6	16.5	8.6	11.5	2.4	0.1	0.3	2.0	7
3721	Aircraft.....	14.7	0.5	6.6	2.3	5.5	0.4	(D)	(D)	(D)	1
3724	Aircraft engines and engine parts.....	16.6	2.5	7.5	4.0	2.6	1.9	-	0.2	1.7	17
3728	Aircraft equipment, n.e.c.....	8.7	0.5	2.4	2.3	3.4	0.2	(D)	(D)	(D)	3
373	Ship, boat building, repairing.....	25.1	2.2	8.1	2.5	12.2	0.3	0.1	-	0.2	5
3731	Ship building and repairing.....	23.1	2.2	7.7	2.5	10.7	0.2	(D)	(D)	(D)	3
3743	Railroad equipment.....	7.4	0.8	3.0	1.3	2.6	-	-	-	-	7
376	Guided missiles, space vehicles.....	9.9	0.8	5.0	1.2	2.8	1.4	-	0.2	1.1	1
3761	Guided missiles, space vehicles.....	6.0	0.5	3.1	0.8	1.6	1.1	-	0.2	0.9	1
38	Instruments, related products.....	68.8	9.0	21.2	15.3	23.2	11.8	2.8	5.1	3.9	1
382	Measuring, controlling devices.....	8.5	0.8	2.1	1.3	4.2	0.5	0.1	0.2	0.2	5
3825	Instruments to measure electricity....	4.3	0.4	0.9	0.6	2.3	0.1	-	-	-	7
384	Medical instruments, supplies.....	6.7	0.9	1.7	1.3	2.8	0.6	0.2	0.1	0.3	6
3842	Surgical appliances and supplies.....	4.5	0.8	1.2	0.9	1.7	0.3	0.1	-	0.2	6
3861	Photographic equipment and supplies....	49.3	6.9	16.5	11.8	14.0	10.4	(D)	4.7	(D)	1
39	Misc. manufacturing industries.....	21.9	3.4	4.3	3.8	10.2	3.6	2.4	0.2	1.1	5
394	Toys and sporting goods.....	4.7	0.6	1.0	0.5	2.6	0.8	-	-	0.7	11
399	Miscellaneous manufactures.....	9.0	1.4	1.4	1.7	4.5	1.3	1.2	-	0.1	9

Note: Total may not agree precisely with detail because of independent rounding. No data cells are shown where GAC is less than \$5.0 million or the standard error is 20 or greater.

- Represents zero. (D) Withheld to avoid disclosing operations of individual companies.

¹The standard error is calculated based on GAC (total gross annual cost) shown on table 3A.

²Excludes major industry group 23, Apparel and Other Textile Products.

Table 4B. Pollution Abatement Operating Costs, by Kind of Cost and Cost Recovered, by Form of Pollutants, and by State and Major Industry Group for Establishments With 20 or More Employees: 1980

(Millions of dollars)

SIC code	State and major industry group	Operating cost					Cost recovered			Standard error of estimates (percent) ¹ GAC	
		Total	By kind of cost				Total	By form of pollutants			
			De-precia-tion	Labor	Materials and supplies	Services, equipment leasing, and other costs		Air	Water		Solid waste
	United States ²	7,541.6	1,419.6	1,626.6	2,293.4	2,201.7	1,585.5	861.7	523.2	200.4	1
	New England Division:										
	Maine.....	46.3	14.7	8.3	15.4	7.9	14.2	8.4	0.1	5.7	4
26	Paper and allied products.....	37.4	12.7	5.9	12.8	6.0	13.3	(D)	-	(D)	3
	New Hampshire.....	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)
26	Paper and allied products.....	6.5	1.5	1.1	1.2	2.7	(D)	-	(D)	(D)	5
	Vermont.....	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)
	Massachusetts.....	69.5	10.9	15.8	20.2	22.3	21.4	7.9	4.2	9.3	12
26	Paper and allied products.....	8.1	1.2	1.6	2.9	2.4	6.0	4.7	0.7	0.6	14
28	Chemicals and allied products.....	10.4	2.2	1.4	2.5	4.2	1.8	(D)	0.4	(D)	12
34	Fabricated metal products.....	6.2	1.9	1.2	2.0	1.0	3.2	0.8	2.3	-	13
36	Electric, electronic equipment.....	11.2	1.3	1.8	4.9	3.2	0.6	(D)	(D)	0.1	19
38	Instruments, related products.....	8.7	1.0	4.5	1.2	2.0	(D)	-	(D)	-	3
	Rhode Island.....	8.6	1.2	1.7	2.4	3.2	2.4	2.3	-	0.1	8
	Connecticut.....	68.7	6.9	11.9	27.9	21.9	17.7	2.5	8.1	7.1	9
28	Chemicals and allied products.....	22.9	(D)	2.0	(D)	9.8	7.8	(D)	7.1	(D)	5
34	Fabricated metal products.....	8.1	1.3	1.7	2.8	2.1	1.1	0.4	0.1	0.7	16
37	Transportation equipment.....	8.1	1.4	2.9	2.1	1.7	-	-	-	-	2
	Middle Atlantic Division:										
	New York.....	306.5	57.6	67.8	88.3	92.6	59.3	27.5	20.1	11.6	2
20	Food and kindred products.....	10.9	1.6	2.9	1.9	4.4	2.4	2.1	0.2	0.1	6
26	Paper and allied products.....	22.5	7.4	5.5	5.9	3.7	18.3	(D)	(D)	3.0	7
28	Chemicals and allied products.....	80.5	19.5	13.8	15.6	31.1	5.9	3.8	1.3	0.8	8
32	Stone, clay, glass products.....	10.9	2.4	2.2	3.1	3.2	1.1	0.5	(D)	(D)	7
33	Primary metal industries.....	43.5	10.3	8.4	16.9	7.8	14.6	(D)	(D)	-	1
34	Fabricated metal products.....	7.8	1.0	2.5	1.2	3.1	0.4	0.1	(D)	(D)	10
35	Machinery, except electrical.....	21.3	2.4	5.4	8.3	5.2	1.6	(D)	(D)	1.2	2
36	Electric, electronic equipment.....	29.7	5.1	8.4	4.1	14.7	2.6	1.3	(D)	(D)	3
37	Transportation equipment.....	29.2	(D)	4.3	(D)	3.8	1.3	(D)	(D)	0.8	1
38	Instruments, related products.....	33.3	4.2	10.6	9.2	9.3	(D)	0.1	(D)	(D)	1
	New Jersey.....	358.4	43.9	63.9	98.1	152.3	91.9	63.5	22.4	6.0	5
20	Food and kindred products.....	21.3	1.9	2.7	9.6	7.2	1.8	0.8	(D)	(D)	11
28	Chemicals and allied products.....	146.6	21.7	22.9	54.7	47.3	9.4	5.1	3.0	1.3	2
29	Petroleum and coal products.....	105.0	7.7	20.4	10.1	66.9	47.3	(D)	15.1	(D)	1
32	Stone, clay, glass products.....	14.8	3.3	2.3	1.8	7.4	3.4	(D)	(D)	1.3	12
33	Primary metal industries.....	21.9	3.0	6.4	9.5	3.1	24.1	23.8	(D)	(D)	11
34	Fabricated metal products.....	6.9	0.6	1.3	1.9	2.8	-	-	-	-	8
35	Machinery, except electrical.....	4.6	0.2	1.7	1.2	1.5	0.2	(D)	(D)	0.1	8
36	Electric, electronic equipment.....	6.9	1.2	1.1	2.0	2.0	1.0	0.8	(D)	(D)	6
37	Transportation equipment.....	7.9	0.3	1.0	2.9	3.7	-	-	-	-	3
	Pennsylvania.....	544.1	102.5	103.1	168.8	170.0	96.4	46.8	37.8	11.7	1
20	Food and kindred products.....	12.3	1.6	2.3	3.1	5.3	2.0	0.5	0.8	0.7	5
26	Paper and allied products.....	29.3	5.0	6.5	11.4	6.4	19.8	(D)	11.8	(D)	3
28	Chemicals and allied products.....	52.3	8.0	11.7	13.8	18.8	14.1	4.9	7.5	1.7	6
29	Petroleum and coal products.....	86.2	7.8	11.8	23.0	43.5	28.8	(D)	(D)	(D)	1
30	Rubber, misc. plastics products.....	5.0	0.7	0.8	1.7	1.8	0.9	0.9	-	-	14
32	Stone, clay, glass products.....	24.0	5.1	5.4	4.7	8.8	11.8	9.8	1.5	0.4	16
33	Primary metal industries.....	275.2	63.9	52.0	97.8	61.5	11.8	3.6	5.2	3.0	1
34	Fabricated metal products.....	10.3	1.3	2.2	2.6	4.1	0.3	-	(D)	(D)	5
35	Machinery, except electrical.....	11.7	2.4	1.5	1.6	6.1	0.1	-	-	-	3
36	Electric, electronic equipment.....	13.6	2.9	3.3	3.1	4.3	0.7	0.3	0.2	0.3	5
37	Transportation equipment.....	7.4	0.6	2.4	2.3	2.1	0.2	-	-	0.2	2
	East North Central Division:										
	Ohio.....	455.6	82.9	122.1	108.0	142.5	55.0	24.2	18.8	12.0	3
20	Food and kindred products.....	14.4	2.7	2.5	3.6	5.5	3.5	0.3	(D)	(D)	7
26	Paper and allied products.....	21.8	4.5	5.0	3.4	8.9	4.1	1.5	2.5	-	6
28	Chemicals and allied products.....	54.3	8.6	11.3	14.1	20.6	9.4	5.3	3.6	0.4	6
29	Petroleum and coal products.....	15.8	1.9	5.2	4.9	3.7	14.3	(D)	(D)	2.6	1
30	Rubber, misc. plastics products.....	20.3	2.7	5.1	7.5	5.1	3.2	(D)	(D)	1.2	2
32	Stone, clay, glass products.....	27.2	7.2	6.5	5.8	7.9	3.2	1.9	(D)	(D)	8
33	Primary metal industries.....	206.6	40.7	54.1	50.0	62.1	6.4	5.6	0.8	0.1	1
34	Fabricated metal products.....	26.4	4.1	8.0	7.4	6.3	1.2	(D)	(D)	0.6	4
35	Machinery, except electrical.....	15.1	2.4	4.2	2.2	6.2	1.0	0.3	0.5	0.2	6
36	Electric, electronic equipment.....	8.2	0.9	2.9	1.5	3.0	0.8	0.3	0.1	0.4	4
37	Transportation equipment.....	41.5	7.0	16.3	7.1	11.0	6.2	0.1	1.6	4.5	2

See footnotes at end of table.

Table 4B. Pollution Abatement Operating Costs, by Kind of Cost and Cost Recovered, by Form of Pollutants, and by State and Major Industry Group for Establishments With 20 or More Employees: 1980—Continued

(Millions of dollars)

SIC code	State and major industry group	Operating cost					Cost recovered				Standard error of estimates (percent) ¹ GAC
		Total	By kind of cost				Total	By form of pollutants			
			De-precia-tion	Labor	Materials and supplies	Services, equipment leasing, and other costs		Air	Water	Solid waste	
East North Central Division--Continued											
	Indiana.....	386.8	88.9	82.1	84.4	131.1	56.7	28.1	24.7	4.0	1
20	Food and kindred products.....	10.1	1.5	2.4	3.0	3.1	6.7	5.5	1.0	0.2	6
28	Chemicals and allied products.....	42.7	8.5	8.2	5.9	20.1	(D)	0.6	(D)	-	4
29	Petroleum and coal products.....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(X)
30	Rubber, misc. plastics products.....	4.5	0.5	0.9	1.5	1.6	0.6	-	0.6	-	19
33	Primary metal industries.....	217.0	58.7	44.4	55.8	58.1	(D)	1.2	(D)	0.8	1
35	Machinery, except electrical.....	5.2	1.1	1.5	0.6	1.9	0.2	(D)	(D)	(D)	7
36	Electric, electronic equipment.....	17.7	2.8	4.6	3.3	6.9	0.8	0.4	(D)	(D)	1
37	Transportation equipment.....	16.1	3.8	5.7	2.8	3.7	4.0	(D)	2.3	(D)	2
	Illinois.....	384.9	74.6	75.3	106.3	128.5	44.9	25.6	8.8	10.4	4
20	Food and kindred products.....	32.9	5.2	6.3	10.0	11.4	3.0	0.8	0.9	1.3	3
26	Paper and allied products.....	12.3	1.2	1.5	4.5	5.1	2.4	1.1	0.1	1.2	19
27	Printing and publishing.....	8.6	1.1	1.2	2.3	4.0	2.1	(D)	-	(D)	18
28	Chemicals and allied products.....	67.9	15.1	10.1	16.0	26.8	9.5	4.4	3.8	1.4	4
29	Petroleum and coal products.....	62.6	10.8	11.3	19.8	20.7	11.6	(D)	(D)	-	1
30	Rubber, misc. plastics products.....	8.1	0.7	1.5	2.5	3.4	1.5	(D)	(D)	0.8	7
32	Stone, clay, glass products.....	11.6	3.0	3.0	2.4	3.1	0.4	0.3	-	0.2	17
33	Primary metal industries.....	99.1	26.0	19.9	24.4	28.9	4.8	4.2	0.1	0.5	14
34	Fabricated metal products.....	19.1	3.1	4.5	6.0	5.5	4.8	1.9	(D)	(D)	12
35	Machinery, except electrical.....	33.2	4.6	8.1	12.3	7.8	3.1	0.7	0.6	1.8	1
36	Electric, electronic equipment.....	10.1	1.3	2.9	2.3	3.6	0.7	0.1	0.3	0.4	3
37	Transportation equipment.....	8.4	0.7	3.0	1.3	3.4	(D)	-	-	(D)	4
	Michigan.....	367.2	68.0	102.8	87.7	108.5	48.9	16.8	21.8	10.3	13
20	Food and kindred products.....	8.0	0.9	1.8	1.7	3.7	0.9	(D)	(D)	0.2	7
28	Chemicals and allied products.....	51.9	7.6	17.7	8.1	18.5	16.7	8.6	(D)	(D)	4
29	Petroleum and coal products.....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(X)
32	Stone, clay, glass products.....	16.3	2.5	3.8	4.0	6.0	4.7	(D)	-	(D)	9
33	Primary metal industries.....	104.6	19.4	29.0	28.0	28.1	1.3	0.9	0.4	-	1
34	Fabricated metal products.....	11.9	1.7	3.1	3.4	3.6	3.4	0.2	0.6	2.6	12
35	Machinery, except electrical.....	13.7	3.5	3.8	2.8	3.5	1.9	(D)	(D)	0.1	3
37	Transportation equipment.....	105.6	24.7	33.2	25.8	21.9	8.0	0.1	4.4	3.5	1
	Wisconsin.....	124.7	25.3	27.8	31.7	39.8	20.2	6.3	10.5	3.4	6
26	Paper and allied products.....	57.3	11.7	11.2	20.8	13.6	12.2	1.3	9.3	1.6	8
34	Fabricated metal products.....	5.7	0.7	1.7	1.7	1.5	0.5	0.1	0.2	0.2	14
35	Machinery, except electrical.....	7.4	0.8	2.1	1.6	2.9	0.5	(D)	-	(D)	4
37	Transportation equipment.....	5.0	0.7	2.0	0.5	1.9	(D)	-	-	(D)	2
West North Central Division:											
	Minnesota.....	73.1	21.4	11.5	10.5	29.5	10.6	5.9	2.6	2.1	2
20	Food and kindred products.....	18.3	10.5	2.2	2.7	2.9	2.4	0.9	1.0	0.5	4
26	Paper and allied products.....	13.3	3.7	1.6	1.9	6.1	(D)	(D)	-	(D)	7
29	Petroleum and coal products.....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(X)
	Iowa.....	69.7	14.7	15.2	17.7	22.0	15.9	10.1	4.6	1.2	2
20	Food and kindred products.....	24.0	4.9	4.2	6.0	8.9	9.5	6.5	2.5	0.5	3
28	Chemicals and allied products.....	15.0	4.7	2.1	2.7	5.6	2.9	(D)	(D)	-	5
35	Machinery, except electrical.....	13.7	2.2	4.0	3.8	3.5	0.6	(D)	(D)	(D)	4
	Missouri.....	105.8	16.8	33.6	24.8	30.6	19.3	13.2	4.0	2.1	4
20	Food and kindred products.....	8.2	1.5	2.1	1.7	2.7	3.3	2.1	0.9	0.3	7
28	Chemicals and allied products.....	28.4	4.3	4.4	10.8	8.9	5.7	2.4	3.0	0.3	14
29	Petroleum and coal products.....	6.9	(D)	(D)	1.6	1.3	(D)	(D)	-	-	14
32	Stone, clay, glass products.....	8.8	2.1	2.0	2.6	2.1	(D)	(D)	-	-	13
33	Primary metal industries.....	17.2	3.4	4.0	2.9	6.9	(D)	(D)	-	-	4
37	Transportation equipment.....	23.4	1.5	16.0	2.3	3.6	(D)	-	-	(D)	1
	North Dakota.....	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)
	South Dakota.....	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)
	Nebraska.....	14.9	3.2	4.4	3.9	3.3	3.7	1.5	1.0	1.2	8
20	Food and kindred products.....	5.8	1.2	2.1	1.4	1.0	2.3	1.0	(D)	(D)	8
	Kansas.....	53.1	19.0	8.9	8.2	17.1	7.9	3.5	1.8	2.7	7
20	Food and kindred products.....	4.9	1.0	1.0	0.8	2.1	1.7	1.1	0.2	0.3	4
28	Chemicals and allied products.....	16.2	11.3	0.9	1.9	2.1	0.8	0.5	0.3	-	5
29	Petroleum and coal products.....	5.2	(D)	1.2	1.5	(D)	(D)	(D)	(D)	-	1
32	Stone, clay, glass products.....	13.5	3.5	2.7	(D)	(D)	1.3	0.4	0.9	-	9
South Atlantic Division:											
	Delaware.....	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)
28	Chemicals and allied products.....	35.3	5.0	8.6	12.3	9.4	(D)	(D)	(D)	-	3
29	Petroleum and coal products.....	58.9	4.1	46.0	8.8	-	-	-	-	-	1
	Maryland.....	124.3	28.0	19.1	39.0	38.1	12.2	4.4	2.4	0.9	3
26	Paper and allied products.....	(D)	(D)	0.5	(D)	1.6	(D)	(D)	-	(D)	7
28	Chemicals and allied products.....	24.6	4.8	2.6	9.9	7.2	1.6	(D)	(D)	-	4
33	Primary metal industries.....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(X)

See footnotes at end of table.

Table 4B. Pollution Abatement Operating Costs, by Kind of Cost and Cost Recovered, by Form of Pollutants, and by State and Major Industry Group for Establishments With 20 or More Employees: 1980—Continued

(Millions of dollars)

SIC code	State and major industry group	Operating cost					Cost recovered				Standard error of estimates (percent) ¹ GAC
		Total	By kind of cost				Total	By form of pollutants			
			De-precia-tion	Labor	Materials and supplies	Services, equipment leasing, and other costs		Air	Water	Solid waste	
	South Atlantic Division--Continued										
	District of Columbia.....	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(X)
	Virginia.....	104.4	22.6	24.6	25.1	32.1	21.0	11.7	2.9	6.7	2
20	Food and kindred products.....	8.0	2.1	2.0	1.5	2.5	2.9	(D)	(D)	-	12
22	Textile mill products.....	5.6	1.8	1.3	1.8	0.7	0.7	-	(D)	(D)	5
26	Paper and allied products.....	(D)	(D)	(D)	8.7	6.8	(D)	1.9	(D)	(D)	4
28	Chemicals and allied products.....	30.8	7.5	9.0	6.1	8.3	2.8	0.8	(D)	(D)	2
37	Transportation equipment.....	8.0	1.3	2.1	(D)	(D)	(D)	(D)	-	-	4
	West Virginia.....	167.1	30.6	39.7	49.2	47.5	11.3	2.1	7.8	1.5	2
28	Chemicals and allied products.....	70.2	12.7	14.3	29.4	13.6	8.4	0.5	(D)	(D)	2
33	Primary metal industries.....	80.8	(D)	22.4	16.3	(D)	(D)	(D)	(D)	(D)	1
	North Carolina.....	120.7	30.3	25.9	38.4	25.9	37.2	21.0	9.7	6.4	3
20	Food and kindred products.....	3.2	0.7	0.9	0.8	0.8	1.9	(D)	1.3	(D)	7
21	Tobacco products.....	(D)	(D)	2.2	1.4	0.3	-	-	-	-	1
22	Textile mill products.....	23.1	7.4	4.4	5.8	5.5	2.3	0.6	0.5	1.2	8
25	Furniture and fixtures.....	5.0	2.6	1.2	0.9	1.3	0.6	0.5	-	-	14
26	Paper and allied products.....	23.8	4.9	4.2	12.4	2.3	14.1	11.8	(D)	(D)	1
28	Chemicals and allied products.....	19.9	3.8	4.8	7.0	4.2	7.4	(D)	5.1	(D)	7
35	Machinery, except electrical.....	5.5	(D)	1.7	(D)	1.2	(D)	(D)	(D)	(D)	2
36	Electric, electronic equipment.....	4.6	1.3	1.2	0.7	1.4	0.4	0.3	0.1	-	8
	South Carolina.....	83.0	17.0	17.8	29.4	18.6	33.9	22.3	9.3	2.4	9
22	Textile mill products.....	10.4	3.4	2.1	2.2	2.7	(D)	-	(D)	(D)	8
28	Chemicals and allied products.....	30.9	4.4	5.8	11.1	9.6	4.9	3.4	(D)	(D)	3
32	Stone, clay, glass products.....	5.7	2.1	(D)	1.6	(D)	7.7	7.4	(D)	(D)	12
	Georgia.....	111.5	27.1	21.1	30.7	32.5	15.6	11.1	1.7	2.8	2
20	Food and kindred products.....	6.7	1.5	1.4	2.0	1.7	1.2	0.5	0.4	0.2	5
22	Textile mill products.....	5.9	1.0	1.5	1.3	2.0	0.8	0.1	-	0.7	7
26	Paper and allied products.....	47.9	14.2	6.3	12.6	14.9	9.3	8.4	(D)	(D)	3
28	Chemicals and allied products.....	24.7	4.9	5.1	8.4	6.3	1.5	1.2	0.3	-	7
32	Stone, clay, glass products.....	6.7	1.0	1.6	1.6	2.6	1.6	0.5	0.5	0.6	19
37	Transportation equipment.....	5.8	1.8	2.3	0.9	0.8	(D)	-	-	(D)	1
	Florida.....	133.9	30.2	20.4	45.9	37.1	47.4	22.5	23.3	1.6	3
20	Food and kindred products.....	14.8	3.7	3.0	4.0	4.0	5.2	0.6	(D)	(D)	4
26	Paper and allied products.....	46.9	10.3	5.6	19.6	11.5	(D)	3.6	(D)	-	1
28	Chemicals and allied products.....	48.2	12.3	6.3	17.1	12.4	15.8	8.5	6.9	0.3	3
36	Electric, electronic equipment.....	4.4	0.8	1.2	0.7	1.7	0.6	0.1	-	0.4	13
	East South Central Division:										
	Kentucky.....	105.7	16.0	30.3	33.1	26.2	36.9	12.9	20.5	3.6	4
20	Food and kindred products.....	4.0	0.4	0.5	0.6	2.4	0.4	0.3	0.1	-	16
28	Chemicals and allied products.....	35.2	4.2	9.3	14.3	7.4	4.6	(D)	(D)	(D)	4
29	Petroleum and coal products.....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(X)
33	Primary metal industries.....	17.2	2.1	4.4	4.6	5.9	(D)	-	(D)	-	2
35	Machinery, except electrical.....	6.1	1.5	1.1	1.6	1.8	(D)	(D)	-	0.2	4
36	Electric, electronic equipment.....	4.8	0.7	1.5	1.5	1.1	(D)	-	(D)	(D)	3
	Tennessee.....	158.3	31.8	34.6	50.5	41.2	30.4	10.7	14.6	5.1	3
20	Food and kindred products.....	5.6	0.8	1.6	1.5	1.7	2.1	0.8	1.2	0.1	6
26	Paper and allied products.....	8.5	2.4	1.8	2.7	1.5	3.7	2.7	0.8	0.2	6
28	Chemicals and allied products.....	105.4	19.9	19.6	37.1	28.8	17.3	1.0	12.3	4.1	4
33	Primary metal industries.....	11.5	3.4	3.3	2.5	2.3	(D)	(D)	-	-	7
	Alabama.....	170.5	42.6	32.1	41.8	53.9	19.3	10.1	2.9	6.3	3
26	Paper and allied products.....	(D)	10.2	(D)	(D)	10.7	(D)	0.8	(D)	(D)	1
28	Chemicals and allied products.....	48.9	12.5	10.1	19.9	6.3	5.4	3.3	2.0	0.1	1
33	Primary metal industries.....	63.8	14.1	10.3	10.0	29.4	4.7	(D)	(D)	-	2
	Mississippi.....	83.7	22.7	18.6	25.2	17.3	32.6	11.8	19.4	1.3	9
24	Lumber and wood products.....	11.1	2.9	2.2	2.5	3.4	5.3	-	(D)	(D)	15
26	Paper and allied products.....	11.9	3.3	(D)	3.1	(D)	(D)	(D)	(D)	-	1
28	Chemicals and allied products.....	17.3	6.7	1.7	4.6	4.3	(D)	(D)	(D)	-	3
29	Petroleum and coal products.....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(X)
	West South Central Division:										
	Arkansas.....	76.7	16.8	15.6	19.9	24.4	23.6	10.3	4.1	9.3	12
20	Food and kindred products.....	6.2	1.5	1.6	1.4	1.7	1.6	0.7	0.9	-	6
26	Paper and allied products.....	15.2	4.1	2.4	4.2	4.4	9.2	0.8	(D)	(D)	2
	Louisiana.....	410.2	75.7	80.9	162.3	91.1	104.7	66.2	33.4	5.1	1
20	Food and kindred products.....	4.0	0.8	0.7	0.8	1.6	0.2	(D)	(D)	-	12
26	Paper and allied products.....	22.6	7.0	3.1	7.1	5.2	9.9	7.6	(D)	(D)	4
28	Chemicals and allied products.....	221.5	42.4	50.9	67.7	60.5	47.0	18.4	26.6	2.1	2
29	Petroleum and coal products.....	(D)	20.7	(D)	82.5	(D)	43.4	37.7	5.7	-	1
33	Primary metal industries.....	15.3	3.1	3.2	2.5	6.5	1.7	1.7	-	-	10

See footnotes at end of table.

Table 4B. Pollution Abatement Operating Costs, by Kind of Cost and Cost Recovered, by Form of Pollutants, and by State and Major Industry Group for Establishments With 20 or More Employees: 1980—Continued

(Millions of dollars)

SIC code	State and major industry group	Operating cost					Cost recovered				Standard error of estimates (percent) ¹ GAC	
		Total	By kind of cost				Total	By form of pollutants				
			De-precia-tion	Labor	Materials and supplies	Services, equipment leasing, and other costs		Air	Water	Solid waste		
	West South Central Division--Continued											
29	Oklahoma.....	53.4	12.0	9.5	21.0	10.6	7.7	7.0	0.6	0.1		11
	Petroleum and coal products.....	15.6	1.7	4.0	8.4	1.6	3.1	2.7	0.4	-		1
	Texas.....	1,014.4	153.6	196.2	432.0	232.3	314.0	195.6	108.1	10.2		3
26	Paper and allied products.....	42.8	6.8	6.0	23.4	6.5	5.3	4.3	0.6	0.4		2
28	Chemicals and allied products.....	317.4	47.2	57.1	138.2	74.6	63.7	50.7	8.3	4.7		1
29	Petroleum and coal products.....	490.4	68.0	96.3	238.1	88.0	207.0	(D)	(D)	(D)		1
32	Stone, clay, glass products.....	19.2	4.2	3.7	5.4	5.9	6.7	5.1	(D)	(D)		17
33	Primary metal industries.....	87.4	19.5	18.9	18.4	30.6	24.1	22.6	(D)	(D)		3
35	Machinery, except electrical.....	6.9	0.6	1.5	1.1	3.6	1.0	(D)	(D)	0.1		10
36	Electric, electronic equipment.....	3.6	0.6	1.3	1.1	0.7	0.4	0.3	-	-		9
37	Transportation equipment.....	7.2	0.4	4.2	0.5	2.0	0.3	(D)	-	(D)		9
	Mountain Division:											
	Montana.....	22.3	4.4	5.3	9.4	3.3	2.8	2.1	0.4	0.3		3
33	Primary metal industries.....	10.5	1.6	2.1	4.3	2.5	0.6	0.6	-	-		1
	Idaho.....	35.0	8.7	9.4	8.8	8.4	2.3	0.8	1.1	0.4		4
20	Food and kindred products.....	4.6	1.0	1.8	1.0	1.3	1.1	-	(D)	(D)		13
28	Chemicals and allied products.....	16.3	(D)	5.0	5.1	(D)	(D)	(D)	(D)	-		1
33	Primary metal industries.....	6.4	1.7	0.8	1.3	2.7	-	-	-	-		1
	Wyoming.....	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)		(X)
	Colorado.....	38.9	13.0	9.4	10.8	5.7	3.5	2.8	0.2	0.5		6
20	Food and kindred products.....	6.1	1.5	2.9	0.9	0.8	0.6	0.2	(D)	(D)		5
33	Primary metal industries.....	15.0	(D)	(D)	3.7	(D)	0.4	0.4	-	-		11
38	Instruments, related products.....	4.7	1.0	1.4	0.9	1.4	(D)	(D)	-	-		1
	New Mexico.....	32.7	11.2	4.5	5.8	11.5	9.3	9.0	0.1	0.2		5
33	Primary metal industries.....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)		(X)
	Arizona.....	58.7	7.4	9.2	16.3	25.9	17.1	16.9	0.1	0.1		2
33	Primary metal industries.....	50.8	6.5	6.8	14.5	23.1	10.6	10.6	-	-		2
	Utah.....	37.5	10.0	8.1	12.3	7.0	11.5	5.5	5.8	0.2		4
33	Primary metal industries.....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)		(X)
	Nevada.....	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)		(X)
	Pacific Division:											
	Washington.....	164.0	43.2	31.7	45.6	43.5	62.3	32.9	17.5	12.0		1
20	Food and kindred products.....	3.2	0.5	1.0	0.5	1.0	1.7	0.2	0.2	1.2		12
26	Paper and allied products.....	58.8	22.0	6.4	19.8	10.3	21.1	(D)	15.2	(D)		1
29	Petroleum and coal products.....	17.1	3.2	2.7	4.3	6.9	(D)	(D)	(D)	-		4
33	Primary metal industries.....	43.4	7.6	10.8	9.9	15.2	15.8	15.1	(D)	(D)		1
37	Transportation equipment.....	4.4	0.2	1.3	0.3	2.5	(D)	-	(D)	(D)		14
	Oregon.....	83.1	20.8	21.3	30.5	10.3	30.7	6.4	17.8	6.6		6
24	Lumber and wood products.....	19.5	6.3	6.4	4.2	2.5	4.9	1.6	0.1	3.3		10
26	Paper and allied products.....	(D)	8.9	(D)	14.3	(D)	19.5	(D)	16.6	(D)		12
33	Primary metal industries.....	(D)	(D)	5.4	9.8	(D)	2.8	(D)	(D)	-		7
	California.....	550.9	68.1	117.5	170.5	195.1	95.7	60.9	20.2	14.5		4
20	Food and kindred products.....	29.0	4.3	5.8	5.6	13.1	7.0	1.6	2.3	3.1		3
24	Lumber and wood products.....	6.9	1.2	1.9	1.3	2.5	0.5	0.3	-	0.2		11
26	Paper and allied products.....	11.8	2.2	2.3	4.2	3.0	3.8	2.0	0.8	1.0		53
28	Chemicals and allied products.....	60.0	6.4	9.5	15.2	28.9	5.8	4.0	(D)	(D)		5
29	Petroleum and coal products.....	263.1	25.0	46.1	105.5	86.6	50.0	34.7	14.5	0.8		1
30	Rubber, misc. plastics products.....	5.2	0.4	1.4	0.6	2.7	(D)	(D)	-	-		12
32	Stone, clay, glass products.....	36.6	6.2	9.4	9.8	11.4	12.9	9.3	(D)	(D)		8
33	Primary metal industries.....	43.7	(D)	(D)	9.8	21.8	4.5	2.3	-	2.2		8
34	Fabricated metal products.....	17.2	3.1	3.4	6.2	5.4	3.3	2.8	0.1	0.4		13
35	Machinery, except electrical.....	6.1	1.0	1.6	0.8	2.5	2.5	1.4	0.9	0.3		9
36	Electric, electronic equipment.....	13.4	2.9	2.2	3.6	4.6	3.0	2.1	0.5	0.3		9
37	Transportation equipment.....	44.1	9.6	22.1	4.8	7.5	1.2	0.1	0.2	0.8		7
	Alaska.....	5.9	2.9	1.4	1.1	0.5	0.3	-	-	0.3		7
	Hawaii.....	11.0	1.3	2.2	1.3	6.2	8.2	6.7	1.5	0.1		14
20	Food and kindred products.....	7.7	0.6	1.8	1.2	4.1	0.1	-	0.1	0.1		18

Note: Totals may not agree precisely with detail because of independent rounding. No 2-digit industries are shown where GAC is less than \$5.0 million or the standard error is 20 or greater.

- Represents zero. (D) Withheld to avoid disclosing operations of individual companies. (S) Data suppressed because did not meet publication standards. This includes cells where GAC is less than \$5.0 million or the standard error is 20 or greater. See text. (X) Not applicable.

¹The standard error is calculated based on GAS (total gross annual cost) shown on table 3B.

²Major industry group 23, Apparel and Other Textile Products, was not included in the survey and therefore is excluded from the U.S. and State totals.

Table 4C. Pollution Abatement Operating Costs, by Kind of Cost and Cost Recovered, by Form of Pollutants, and by SMSA for Establishments With 20 or More Employees: 1980

(Millions of dollars)

Standard metropolitan statistical area	Operating cost					Cost recovered				Standard error of estimates (percent) ¹ GAC
	Total	By kind of cost				Total	By form of pollutants			
		Depreciation	Labor	Materials and supplies	Services, equipment leasing, and other costs		Air	Water	Solid waste	
Akron, Ohio.....	15.8	2.4	4.4	6.1	2.9	0.8	0.3	0.4	0.1	4
Albany-Schenectady-Troy, N.Y.....	3.4	12.5	4.5	8.6	8.8	4.8	2.9	1.1	0.8	4
Allentown-Bethlehem-Easton, Pa.-N.J.....	55.1	14.0	9.7	13.1	18.2	7.4	2.0	5.1	0.3	5
Anaheim-Santa Ana-Garden Grove, Calif.....	10.7	1.8	2.4	3.2	3.3	0.9	0.3	0.4	0.2	13
Anderson, Ind.....	7.3	1.4	2.7	2.3	0.9	0.2	-	0.1	-	15
Ann Arbor, Mich.....	8.3	1.2	3.2	1.3	2.7	2.0	-	1.7	0.3	5
Appleton-Oshkosh, Wis.....	13.2	2.2	2.2	5.3	3.4	(D)	(D)	(D)	(D)	11
Atlanta, Ga.....	13.5	2.9	3.8	2.2	4.6	1.9	0.4	0.5	1.0	6
Augusta, Ga.-S.C.....	14.0	1.9	3.5	6.3	2.3	(D)	(D)	(D)	(D)	9
Bakersfield, Calif.....	7.1	1.5	2.2	1.5	1.8	0.1	0.1	-	-	13
Baltimore, Md.....	96.6	17.9	13.5	35.0	30.4	9.6	2.4	1.8	5.4	2
Baton Rouge, La.....	155.3	23.3	19.5	85.8	26.6	36.4	27.0	6.0	3.4	1
Beaumont-Port Arthur-Orange, Tex.....	212.1	21.7	54.0	107.5	29.0	46.1	34.7	11.2	0.2	1
Billings, Mont.....	5.0	0.7	1.3	2.7	0.3	(D)	(D)	(D)	(D)	1
Binghamton, N.Y.-Pa.....	7.6	1.5	1.7	1.2	3.2	(D)	(D)	(D)	(D)	1
Birmingham, Ala.....	40.8	10.7	5.1	6.6	17.9	0.5	0.4	-	-	4
Boston, Mass.....	24.4	3.7	6.7	3.9	9.9	4.8	1.2	2.1	1.5	5
Bridgeport, Conn.....	8.7	0.9	1.6	2.6	3.4	1.1	0.5	0.1	0.5	7
Buffalo, N.Y.....	84.8	16.9	16.2	28.2	23.2	9.7	5.6	2.5	1.6	3
Canton, Ohio.....	17.2	4.0	7.3	3.5	2.2	(D)	(D)	(D)	(D)	2
Cedar Rapids, Iowa.....	6.2	0.9	1.0	1.2	3.0	2.8	2.5	0.3	-	8
Charleston-North Charleston, S.C.....	6.4	2.6	1.3	1.5	1.1	14.5	14.5	-	-	18
Charleston W. Va.....	40.6	7.3	8.7	18.1	6.3	7.6	0.3	7.4	-	2
Charlotte-Gastonia, N.C.....	8.5	1.5	1.8	2.7	2.5	0.1	0.1	-	-	18
Chattanooga, Tenn.-Ga.....	12.3	3.1	2.7	2.8	3.6	1.7	0.2	0.7	0.7	9
Chicago, Ill.....	251.5	46.6	48.5	71.7	84.4	22.6	10.2	4.6	7.8	7
Cincinnati, Ohio-Ky.-Ind.....	29.5	5.3	6.6	8.0	9.7	9.3	3.2	5.9	0.2	6
Cleveland, Ohio.....	98.4	17.7	19.1	23.4	38.3	2.3	0.5	1.3	0.5	1
Columbia, S.C.....	14.0	1.4	1.7	4.1	6.7	1.5	0.1	0.1	1.2	4
Columbus, Ohio.....	20.4	4.0	4.1	6.0	6.0	5.8	0.4	4.4	1.0	7
Corpus Christi, Tex.....	41.4	7.9	5.5	11.2	16.8	12.7	12.7	-	-	1
Dallas-Fort Worth, Tex.....	41.6	6.2	9.3	5.9	20.0	7.7	3.7	2.1	1.9	11
Davenport-Rock Island-Moline, Iowa-Ill.....	13.3	2.6	3.3	4.2	3.1	0.7	0.5	0.2	-	5
Dayton, Ohio.....	20.3	3.7	6.2	2.8	7.6	5.2	2.4	0.2	2.6	4
Denver-Boulder, Colo.....	20.2	3.3	5.9	7.4	4.3	3.5	2.8	0.2	0.5	9
Des Moines, Iowa.....	4.1	0.5	1.2	1.3	1.1	0.9	0.6	0.1	0.1	13
Detroit, Mich.....	174.1	27.1	53.2	37.6	56.0	10.7	3.1	4.2	3.3	1
Dubuque, Iowa.....	5.3	1.6	1.6	2.0	0.1	0.8	-	0.4	0.4	2
El Paso, Tex.....	20.4	3.7	3.1	3.4	10.2	(D)	(D)	(D)	(D)	6
Erie, Pa.....	5.1	1.3	0.7	0.4	2.6	(D)	(D)	(D)	(D)	6
Eugene-Springfield, Oreg.....	5.0	1.9	1.2	1.6	0.3	(D)	(D)	(D)	(D)	7
Evansville, Ind.-Ky.....	22.1	5.4	4.6	3.4	8.6	(D)	(D)	(D)	(D)	2
Fargo-Moorhead, N. Dak.-Minn.....	7.2	6.6	0.2	0.4	-	0.1	-	0.1	-	1
Flint, Minn.....	25.4	7.3	6.5	7.5	3.9	(D)	(D)	(D)	(D)	1
Florence, Ala.....	13.3	2.7	3.0	2.4	5.1	0.6	0.5	0.2	-	1
Fort Wayne, Ind.....	7.2	1.4	1.5	1.5	2.8	0.3	0.1	0.1	0.1	10
Gadsden, Ala.....	10.8	1.0	1.9	0.3	7.6	0.1	-	-	0.1	1
Galveston-Texas City, Tex.....	67.5	7.0	6.1	28.8	25.6	(D)	(D)	(D)	(D)	1
Gary-Hammond-East Chicago, Ind.....	246.1	61.3	47.2	55.1	82.6	25.0	18.1	6.7	0.2	1
Grand Rapids, Mich.....	13.1	2.4	2.7	3.5	4.4	1.0	0.4	0.5	0.1	14
Green Bay, Wis.....	15.7	3.3	6.3	7.7	1.9	4.0	-	3.9	0.1	10
Greensboro-Winston-Salem-High Point, N.C.....	17.6	7.1	4.3	3.6	2.5	2.0	0.6	1.2	0.2	9
Greenville-Spartanburg, S.C.....	10.1	2.3	2.3	2.5	2.8	7.3	3.3	3.7	0.3	8
Hamilton-Middletown, Ohio.....	30.4	8.3	5.7	5.6	10.8	(D)	(D)	(D)	(D)	1
Harrisburg, Pa.....	7.0	1.9	1.4	2.8	0.9	0.8	0.5	0.1	0.2	5
Hartford, Conn.....	8.4	1.6	2.0	2.2	2.6	1.9	1.2	0.3	0.4	15
Honolulu, Hawaii.....	5.1	0.7	0.9	0.7	2.8	8.2	6.7	1.5	-	12
Houston, Tex.....	491.3	80.4	84.2	226.4	104.6	168.0	74.5	88.4	5.0	1
Huntington-Ashland, W. Va.-Ky.-Ohio.....	29.2	4.4	9.3	9.3	6.2	22.5	4.0	18.0	0.5	5
Indianapolis, Ind.....	21.0	3.6	6.1	4.0	5.3	6.8	5.0	1.2	0.5	6
Jacksonville, Fla.....	50.1	8.9	6.3	21.6	13.4	22.2	3.3	18.4	0.5	2
Jersey City, N.J.....	18.7	2.5	2.0	8.7	5.6	(D)	(D)	(D)	(D)	10
Johnstown, Pa.....	11.8	2.8	1.9	6.8	0.3	0.1	0.1	-	0.1	2
Kalamazoo-Portage, Mich.....	11.5	1.1	3.4	2.1	5.0	(D)	(D)	(D)	(D)	6
Kansas City, Mo.-Kans.....	50.6	10.3	1.7	7.6	17.2	7.1	5.2	0.9	1.0	3

See footnotes at end of table.

Table 4C. Pollution Abatement Operating Costs, by Kind of Cost and Cost Recovered, by Form of Pollutants, and by SMSA for Establishments With 20 or More Employees: 1980—Continued

(Millions of dollars)

Standard metropolitan statistical area	Operating cost					Cost recovered				Standard error of estimates (percent) ¹ GAC
	Total	By kind of cost				Total	By form of pollutants			
		Depreciation	Labor	Materials and supplies	Services, equipment leasing, and other costs		Air	Water	Solid waste	
Killeen-Temple, Tex.	25.1	3.6	4.2	6.1	11.2	2.0	1.3	0.2	0.5	1
Knoxville, Tenn.	10.8	1.7	2.6	4.9	1.6	(D)	(D)	(D)	(D)	6
Lafayette-West Lafayette, Ind.	13.1	1.7	3.4	1.3	6.6	0.2	-	0.1	0.1	3
Lake Charles, La.	65.9	15.0	18.2	11.1	21.6	23.8	5.2	18.6	-	1
Lakeland-Winter Haven, Fla.	21.1	6.5	2.1	6.5	5.9	10.0	6.6	3.4	-	5
Lancaster, Pa.	10.9	2.3	2.1	2.8	3.5	3.0	2.7	0.1	0.2	6
Lansing-East Lansing, Mich.	16.1	2.5	5.5	3.1	5.0	(D)	(D)	(D)	(D)	4
Las Vegas, Nev.	4.9	0.5	0.9	2.3	1.2	0.5	0.2	0.2	-	11
Lexington-Fayette, Ky.	6.4	1.8	1.1	1.1	2.3	0.7	0.5	-	0.3	17
Lima, Ohio.	13.0	1.0	5.5	2.5	3.9	(D)	(D)	(D)	(D)	8
Little Rock-North Little Rock, Ark.	8.2	2.0	2.1	1.5	2.6	(D)	(D)	(D)	(D)	15
Long Branch-Asbury Park, N.J.	7.0	0.6	0.7	4.2	1.5	0.2	-	-	0.1	4
Lorain-Elyria, Ohio.	31.6	3.1	10.4	6.1	11.9	0.5	0.1	0.4	0.1	2
Los Angeles-Long Beach, Calif.	233.7	31.1	52.2	68.5	57.1	48.5	29.8	13.6	5.1	9
Louisville, Ky.-Ind.	34.6	4.3	9.1	9.3	12.0	6.6	4.7	1.1	0.8	4
Macon, Ga.	5.7	1.4	0.8	1.4	2.1	0.9	0.8	-	0.1	4
Memphis, Tenn.-Ark.-Miss.	31.8	4.2	5.7	16.7	5.1	12.9	1.9	9.4	1.5	3
Milwaukee, Wis.	27.2	6.4	5.4	4.9	10.5	2.6	1.7	0.5	0.4	11
Minneapolis-St. Paul, Minn.-Wis.	37.3	6.6	6.7	5.4	18.6	5.4	3.4	1.3	0.6	3
Mobile, Ala.	27.2	8.6	5.5	7.3	5.9	4.0	2.1	1.8	0.1	2
Monroe, La.	7.9	2.9	1.2	1.2	2.6	3.3	2.2	1.0	0.1	1
Muskegon-Muskegon Heights, Mich.	4.9	0.9	0.8	0.6	2.6	0.5	0.5	-	-	9
Nashville-Davidson, Tenn.	12.1	2.9	2.9	2.4	3.9	0.6	0.3	0.2	0.1	3
Nassau-Suffolk, N.Y.	11.2	0.4	4.8	2.9	5.5	0.2	0.1	-	0.1	9
New Brunswick-Perth Amboy-Sayreville, N.J.	76.7	8.7	13.3	24.8	29.8	39.5	33.0	6.3	0.1	19
New London-Norwich, Conn.-R.I.	14.6	0.6	1.9	7.0	5.2	(D)	(D)	(D)	(D)	6
New Orleans, La.	27.9	5.3	5.2	5.7	12.7	4.5	3.6	0.6	0.2	3
New York, N.Y.-N.J.	56.4	5.3	9.1	19.4	22.3	2.4	0.9	0.4	1.1	6
Newark, N.J.	121.9	8.3	19.7	31.7	61.3	33.6	27.2	4.9	1.5	1
Newport News-Hampton, Va.	13.6	2.1	2.9	1.1	7.4	(D)	(D)	(D)	(D)	1
Oklahoma City, Okla.	5.1	1.2	1.5	1.1	1.3	0.7	0.6	-	0.1	7
Omaha, Nebr.-Iowa.	6.7	1.1	2.4	1.5	1.7	2.5	1.0	0.3	1.1	10
Parkersburg-Marietta, W. Va.-Ohio.	49.9	12.4	9.4	21.6	6.4	21.8	6.9	14.5	0.4	7
Pensacola, Fla.	14.3	5.3	2.7	1.9	4.4	(D)	(D)	(D)	(D)	1
Peoria, Ill.	32.7	7.5	5.6	12.1	7.4	(D)	(D)	(D)	(D)	2
Petersburg-Colonial Heights-Hopewell, Va.	12.1	3.2	3.6	0.9	4.5	(D)	(D)	(D)	(D)	1
Philadelphia, Pa.-N.J.	189.8	23.6	36.4	47.8	81.9	52.8	26.4	22.6	3.8	2
Phoenix, Ariz.	6.2	0.7	1.7	1.3	2.5	5.9	5.9	-	-	4
Pittsburgh, Pa.	206.7	45.6	37.5	68.9	54.4	11.5	6.5	4.9	0.1	1
Portland, Maine.	4.6	1.1	0.8	2.1	0.6	2.2	2.2	-	-	17
Portland, Oreg.-Wash.	31.1	8.7	5.5	10.9	5.4	14.0	4.7	6.8	2.5	6
Poughkeepsie, N.Y.	16.7	1.5	3.6	6.3	5.3	(D)	(D)	(D)	(D)	1
Providence-Warwick-Pawtucket, R.I.-Mass.	10.8	1.4	2.1	3.3	4.0	2.8	2.4	0.1	0.3	7
Provo-Orem, Utah.	6.1	1.1	1.6	3.2	0.2	-	-	-	-	2
Pueblo, Colo.	14.9	8.9	2.7	2.9	0.3	-	-	-	-	8
Raleigh-Durham, N.C.	5.7	0.8	1.3	1.8	1.5	1.0	0.1	0.4	0.5	12
Reading, Pa.	11.0	2.4	2.0	2.1	4.4	2.3	2.2	-	0.1	18
Richmond, Va.	14.2	3.0	3.0	3.3	4.9	4.8	4.2	0.2	0.5	9
Riverside-San Bernardino-Ontario, Calif.	47.5	4.6	8.8	14.1	20.1	12.2	8.5	0.1	3.6	3
Rochester, Minn.	0.5	-	0.2	-	0.2	-	-	-	-	1
Rochester, N.Y.	41.5	6.7	12.6	9.9	12.2	(D)	(D)	(D)	(D)	3
Rockford, Ill.	5.9	0.7	1.3	1.6	2.0	1.0	0.4	0.4	0.2	9
Sacramento, Calif.	5.5	0.8	1.6	1.0	2.1	0.1	0.1	-	-	11
Saginaw, Mich.	22.2	7.7	2.2	8.2	4.1	1.4	0.7	0.6	-	2
St. Louis, Mo.-Ill.	87.3	14.8	23.1	19.0	30.3	15.2	11.0	2.0	2.1	2
Salt Lake City-Ogden, Utah.	28.7	8.0	6.0	8.8	6.0	(D)	(D)	(D)	(D)	3
San Francisco-Oakland, Calif.	176.4	14.8	30.6	49.2	82.2	15.8	11.2	2.8	1.8	1
San Jose, Calif.	17.6	2.7	5.5	4.0	5.4	2.2	1.2	0.4	0.5	5
Savannah, Ga.	29.0	9.0	3.6	5.2	11.2	0.9	0.5	0.3	-	6

See footnotes at end of table.

Table 4C. Pollution Abatement Operating Costs, by Kind of Cost and Cost Recovered, by Form of Pollutants, and by SMSA for Establishments With 20 or More Employees: 1980—Continued

(Millions of dollars)

Standard metropolitan statistical area	Operating cost					Cost recovered				Standard error of estimates (percent) ¹ GAC
	Total	By kind of cost				Total	By form of pollutants			
		Depreciation	Labor	Materials and supplies	Services, equipment leasing, and other costs		Air	Water	Solid waste	
Seattle-Everett, Wash.....	22.7	5.1	5.6	3.4	8.5	7.6	0.3	0.2	7.1	6
Spokane, Wash.....	7.3	1.5	2.3	0.9	2.5	(B)	(D)	(D)	(D)	10
Springfield-Chicopee-Holyoke, Mass.-Conn.....	10.4	1.5	1.5	3.4	3.9	8.1	2.6	0.1	5.4	18
Steubenville-Weirton, Ohio, W. Va.....	67.8	8.2	18.5	12.6	28.5	1.1	0.3	0.5	0.3	1
Stockton, Calif.....	5.2	1.1	1.1	1.2	1.8	1.8	0.9	0.7	0.3	10
Syracuse, N.Y.....	11.9	1.5	2.7	3.0	4.8	2.5	2.4	0.1	-	4
Tacoma, Wash.....	22.1	3.1	3.6	2.3	13.1	2.2	1.9	0.2	0.1	2
Tampa-St. Petersburg, Fla.....	20.9	3.4	3.4	8.1	5.8	8.2	7.6	0.3	0.4	11
Terre Haute, Ind.....	15.8	3.2	2.9	4.8	5.0	1.9	0.1	1.7	0.1	16
Texarkana, Tex.-Texarkana, Ark.....	7.5	1.7	1.5	3.2	1.1	1.4	-	-	1.4	7
Toledo, Ohio-Mich.....	34.4	7.5	9.4	8.9	8.6	4.3	2.7	0.4	1.3	6
Trenton, N.J.....	6.3	0.7	1.1	2.3	2.4	0.2	0.1	0.1	-	8
Tucson, Ariz.....	7.1	2.6	0.8	0.7	2.9	(D)	(D)	(D)	(D)	1
Tulsa, Okla.....	19.7	4.7	4.3	8.9	1.9	2.5	2.1	0.4	-	15
Tuscaloosa, Ala.....	5.5	0.2	1.5	2.9	0.9	0.4	0.4	-	0.1	2
Vallejo-Fairfield-Napa, Calif.....	29.7	2.4	2.6	20.3	4.4	2.8	1.7	1.1	-	1
Vineland-Millville-Bridgeton, N.J.....	5.2	0.8	1.3	2.1	1.0	(D)	(D)	(D)	(D)	12
Waterloo-Cedar Falls, Iowa.....	6.4	0.8	1.9	1.6	1.9	0.2	0.1	-	0.1	1
Wheeling, W. Va.-Ohio.....	9.6	2.1	1.8	3.6	2.1	0.8	0.8	-	-	17
Wilmington, Del.-N.J.-Md.....	132.4	16.6	62.5	30.9	22.4	3.7	1.8	1.6	0.3	1
Wilmington, N.C.....	13.1	2.6	3.5	5.6	1.4	6.0	1.4	3.7	1.0	4
York, Pa.....	12.2	2.7	2.8	3.2	3.6	2.1	1.8	-	0.3	7
Youngstown-Warren, Ohio.....	34.7	5.4	11.9	7.0	10.4	0.7	0.4	0.2	0.1	2

Note: Totals may not agree precisely with detail because of independent rounding. Major industry group 23, Apparel and Other Textile Products, was not included in the survey and therefore is excluded from the SMSA totals. No major industry groups are shown. No SMSA totals are shown where GAC is less than \$5.0 million or the standard error is 20 or greater.

- Represents zero. (D) Withheld to avoid disclosing operations of individual companies.

¹The standard error is calculated based on GAC (total gross annual cost) shown on table 3C.

Table 5A. Quantities of Pollutants Removed and Related Statistics, by Industry for Establishments With 20 or More Employees: 1980

(Values in millions of dollars; quantities in thousands of short tons)

SIC code	Industry	Air					Water					Solid waste	
		Total operating cost	Quantity of pollutants removed				Total operating cost	Quantity of pollutants removed				Total operating cost including payments for solid waste collection and disposal ¹	Quantity of solid waste removed
			Particulates	Sulfur oxides	Nitrogen oxides, hydrocarbons, and carbon monoxides	Heavy metals, radioactive and toxic substances, and other		Suspended solids	Biochemical oxygen demand	Chemical oxygen demand	Oil and grease, toxic substances, and other		
	All industries ²	3,297.8	39,503.0	8,796.0	11,737.4	1,270.0	2,680.0	19,240.6	4,458.7	4,698.5	7,088.9	1,676.1	14,295.7
20	Food and kindred products.....	81.6	1,601.0	37.0	173.1	12.9	148.9	3,067.7	947.3	1,015.1	360.4	123.6	14,410.1
201	Meat products.....	4.2	14.6	3.1	0.5	0.3	31.6	264.9	185.7	195.2	145.4	18.9	2,494.8
2011	Meatpacking plants.....	2.7	10.9	2.9	(D)	(D)	14.9	147.1	129.9	149.6	96.5	10.1	1,684.7
2013	Sausages and other prepared meats.....	0.7	0.1	-	(D)	(D)	2.3	22.9	3.6	2.3	4.4	4.0	597.6
2016	Poultry dressing plants.....	0.7	2.6	0.1	-	0.1	13.3	90.2	47.8	39.0	42.2	4.0	132.9
202	Dairy products.....	1.3	12.3	-	1.3	-	17.4	43.7	59.2	18.3	80.6	13.5	842.5
2023	Condensed and evaporated milk.....	0.8	7.9	-	-	-	1.3	5.3	6.3	1.5	0.6	1.3	181.8
2026	Fluid milk.....	0.1	2.6	-	1.3	-	3.8	24.3	36.4	10.9	70.8	7.6	478.1
203	Preserved fruits and vegetables.....	5.6	34.4	0.7	0.6	0.1	27.0	294.3	206.6	292.0	64.9	26.4	3,364.9
2032	Canned specialties.....	1.2	4.0	(D)	-	-	2.9	16.1	8.3	0.9	0.4	2.3	137.7
2033	Canned fruits and vegetables.....	1.0	0.8	0.4	-	-	6.9	87.0	60.0	70.2	(D)	9.6	1,664.2
2034	Dehydrated fruits, vegetables, soups.....	0.3	9.4	-	-	-	2.3	86.2	56.4	108.9	(D)	1.4	276.5
2035	Pickles, sauces, salad dressings.....	0.3	(D)	-	-	-	4.2	2.8	4.6	4.4	3.1	2.1	63.6
2037	Frozen fruits and vegetables.....	1.5	18.2	(D)	0.5	0.1	8.6	95.3	69.5	101.5	38.3	3.9	1,071.9
2038	Frozen specialties.....	1.3	(D)	-	-	-	2.2	6.9	7.7	6.1	4.5	7.2	151.1
204	Grain mill products.....	27.0	477.5	16.7	-	4.3	13.6	72.4	67.3	83.9	10.1	11.1	904.9
2041	Flour, other grain mill products.....	5.5	163.1	(D)	-	0.9	0.3	2.5	0.3	-	0.6	1.3	45.6
2043	Cereal breakfast foods.....	2.4	30.4	-	-	-	(D)	0.4	12.6	1.8	(D)	2.2	123.7
2046	Wet corn milling.....	12.4	79.9	(D)	-	-	9.2	46.9	50.0	46.5	-	2.3	221.8
2047	Dog, cat, and other pet food.....	0.9	15.5	-	-	-	2.5	2.8	4.9	1.9	0.8	1.8	162.1
205	Bakery products.....	0.4	36.4	-	-	-	1.4	3.9	1.5	1.0	2.0	6.3	216.9
2051	Bread, cake, and related products.....	0.1	0.1	-	-	-	1.0	2.8	0.9	(D)	0.8	4.4	158.7
206	Sugar, confectionery products.....	9.8	212.7	2.3	0.2	2.2	17.8	1,992.3	134.0	142.0	2.3	12.4	3,704.9
2061	Raw cane sugar.....	1.6	83.9	0.2	-	-	3.9	927.8	2.6	(D)	-	(D)	2,180.4
2062	Cane sugar refining.....	0.7	(D)	(D)	-	-	2.7	9.1	6.0	2.2	-	(D)	114.3
2063	Beet sugar.....	5.8	106.8	1.8	-	-	8.7	985.1	118.3	132.2	-	2.0	1,271.1
2065	Confectionery products.....	1.2	8.8	0.1	0.2	-	1.7	6.6	-4.4	(D)	1.9	4.6	73.6
207	Fats and oils.....	14.0	436.7	7.4	169.0	0.7	11.2	20.7	32.4	47.2	21.3	8.2	277.4
2075	Soybean oil mills.....	8.8	415.7	(D)	167.8	(D)	3.6	5.3	7.4	10.2	6.3	2.5	97.3
2079	Shortening and cooking oils.....	0.7	3.0	(D)	-	-	5.4	13.0	22.8	35.8	11.5	3.8	118.0
208	Beverages.....	10.6	307.3	6.8	0.3	1.1	21.4	219.0	252.7	220.7	12.1	17.0	2,004.2
2082	Malt beverages.....	7.0	21.2	0.3	0.2	(D)	15.9	205.7	170.7	170.3	-	7.7	330.3
2086	Bottled and canned soft drinks.....	0.3	-	-	-	-	1.1	3.6	55.6	1.5	4.1	5.2	1,331.3
209	Misc. foods, kindred products.....	8.6	69.0	-	-	1.1	4.3	7.6	7.8	14.8	21.7	9.8	599.5
2095	Roasted coffee.....	6.3	7.0	-	0.9	-	3.0	1.3	0.1	0.3	-	2.2	54.7
2099	Food preparations, n.e.c.....	2.1	50.1	-	0.1	-	4.3	147.7	6.1	12.6	2.3	5.3	440.1
21	Tobacco products.....	6.8	34.7	1.3	0.5	0.4	1.0	7.6	1.8	4.8	-	3.6	157.5
2111	Cigarettes.....	3.9	27.7	1.3	0.5	-	0.8	4.1	-	-	-	2.4	117.8
22	Textile mill products.....	16.6	97.0	3.3	9.3	1.4	25.8	43.8	60.5	119.0	14.0	39.9	810.3
2211	Weaving mills, cotton.....	3.2	13.2	(D)	0.2	(D)	3.6	3.9	11.7	20.5	0.1	2.7	132.6
2221	Weaving mills, manmade fiber, silk.....	3.8	10.7	(D)	0.1	(D)	3.2	2.8	6.7	20.0	0.7	4.3	98.7
225	Knitting mills.....	1.8	9.6	0.1	0.5	0.2	4.1	6.8	2.8	8.9	0.2	4.1	80.9
2257	Circular knit fabric mills.....	0.9	8.1	0.1	-	0.2	1.2	3.2	0.7	1.7	-	1.1	38.6
226	Textile finishing, except wool.....	2.7	34.3	-	0.6	-	10.6	18.8	31.0	50.3	5.6	4.3	149.8
2262	Finishing plants, manmade fiber, silk.....	0.9	16.9	-	-	-	6.9	7.5	16.2	33.8	0.8	1.7	66.5
227	Floor covering mills.....	0.1	1.2	1.9	0.3	-	1.3	6.5	4.0	10.9	0.6	5.8	94.8
2272	Tufted carpets and rugs.....	0.1	0.6	(D)	(D)	-	1.0	1.4	2.1	5.6	0.5	5.2	83.4
229	Miscellaneous textile goods.....	3.3	14.3	-	7.7	0.1	1.1	3.4	1.3	2.6	6.4	5.9	164.1
24	Lumber and wood products.....	39.6	1,395.1	0.3	6.9	9.5	30.8	131.2	142.0	72.4	20.9	56.2	5,893.3
2411	Lagging crews, log contractors.....	(D)	(D)	-	-	(D)	(D)	(D)	(D)	-	(D)	6.7	644.3
242	Sawmills and planing mills.....	15.5	669.7	-	1.0	3.2	2.6	20.6	0.4	0.5	6.6	16.4	2,565.7
2421	Sawmills, planing mills, general.....	14.0	427.2	-	1.0	3.2	2.6	20.6	0.4	0.5	6.5	15.3	2,326.6
243	Millwork, plywood, structural members.....	11.0	509.8	0.2	2.3	1.4	3.4	8.5	6.5	21.7	4.1	16.6	1,524.4
2436	Softwood veneer and plywood.....	8.4	386.5	-	1.6	0.7	3.1	8.1	6.5	21.7	3.6	6.8	1,085.1
249	Miscellaneous wood products.....	11.6	198.3	-	3.5	-	15.3	72.7	58.1	50.2	5.5	11.2	682.9
2499	Wood products, n.e.c.....	5.5	157.2	-	2.3	-	13.2	69.8	55.6	46.0	(D)	5.7	361.1
25	Furniture and fixtures.....	12.2	302.3	1.6	4.2	1.6	1.7	5.8	0.3	0.3	1.2	14.8	668.5
251	Household furniture.....	9.5	277.8	1.5	2.0	1.5	0.6	5.2	0.1	0.1	1.0	9.2	458.4
2511	Wood household furniture.....	7.8	245.8	0.7	1.7	0.8	0.2	(D)	-	-	0.2	5.5	282.0
26	Paper and allied products.....	196.2	5,507.4	430.2	103.7	138.6	388.6	3,080.2	1,908.0	1,439.7	198.1	129.2	12,250.6
2611	Pulpmills.....	20.6	921.0	56.9	0.2	12.8	75.2	407.7	326.2	217.0	(D)	11.8	1,063.9
2621	Papermills, except building paper.....	80.6	1,935.7	238.7	12.1	54.9	189.6	1,687.7	834.9	540.3	73.0	55.7	5,362.0
2631	Paperboard mills.....	73.2	2,437.4	125.0	42.3	70.6	110.4	922.4	700.2	635.9	22.8	27.6	3,595.5
264	Misc. converted paper products.....	8.5	19.7	6.2	40.3	0.2	5.6	13.0	12.3	4.3	54.9	21.7	1,671.2
2641	Paper coating and glazing.....	5.4	5.6	6.2	36.9	-	1.0	(D)	-	-	-	-	208.7
2643	Bags, except textile bags.....	0.4	0.4	-	2.0	-	0.6	0.6	0.2	0.7	1.3	3.8	123.8
2647	Sanitary paper products.....	1.9	8.0	-	(D)	0.2	3.0	8.9	8.8	3.1	49.3	5.5	1,212.0
265	Paperboard containers and boxes.....	8.7	4.5	3.2	8.4	-	4.3	28.8	23.3	26.7	1.8	10.4	357.6
2653	Corrugated and solid fiber boxes.....	0.8	1.9	1.5	-	-	3.0	18.0	15.5	26.7	0.4	5.2	163.7

See footnotes at end of table.

Table 5A. Quantities of Pollutants Removed and Related Statistics, by Industry for Establishments With 20 or More Employees: 1980—Continued

(Values in millions of dollars; quantities in thousands of short tons)

SIC code	Industry	Air					Water					Solid waste	
		Total operating cost	Quantity of pollutants removed				Total operating cost	Quantity of pollutants removed				Total operating cost including payments for solid waste collection and disposal ¹	Quantity of solid waste removed
			Particulates	Sulfur oxides	Nitrogen oxides, hydrocarbons, and carbon monoxides	Heavy metals, radioactive and toxic substances, and other		Suspended solids	Bio-chemical oxygen demand	Chemical oxygen demand	Oil and grease, toxic substances, and other		
27	Printing and publishing.....	13.3	4.1	-	49.4	3.9	4.1	12.8	0.4	1.0	75.6	27.6	1,177.4
2711	Newspapers.....	0.3	-	-	(D)	(D)	0.2	(D)	0.1	(D)	1.0	6.9	250.4
275	Commercial printing.....	12.4	2.8	-	44.2	3.9	2.6	3.8	0.1	0.2	1.7	10.4	435.3
2751	Commercial printing, letterpress.....	(D)	1.1	-	(D)	(D)	0.2	0.1	-	(D)	(D)	(D)	192.1
2752	Commercial printing, lithographic.....	(D)	1.5	-	8.0	-	0.4	3.4	-	0.1	(D)	(D)	171.8
2754	Commercial printing, gravure.....	7.0	0.2	-	(D)	(D)	0.6	0.1	0.1	1.0	1.0	1.1	64.8
28	Chemicals and allied products.....	539.9	6,618.1	1,060.1	2,262.7	452.9	876.8	5,124.0	803.2	1,191.2	2,862.0	368.8	43,430.9
281	Industrial inorganic chemicals.....	109.2	1,991.0	543.6	152.4	135.1	159.8	3,148.7	16.7	43.7	239.1	71.6	12,528.4
2812	Alkalies and chlorine.....	14.2	186.9	(D)	(D)	27.2	29.3	(D)	(D)	(D)	30.5	15.7	1,209.6
2816	Inorganic pigments.....	19.2	90.5	(D)	(D)	35.6	41.8	(D)	(D)	(D)	2.4	4.8	471.4
2819	Industrial inorganic chemicals, n.e.c.....	75.0	1,713.5	453.4	124.8	72.0	87.3	2,373.9	14.0	26.0	206.1	50.0	10,843.8
282	Plastics materials, synthetics.....	65.9	736.3	28.9	272.3	32.3	116.4	100.1	101.4	225.3	88.8	47.0	2,120.4
2821	Plastics materials and resins.....	43.0	344.7	20.6	224.1	21.1	69.2	65.7	42.6	105.2	59.7	32.2	1,040.3
2822	Synthetic rubber.....	7.0	(D)	(D)	21.1	(D)	(D)	8.0	4.9	23.3	0.9	(D)	117.4
2823	Cellulosic manmade fibers.....	2.7	(D)	(D)	-	(D)	(D)	15.0	21.0	42.5	(D)	(D)	199.7
2824	Organic fibers, noncellulosic.....	13.2	226.7	(D)	27.1	-	(D)	11.3	32.8	54.2	(D)	(D)	763.0
283	Drugs.....	20.5	90.9	19.7	18.8	4.4	35.5	24.0	101.7	82.8	29.1	20.2	739.0
2833	Medicinals and botanicals.....	10.9	(D)	13.6	6.5	1.1	21.7	13.7	87.1	54.2	25.6	7.0	182.5
2834	Pharmaceutical preparations.....	9.6	(D)	6.1	12.3	3.3	13.4	10.2	14.5	28.6	3.5	12.5	543.5
284	Soaps, cleaners, toilet goods.....	11.8	33.3	3.4	51.4	1.2	11.4	6.8	6.9	23.6	(D)	12.5	318.8
2841	Soap and other detergents.....	7.9	28.1	0.2	0.2	0.1	4.1	3.8	1.5	10.8	1.7	3.7	132.4
2843	Surface active agents.....	3.2	(D)	2.4	(D)	(D)	4.5	0.6	4.5	11.7	3.7	3.4	64.9
2844	Toilet preparations.....	0.5	(D)	-	(D)	(D)	1.8	1.1	0.2	0.5	22.8	3.6	78.5
2851	Paints and allied products.....	2.2	4.5	-	2.5	0.2	3.4	7.0	1.0	1.5	(D)	13.7	227.6
286	Industrial organic chemicals.....	225.3	579.3	177.8	1,180.5	168.1	422.3	336.8	523.0	732.6	2,204.7	142.7	3,763.9
2865	Cyclic crudes and intermediates.....	35.8	47.2	9.6	95.6	23.1	83.9	81.3	67.2	143.8	29.0	24.0	596.1
2869	Industrial organic chemicals, n.e.c.....	188.4	519.9	167.9	1,083.9	144.5	336.7	255.1	452.7	582.4	(D)	118.6	3,148.6
287	Agricultural chemicals.....	81.7	682.4	284.9	111.2	108.7	107.2	1,404.7	38.7	43.3	188.8	45.0	23,202.6
2873	Nitrogenous fertilizers.....	33.0	116.7	6.4	67.1	16.8	29.7	(D)	22.4	8.6	46.3	7.7	(D)
2874	Phosphatic fertilizers.....	29.9	500.1	267.8	13.5	67.5	21.3	458.6	(D)	-	79.8	17.9	21,849.7
2879	Agricultural chemicals, n.e.c.....	16.9	39.5	10.3	30.6	15.8	55.9	(D)	(D)	34.7	61.8	18.5	(D)
289	Miscellaneous chemical products.....	23.3	2,500.5	1.8	473.6	3.0	20.7	95.9	14.0	38.4	77.3	16.1	530.1
2892	Explosives.....	3.8	18.1	(D)	9.8	-	3.3	(D)	0.1	-	(D)	2.6	(D)
2899	Chemical preparations, n.e.c.....	9.8	2,438.8	(D)	0.3	0.2	13.9	76.4	13.4	34.0	74.7	7.6	303.8
29	Petroleum and coal products.....	910.1	753.3	4,358.7	7,663.7	18.1	399.2	698.5	453.5	635.6	1,394.7	101.0	4,872.5
2911	Petroleum refining.....	893.2	305.8	4,358.0	7,530.7	15.5	395.2	508.9	450.4	354.6	1,374.0	89.7	3,800.0
295	Paving and roofing materials.....	10.7	282.3	0.7	4.0	2.4	2.4	187.8	(D)	280.8	0.1	9.7	1,041.0
2952	Asphalt felts and coatings.....	8.9	54.5	0.7	4.0	0.2	2.4	187.3	(D)	280.8	0.1	9.1	1,001.5
299	Misc. petroleum, coal products.....	6.2	165.3	-	129.0	0.2	1.6	1.8	(D)	0.2	20.5	1.6	31.5
2999	Petroleum and coal products, n.e.c.....	(D)	164.1	-	(D)	-	0.2	1.2	-	-	-	(D)	10.1
30	Rubber, misc. plastics products.....	30.4	144.5	8.9	36.8	12.8	18.0	36.0	7.0	9.5	558.0	50.2	2,813.6
3011	Tires and inner tubes.....	11.5	77.7	6.6	6.0	(D)	3.6	4.2	(D)	(D)	2.2	8.8	405.2
3069	Fabricated rubber products, n.e.c.....	3.4	9.1	0.3	(D)	0.3	1.8	2.0	0.5	1.0	17.2	7.7	316.6
3079	Miscellaneous plastics products.....	14.0	54.6	1.7	24.4	9.7	12.1	22.5	4.6	7.2	537.9	30.5	1,937.6
31	Leather and leather products.....	1.1	5.9	0.3	0.3	-	7.8	30.3	17.6	28.8	6.5	10.7	340.5
32	Stone, clay, glass products.....	182.1	14,938.4	150.3	27.3	41.5	38.8	1,339.9	24.1	39.7	115.5	71.4	13,335.6
3211	Flat glass.....	4.5	14.6	0.2	(D)	-	(D)	3.9	0.8	1.0	0.7	(D)	240.7
322	Glass, pressed or blown.....	9.1	38.4	2.1	4.7	1.6	8.5	16.9	2.1	6.4	5.4	13.1	501.9
3221	Glass containers.....	2.5	16.4	2.1	1.4	0.8	1.5	1.3	-	-	2.4	7.1	232.2
3229	Pressed and blown glass, n.e.c.....	6.6	22.0	(D)	(D)	0.8	7.0	15.6	2.0	6.4	3.0	6.1	269.6
3241	Cement, hydraulic.....	79.3	11,509.6	52.7	5.5	7.4	2.9	188.2	2.8	4.0	28.0	9.5	4,567.5
326	Pottery and related products.....	2.1	17.8	-	0.3	3.3	2.1	24.0	0.4	0.1	-	3.1	335.9
327	Concrete, gypsum, plaster products.....	19.7	2,445.5	58.3	-	1.3	3.6	291.3	1.0	1.9	42.7	11.4	2,853.6
3273	Ready-mixed concrete.....	3.5	114.6	0.5	-	0.9	1.4	118.2	-	-	41.2	2.2	536.4
329	Misc. nonmetallic mineral products.....	59.2	732.4	6.0	16.7	27.8	16.7	799.4	16.8	26.1	37.2	26.5	4,093.2
3292	Asbestos products.....	10.9	71.3	0.1	0.6	5.0	2.1	4.0	(D)	(D)	0.2	7.5	143.0
3296	Mineral wool.....	28.0	202.7	5.4	2.6	0.6	8.9	9.9	16.3	24.9	0.6	11.5	520.2
33	Primary metal industries.....	998.2	7,263.2	2,643.7	1,208.4	445.5	435.9	4,728.7	14.3	53.7	757.9	215.2	30,607.8
331	Blast furnace, basic steel products.....	573.4	4,434.1	578.7	416.7	65.9	353.1	4,030.1	11.3	44.1	585.6	134.7	20,179.9
3312	Blast furnaces and steel mills.....	543.3	4,068.9	577.6	415.7	36.9	338.9	3,845.7	11.1	43.9	519.4	124.5	19,392.4
3313	Electrometallurgical products.....	26.9	352.9	-	(D)	28.9	4.0	125.0	(D)	(D)	(D)	1.4	456.0
3315	Steel wire and related products.....	0.9	0.3	0.1	(D)	0.1	3.4	11.2	(D)	(D)	(D)	2.3	117.3
3316	Cold finishing of steel shapes.....	2.0	10.8	-	(D)	-	5.1	45.0	(D)	(D)	(D)	4.2	186.8
332	Iron and steel foundries.....	113.5	1,576.8	260.3	710.6	195.1	13.9	477.2	0.5	2.7	85.8	42.3	7,674.7
3321	Gray iron foundries.....	92.6	1,273.4	(D)	709.9	(D)	11.6	404.8	(D)	(D)	(D)	31.0	6,172.1
3325	Steel foundries, n.e.c.....	11.6	228.1	0.1	0.3	41.5	1.2	(D)	0.1	-	(D)	7.4	1,130.2
333	Primary nonferrous metals.....	263.0	1,060.9	1,801.6	33.2	156.7	38.7	191.2	0.7	1.3	39.0	14.2	1,564.3
3331	Primary copper.....	98.3	420.1	1,099.3	-	42.0	7.8	1.0	-	-	0.5	3.6	718.6
3332	Primary lead.....	27.9	89.7	239.6	-	23.6	(D)	(D)	(D)	(D)	(D)	(D)	106.3
3333	Primary zinc.....	10.4	(D)	370.2	-	(D)	3.8	2.2	-	-	(D)	0.3	101.0
3334	Primary aluminum.....	90.6	380.7	(D)	33.2	77.3	(D)	123.9	0.3	(D)	9.5	(D)	544.1
3339	Primary nonferrous metals, n.e.c.....	35.8	(D)	(D)	-	(D)	10.8	(D)	(D)	(D)	9.6	3.5	94.3

See footnotes at end of table.

Table 5A. Quantities of Pollutants Removed and Related Statistics, by Industry for Establishments With 20 or More Employees: 1980—Continued

(Values in millions of dollars; quantities in thousands of short tons)

SIC code	Industry	Air					Water					Solid waste		
		Total operating cost	Quantity of pollutants removed				Total operating cost	Quantity of pollutants removed				Total operating cost including payments for solid waste collection and disposal ¹	Quantity of solid waste removed	
			Particulates	Sulfur oxygen	Nitrogen oxides, hydrocarbons, and carbon monoxides	Heavy metals, radio-active and toxic substances, and other		Suspended solids	Bio-chemical oxygen demand	Chemical oxygen demand	Oil and grease, toxic substances, and other			
	Primary metal industries—Continued													
3341	Secondary nonferrous metals.....	20.2	133.7	1.4	12.7	12.8	3.5	4.6	-	-	7.7	4.7	510.0	
335	Nonferrous rolling and drawing.....	23.1	29.1	1.8	35.2	13.0	22.6	21.0	1.6	5.3	35.4	14.8	440.1	
3351	Copper rolling and drawing.....	3.1	4.3	(D)	(D)	1.3	4.5	3.3	(D)	(D)	13.1	1.9	58.2	
3353	Aluminum sheet, plate, and foil.....	9.0	13.7	(D)	3.1	(D)	8.6	4.6	0.8	2.5	7.3	4.2	159.5	
3356	Nonferrous rolling and drawing, n.e.c.....	4.5	4.0	(D)	0.3	(D)	4.0	2.6	0.3	(D)	5.6	4.0	72.3	
3357	Nonferrous wire drawing, insulating....	5.2	1.5	0.4	31.0	0.1	1.5	0.9	-	-	7.2	2.7	88.6	
336	Nonferrous foundries.....	3.3	12.5	-	0.1	1.9	3.5	0.9	0.3	0.3	3.9	3.6	178.2	
3361	Aluminum foundries.....	2.1	6.8	-	0.1	0.1	2.1	0.7	0.3	(D)	3.3	2.6	103.9	
34	Fabricated metal products.....	49.0	127.3	7.0	55.3	13.5	61.2	87.8	5.8	8.3	98.0	81.8	1,864.4	
341	Metal cans, shipping containers.....	11.5	1.7	-	24.1	0.5	2.7	2.4	1.3	4.4	8.7	7.8	119.2	
3411	Metal cans.....	8.6	0.7	-	22.6	0.5	2.0	2.2	1.2	3.9	6.8	6.1	106.2	
342	Cutlery, handtools and hardware.....	7.2	9.4	3.0	0.6	0.9	10.1	7.3	0.1	0.3	5.5	9.5	132.8	
3429	Hardware, n.e.c.....	5.4	7.3	(D)	0.4	0.2	7.9	5.5	(D)	0.2	3.2	7.1	95.9	
344	Fabricated structural metal products.....	4.0	12.6	-	8.1	0.6	4.8	24.8	0.3	0.1	27.5	11.0	302.2	
3443	Fabricated platework, boiler shop.....	0.6	2.0	-	-	-	1.3	2.0	-	-	7.4	2.6	70.2	
3444	Sheet metalwork.....	1.6	3.4	-	7.7	0.4	1.1	1.6	0.1	-	(D)	2.2	74.7	
345	Screw machine products, bolts, etc.....	0.8	4.8	0.7	0.3	4.9	5.4	4.9	0.1	0.8	4.8	3.4	91.1	
3452	Bolts, nuts, rivots, and washers.....	0.7	4.8	0.7	0.3	4.9	5.3	4.9	0.1	0.8	4.1	3.0	76.7	
346	Metal forgings and stampings.....	8.8	14.2	2.4	6.3	1.3	10.9	13.7	0.1	0.5	31.6	14.1	424.6	
3462	Iron and steel forgings.....	2.4	(D)	0.3	2.1	(D)	1.3	(D)	(D)	(D)	2.9	1.5	55.9	
3463	Nonferrous forgings.....	1.8	(D)	-	-	-	1.5	0.6	-	(D)	0.3	(D)	19.0	
3465	Automotive stampings.....	2.4	6.2	2.1	1.8	(D)	5.9	(D)	(D)	-	24.5	6.9	278.5	
3469	Metal stampings, n.e.c.....	1.3	2.7	-	0.8	-	2.2	6.4	-	(D)	2.6	3.6	53.4	
348	Ordnance and accessories, n.e.c.....	3.5	3.1	0.4	0.6	0.1	5.0	8.3	0.2	1.1	1.1	6.5	80.3	
3483	Ammunition, except small arms, n.e.c.....	1.1	0.5	-	0.4	-	1.6	1.8	0.1	0.6	0.2	2.0	17.8	
349	Misc. fabricated metal products.....	5.2	29.2	0.4	5.7	2.6	4.3	11.6	3.6	0.8	10.7	10.3	449.3	
3494	Valves and pipe fittings.....	3.7	21.4	0.3	(D)	0.6	1.7	(D)	2.9	-	3.5	4.8	282.8	
35	Machinery, except electrical.....	48.0	225.1	42.8	16.1	6.9	50.6	118.9	22.0	23.9	240.9	85.2	3,000.2	
351	Engines and turbines.....	11.4	35.3	14.3	1.3	0.1	10.6	28.5	0.9	1.3	15.7	8.5	395.5	
3511	Turbines, turbine generator sets.....	4.9	11.1	(D)	(D)	(D)	1.4	0.6	(D)	(D)	7.9	1.5	59.2	
3519	Internal combustion engines, n.e.c.....	6.5	24.2	(D)	(D)	(D)	9.3	27.9	(D)	(D)	7.8	7.0	336.3	
352	Farm and garden machinery.....	6.9	50.0	3.5	2.7	1.7	4.0	15.7	0.2	0.2	6.3	7.5	479.3	
3523	Farm machinery and equipment.....	6.8	49.8	(D)	(D)	(D)	3.6	15.0	0.2	0.2	6.3	6.6	449.3	
353	Construction, related machinery.....	10.5	40.1	18.6	0.3	0.2	9.7	38.3	16.9	20.5	132.7	16.5	670.0	
3531	Construction machinery.....	8.1	31.3	(D)	0.2	-	8.0	32.0	(D)	(D)	20.6	11.2	514.7	
3533	Oilfield machinery.....	1.3	6.3	(D)	(D)	(D)	0.9	4.3	(D)	-	(D)	2.4	63.8	
354	Metalworking machinery.....	1.6	19.8	0.5	-	1.6	1.4	4.8	0.1	0.2	10.1	6.7	216.0	
355	Special industry machinery.....	4.2	3.4	0.2	0.7	0.6	3.4	0.8	0.1	-	5.6	6.2	134.2	
3559	Special industry machinery, n.e.c.....	3.0	1.4	-	(D)	0.3	2.3	-	-	-	2.9	3.1	67.6	
356	General industrial machinery.....	5.1	47.4	1.6	0.4	1.2	5.3	12.6	3.3	0.5	24.6	11.1	572.9	
3561	Pumps and pumping equipment.....	0.7	15.3	-	0.1	-	1.0	(D)	(D)	(D)	12.9	2.7	98.6	
3562	Ball and roller bearings.....	1.1	2.0	1.5	(D)	0.1	2.5	6.2	0.1	0.3	7.0	2.6	85.5	
357	Office and computing machines.....	3.1	0.6	0.1	6.9	0.1	8.5	2.5	-	-	6.7	14.3	217.5	
3573	Electronic computing equipment.....	1.1	(D)	(D)	0.9	-	6.0	2.3	-	-	4.2	11.1	163.4	
3579	Office machines, typewriters, etc.....	(D)	0.3	(D)	(D)	-	2.2	(D)	-	-	(D)	(D)	26.5	
358	Refrigeration and service machines.....	3.6	9.2	4.0	3.5	1.0	5.2	7.2	0.6	1.1	31.1	9.3	186.2	
3585	Refrigeration, heating equipment.....	3.2	9.0	4.0	3.5	0.9	4.8	3.6	0.6	1.1	(D)	7.8	158.4	
359	Misc. machinery, except electric.....	1.6	19.2	-	0.3	0.4	2.5	8.5	-	-	8.3	5.1	128.6	
3592	Carburetors, pistons, rings, etc.....	1.4	8.4	(D)	(D)	0.4	2.3	8.4	-	-	5.7	2.2	35.8	
36	Electric, electronic equipment.....	45.2	180.8	11.3	47.7	17.2	59.3	78.6	2.2	3.0	141.5	71.8	2,148.4	
361	Electric distributing equipment.....	1.2	9.2	0.2	1.1	0.1	3.8	1.2	-	0.2	5.1	4.0	475.1	
3613	Switchgear, switchboard apparatus.....	0.8	0.4	-	0.3	-	1.7	1.0	-	0.1	0.4	2.0	(D)	
362	Electrical industrial apparatus.....	8.8	85.1	0.4	9.5	3.0	4.3	10.6	0.2	0.1	2.7	11.3	289.4	
3621	Motors and generators.....	0.6	7.3	-	0.2	0.5	1.4	9.5	0.2	-	1.7	3.6	75.2	
3624	Carbon and graphite products.....	7.2	67.3	0.1	9.1	1.8	0.2	0.3	-	-	0.2	1.9	135.7	
363	Household appliances.....	4.9	25.2	2.7	14.1	0.4	6.6	15.7	0.1	1.6	5.5	9.8	233.7	
364	Electric lighting, wiring equipment.....	4.5	17.5	0.1	1.3	0.8	4.1	4.6	0.1	0.1	63.8	7.3	358.2	
3647	Vehicular lighting equipment.....	(D)	(D)	-	-	-	(D)	0.4	-	-	(D)	(D)	32.2	
365	Radio, TV receiving equipment.....	1.6	3.1	-	3.3	-	0.3	0.7	-	-	-	6.2	68.9	
3651	Radio and TV receiving sets.....	1.2	3.1	-	0.2	-	0.3	0.6	-	-	-	5.2	51.7	
366	Communication equipment.....	5.9	3.5	1.0	6.3	2.2	11.9	36.8	0.2	0.2	6.2	11.8	272.4	
3661	Telephone and telegraph apparatus.....	3.7	2.7	(D)	5.2	(D)	7.5	(D)	(D)	0.1	3.0	3.8	89.6	
3662	Radio and TV communication equipment.....	2.3	0.7	(D)	1.1	(D)	4.4	(D)	(D)	0.1	3.2	8.0	182.8	

See footnotes at end of table.

Table 5A. Quantities of Pollutants Removed and Related Statistics, by Industry for Establishments With 20 or More Employees: 1980—Continued

(Values in millions of dollars; quantities in thousands of short tons)

SIC code	Industry	Air					Water					Solid waste		
		Total operating cost	Quantity of pollutants removed				Total operating cost	Quantity of pollutants removed				Total operating cost including payments for solid waste collection and disposal ¹	Quantity of solid waste removed	
			Particulates	Sulfur oxides	Nitrogen oxides, hydrocarbons, and carbon monoxides	Heavy metals, radioactive and toxic substances, and other		Suspended solids	Bio-chemical oxygen demand	Chemical oxygen demand	Oil and grease, toxic substances, and other			
367	Electric, electronic equipment--Continued													
3674	Electronic components, accessories.....	8.4	5.4	0.1	11.8	1.0	21.5	7.5	1.5	0.9	15.1	17.1	223.5	
3674	Semiconductors, related devices.....	3.8	0.1	-	2.4	0.5	12.2	1.0	1.0	0.6	2.0	5.8	90.2	
3679	Electronic components, n.e.c.....	3.4	0.4	0.1	8.7	0.1	6.2	2.5	0.1	0.1	8.2	7.8	54.7	
369	Misc. electric equipment, supplies.....	9.9	31.7	6.8	0.2	9.7	7.0	1.6	-	-	43.0	4.3	227.3	
3691	Storage batteries.....	8.0	17.8	6.3	-	9.2	4.0	0.9	-	-	0.6	1.1	69.0	
3694	Engine electrical equipment.....	0.9	(D)	(D)	0.1	-	1.9	0.3	-	-	4.4	1.5	128.9	
37	Transportation equipment.....	110.7	242.8	37.5	44.2	87.5	99.7	612.8	22.4	23.5	222.3	153.2	4,167.9	
371	Motor vehicles and equipment.....	92.0	201.3	25.0	39.2	83.6	69.2	585.5	5.2	7.9	150.7	110.9	2,560.6	
3711	Motor vehicles and car bodies.....	71.5	103.6	10.9	21.1	(D)	28.9	30.2	1.4	3.3	22.1	66.4	1,091.0	
3714	Motor vehicle parts, accessories.....	19.8	95.7	14.1	17.5	81.9	40.0	(D)	3.8	4.5	128.4	42.1	1,407.8	
372	Aircraft and parts.....	8.1	12.4	(D)	3.3	(D)	16.9	22.4	(D)	6.7	(D)	16.4	454.0	
3721	Aircraft.....	2.5	1.5	(D)	(D)	(D)	5.3	(D)	(D)	(D)	(D)	7.6	137.1	
3724	Aircraft engines and engine parts.....	3.3	8.9	2.8	(D)	0.1	8.0	(D)	(D)	(D)	4.3	5.5	140.6	
3728	Aircraft equipment, n.e.c.....	2.3	1.9	(D)	0.2	0.8	3.5	1.2	0.3	0.2	13.8	3.2	176.2	
373	Ship, boat building, repairing.....	5.6	12.8	5.1	1.3	1.7	5.1	1.6	0.6	8.7	26.6	16.2	599.2	
3731	Ship building and repairing.....	5.4	12.0	(D)	1.2	(D)	5.1	1.6	0.5	8.7	26.6	13.1	550.6	
3743	Railroad equipment.....	2.1	9.2	(D)	0.2	(D)	1.7	1.4	(D)	-	(D)	3.7	136.0	
376	Guided missiles, space vehicles.....	2.1	0.8	0.2	0.2	0.6	5.1	1.1	0.6	0.2	6.0	3.1	174.1	
3761	Guided missiles, space vehicles.....	1.6	0.3	(D)	-	0.1	2.9	(D)	(D)	(D)	1.1	1.8	58.4	
38	Instruments, related products.....	11.3	31.5	1.6	21.7	2.7	27.2	30.7	21.6	28.2	5.8	32.1	479.6	
382	Measuring, controlling devices.....	0.7	1.1	0.1	0.5	0.2	3.1	1.5	0.1	(D)	3.2	5.2	71.1	
3825	Instruments to measure electricity.....	0.3	0.6	-	-	-	1.5	0.4	(D)	(D)	0.6	2.8	21.6	
384	Medical instruments, supplies.....	1.4	2.1	0.6	1.2	-	1.3	0.6	2.3	1.3	0.4	4.3	107.3	
3842	Surgical appliances and supplies.....	1.0	1.9	-	(D)	-	0.9	0.3	0.9	(D)	0.3	2.7	67.8	
3861	Photographic equipment and supplies.....	8.6	(D)	(D)	19.7	(D)	21.3	24.6	(D)	(D)	1.0	20.0	255.3	
39	Misc. manufacturing industries.....	5.2	30.5	0.2	6.3	3.1	4.3	5.2	4.5	0.4	15.6	13.7	527.2	
394	Toys and sporting goods.....	0.4	10.1	-	0.1	0.4	0.6	0.8	4.2	-	14.1	4.2	308.8	
399	Miscellaneous manufactures.....	3.3	4.6	0.2	3.9	2.5	1.5	3.5	0.2	0.4	0.2	4.8	124.6	

Note: Totals may not agree precisely with detail because of independent rounding. No data are shown for cells where GAC is less than \$5.0 million or the standard error is 20 or greater.

- Represents zero. (D) Withheld to avoid disclosing operations of individual companies.

¹The operation cost for solid waste includes payment to governmental units (solid waste collection/disposal) and operating cost as reported in table 3.

²Major industry group 23, Apparel and Other Textile Products, is excluded.

Table 5B. Quantities of Pollutants Removed and Related Statistics, by State and Major Industry Group for Establishments With 20 or More Employees: 1980

(Value in millions of dollars; quantities in thousands of short tons)

SIC code	State and major industry group	Air					Water					Solid waste	
		Total operating cost	Quantity of pollutants removed				Total operating cost	Quantity of pollutants removed				Total operating cost including payments for solid waste collection and disposal ¹	Quantity of solid waste removed
			Particulates	Sulfur oxides	Nitrogen oxides, hydrocarbons, and carbon monoxides	Heavy metals, radioactive and toxic substances, and other		Suspended solids	Bio-chemical oxygen demand	Chemical oxygen demand	Oil and grease toxic substances, and other		
	United States ²	3,297.8	39,503.0	8,796.0	11,737.4	1,270.0	2,680.0	19,240.6	4,458.7	4,698.5	7,088.9	1,676.1	142,956.7
	New England Division:												
26	Maine.....	8.3	253.9	3.1	3.8	1.0	30.3	231.4	96.4	56.8	585.8	8.3	989.7
	Paper and allied products.....	5.7	232.2	(D)	(D)	(D)	26.5	192.0	73.6	(D)	49.8	5.3	521.0
26	New Hampshire.....	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)
	Paper and allied products.....	(D)	(D)	(D)	(D)	(D)	5.2	21.9	30.0	(D)	-	(D)	(D)
	Vermont.....	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)
26	Massachusetts.....	17.8	205.7	13.0	15.7	4.5	25.5	106.0	23.7	27.8	31.5	27.7	1,340.7
	Paper and allied products.....	1.8	3.5	8.3	3.8	-	2.7	32.4	10.9	14.2	-	3.6	124.7
28	Chemicals and allied products.....	2.1	4.2	0.5	1.7	(D)	5.9	4.5	10.4	(D)	(D)	2.4	71.7
34	Fabricated metal products.....	2.1	6.0	0.1	4.5	0.4	2.7	0.5	-	-	0.5	1.4	47.5
36	Electric, electronic equipment.....	1.5	0.3	0.1	(D)	0.1	5.7	0.4	(D)	-	2.2	4.1	55.0
38	Instruments, related products.....	1.6	0.7	-	(D)	-	3.2	0.6	(D)	-	(D)	3.9	33.0
	Rhode Island.....	1.5	0.6	0.1	0.1	0.4	3.2	1.1	4.0	5.7	34.5	4.1	75.2
	Connecticut.....	22.8	73.5	8.2	13.3	10.1	27.3	46.7	84.0	19.1	40.0	19.6	618.9
28	Chemicals and allied products.....	(D)	(D)	(D)	(D)	(D)	10.6	14.2	(D)	13.3	(D)	(D)	89.6
34	Fabricated metal products.....	2.0	2.3	0.1	0.9	0.2	3.9	2.6	-	0.1	4.4	2.3	41.2
37	Transportation equipment.....	1.0	1.6	1.2	(D)	-	5.5	1.3	-	0.2	0.8	1.8	81.4
	Middle Atlantic Division:												
20	New York.....	97.3	3,544.1	74.9	157.5	83.5	118.3	1,468.0	128.3	111.4	264.2	95.0	4,710.9
	Food and kindred products.....	1.6	29.6	-	-	-	4.7	(D)	46.3	9.7	37.4	4.7	249.2
26	Paper and allied products.....	3.6	(D)	(D)	4.7	(D)	13.6	108.7	45.6	(D)	10.8	6.2	205.5
28	Chemicals and allied products.....	23.2	2,388.1	2.6	29.0	6.9	40.4	(D)	121.8	26.2	76.8	17.4	881.2
32	Stone, clay, glass products.....	7.6	731.2	0.2	(D)	0.2	2.2	4.0	(D)	(D)	1.0	4.7	503.1
33	Primary metal industries.....	25.6	220.6	5.8	3.8	10.4	13.2	(D)	0.2	(D)	10.9	4.7	935.6
34	Fabricated metal products.....	1.8	6.0	-	0.1	0.5	2.3	1.3	-	0.1	1.4	3.9	87.4
35	Machinery, except electrical.....	3.5	30.2	(D)	1.1	0.5	7.0	1.9	(D)	(D)	(D)	11.0	223.3
36	Electric, electronic equipment.....	4.6	25.5	-	13.5	(D)	10.1	(D)	(D)	(D)	7.7	15.1	247.1
37	Transportation equipment.....	(D)	7.2	(D)	(D)	(D)	6.7	(D)	0.1	(D)	15.4	(D)	(D)
38	Instruments, related products.....	4.8	(D)	(D)	(D)	0.1	15.4	22.9	(D)	(D)	1.2	13.5	165.2
20	New Jersey.....	166.7	239.4	340.4	228.5	49.2	130.3	153.9	120.6	93.5	210.0	63.9	3,608.9
	Food and kindred products.....	7.2	10.3	(D)	0.2	0.5	9.4	9.3	7.7	7.7	35.7	5.0	218.5
28	Chemicals and allied products.....	46.5	50.6	35.3	39.6	29.9	76.4	60.4	39.6	66.5	28.6	23.8	691.1
29	Petroleum and coal products.....	(D)	18.4	301.3	(D)	-	27.4	(D)	(D)	(D)	123.6	(D)	70.5
32	Stone, clay, glass products.....	8.7	103.3	1.7	(D)	-	1.3	3.7	(D)	(D)	(D)	4.8	620.3
33	Primary metal industries.....	15.1	45.9	0.9	(D)	18.3	5.0	5.3	-	0.2	1.1	1.9	146.6
34	Fabricated metal products.....	3.1	2.7	-	9.1	-	1.8	1.1	-	0.3	0.2	2.5	33.4
35	Machinery, except electrical.....	1.6	0.2	(D)	-	-	0.7	(D)	-	-	2.1	2.3	34.9
36	Electric, electronic equipment.....	2.1	0.9	(D)	0.3	0.3	1.5	0.9	-	-	0.9	3.4	37.2
37	Transportation equipment.....	(D)	1.3	(D)	-	0.2	(D)	(D)	(D)	(D)	-	4.0	37.7
20	Pennsylvania.....	263.1	2,271.0	423.2	338.7	70.0	167.9	990.0	128.6	102.1	425.5	118.7	8,606.3
	Food and kindred products.....	2.1	30.5	0.3	(D)	(D)	4.9	18.5	15.8	18.4	61.9	5.8	295.4
26	Paper and allied products.....	8.5	101.9	(D)	6.4	(D)	11.4	80.2	88.8	(D)	2.5	10.0	517.0
28	Chemicals and allied products.....	19.4	77.2	65.6	34.4	13.8	22.9	13.6	13.0	43.3	35.1	10.0	267.4
29	Petroleum and coal products.....	51.1	24.9	80.4	(D)	1.8	30.4	8.8	3.7	17.7	(D)	4.7	246.1
30	Rubber, misc. plastics products.....	2.4	4.7	4.2	3.6	0.9	0.5	0.4	-	-	(D)	2.3	105.9
32	Stone, clay, glass products.....	12.8	565.8	4.9	0.6	4.1	3.2	12.8	0.2	-	22.1	8.3	569.9
33	Primary metal industries.....	143.5	1,269.1	243.0	41.3	(D)	79.7	761.5	(D)	-	174.6	52.7	5,600.1
34	Fabricated metal products.....	3.8	6.7	0.2	6.2	2.4	2.3	1.4	2.8	0.9	8.4	4.4	119.7
35	Machinery, except electrical.....	5.5	41.2	(D)	0.5	0.5	2.8	11.2	(D)	-	20.7	3.8	182.0
36	Electric, electronic equipment.....	4.9	31.7	5.6	3.0	2.1	5.1	1.7	0.1	0.1	1.8	3.9	192.4
37	Transportation equipment.....	2.3	3.6	(D)	(D)	2.7	1.8	(D)	-	(D)	3.9	3.4	85.7
	East North Central Division:												
20	Ohio.....	196.2	2,366.7	92.3	586.9	16.8	153.3	964.1	157.6	210.6	308.7	110.2	6,849.3
	Food and kindred products.....	3.7	17.4	(D)	0.2	(D)	5.9	77.8	37.2	30.1	3.1	5.5	297.4
26	Paper and allied products.....	5.1	101.7	3.2	8.4	-	12.6	138.1	88.2	101.4	-	4.3	670.9
28	Chemicals and allied products.....	14.4	68.9	5.6	86.8	7.9	25.8	56.7	8.4	41.1	15.1	14.5	445.0
29	Petroleum and coal products.....	6.1	19.2	57.6	260.6	-	7.9	6.6	5.7	6.4	19.4	1.7	99.7
30	Rubber, misc. plastics products.....	10.9	58.6	2.5	14.5	0.4	2.1	5.0	(D)	-	0.5	7.5	241.0
32	Stone, clay, glass products.....	13.2	875.8	(D)	(D)	(D)	7.7	17.6	(D)	(D)	0.5	6.4	619.9
33	Primary metal industries.....	113.7	1,123.5	9.4	(D)	(D)	67.7	628.9	0.3	(D)	127.8	25.5	3,452.3
34	Fabricated metal products.....	7.8	26.0	3.9	3.2	3.7	8.2	7.7	0.1	0.3	35.0	10.6	248.9
35	Machinery, except electrical.....	4.5	22.5	4.1	0.2	(D)	2.8	5.5	(D)	(D)	10.9	8.2	215.6
36	Electric, electronic equipment.....	2.2	24.1	(D)	9.0	0.1	2.8	3.8	-	(D)	(D)	3.7	240.5
37	Transportation equipment.....	13.8	25.4	3.8	3.1	0.1	8.9	13.8	(D)	(D)	19.4	18.8	230.8
20	Indiana.....	190.3	2,202.1	172.3	325.4	8.0	135.9	1,764.4	63.0	106.8	145.0	62.4	5,426.3
	Food and kindred products.....	3.6	27.3	(D)	0.1	-	3.3	11.2	7.5	7.4	6.3	3.5	134.5
28	Chemicals and allied products.....	6.4	36.2	(D)	(D)	(D)	28.8	10.0	19.9	45.1	0.6	7.7	352.5
29	Petroleum and coal products.....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
30	Rubber, misc. plastics products.....	0.5	5.2	-	0.6	-	1.3	1.6	(D)	(D)	0.5	2.8	122.8
33	Primary metal industries.....	122.8	788.1	10.3	(D)	(D)	74.9	1,581.6	(D)	(D)	57.9	19.6	3,012.6
35	Machinery, except electrical.....	1.5	10.2	-	(D)	(D)	1.7	2.6	-	-	3.9	2.2	102.7
36	Electric, electronic equipment.....	5.7	20.1	0.9	(D)	(D)	4.6	2.0	-	(D)	3.7	7.6	133.3
37	Transportation equipment.....	3.3	16.1	(D)	(D)	0.1	5.9	1.7	0.8	2.1	55.6	7.1	398.0

See footnotes at end of table.

Table 5B. Quantities of Pollutants Removed and Related Statistics, by State and Major Industry Group for Establishments With 20 or More Employees: 1980—Continued

(Value in millions of dollars; quantities in thousands of short tons)

SIC code	State and major industry group	Air					Water					Solid waste		
		Total operating cost	Quantity of pollutants removed				Total operating cost	Quantity of pollutants removed				Total operating cost including payments for solid waste collection and disposal ¹	Quantity of solid waste removed	
			Particulates	Sulfur oxides	Nitrogen oxides, hydrocarbons, and carbon monoxides	Heavy metals, radioactive and toxic substances, and other		Suspended solids	Bio-chemical oxygen demand	Chemical oxygen demand	Oil and grease toxic substances, and other			
East North Central Division--Continued														
	Illinois.....	162.2	1,447.2	618.3	1,002.2	70.3	125.1	648.0	88.2	103.1	213.0	101.9	6,150.8	
20	Food and kindred products.....	10.3	181.7	(D)	(D)	(D)	9.2	157.1	42.6	44.6	8.3	14.4	918.4	
26	Paper and allied products.....	4.2	20.5	0.8	6.9	-	3.5	16.0	(D)	0.1	1.2	5.1	250.5	
27	Printing and publishing.....	3.9	(D)	-	(D)	-	2.3	0.1	0.1	-	0.4	2.5	114.5	
28	Chemicals and allied products.....	24.1	183.0	35.7	122.2	15.3	24.5	57.8	21.5	26.0	48.5	19.7	1,893.3	
29	Petroleum and coal products.....	34.9	40.1	447.4	788.1	-	22.2	30.3	4.5	17.4	47.2	5.8	238.0	
30	Rubber, misc. plastics products.....	1.9	5.5	-	0.6	1.4	2.0	0.1	-	-	(D)	4.4	69.5	
32	Stone, clay, glass products.....	6.6	594.8	13.2	0.4	-	1.3	38.4	2.8	4.5	0.8	3.7	426.0	
33	Primary metal industries.....	55.4	367.9	(D)	6.0	(D)	32.3	305.5	1.7	(D)	76.4	11.7	1,232.5	
34	Fabricated metal products.....	4.9	7.4	0.9	6.5	3.2	8.3	6.4	0.4	1.2	2.4	6.2	154.1	
35	Machinery, except electrical.....	8.9	28.2	27.6	1.9	1.8	11.3	27.2	(D)	(D)	12.5	13.5	449.3	
36	Electric, electronic equipment.....	2.3	1.0	(D)	0.2	0.6	3.5	2.1	0.1	-	3.2	4.4	103.5	
37	Transportation equipment.....	2.1	14.2	(D)	(D)	(D)	2.1	1.4	(D)	-	(D)	4.4	106.4	
	Michigan.....	135.3	2,221.9	317.4	451.0	115.4	127.7	681.0	118.9	107.3	133.5	109.3	7,403.9	
20	Food and kindred products.....	0.9	4.9	-	-	-	3.9	43.4	13.6	14.1	0.6	3.6	371.0	
28	Chemicals and allied products.....	10.0	124.7	6.0	8.4	2.9	26.7	54.2	8.4	22.1	(D)	15.2	787.8	
29	Petroleum and coal products.....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	
32	Stone, clay, glass products.....	9.6	1,242.1	5.2	0.3	-	1.9	11.1	0.3	-	0.4	5.6	781.8	
33	Primary metal industries.....	60.5	515.5	(D)	277.7	(D)	17.8	370.5	(D)	-	21.0	26.4	3,155.3	
34	Fabricated metal products.....	1.8	7.3	0.5	3.8	1.4	5.6	5.5	-	-	7.8	5.1	273.5	
35	Machinery, except electrical.....	4.7	8.8	-	0.2	-	3.9	9.4	(D)	-	11.5	5.2	77.4	
37	Transportation equipment.....	30.7	115.3	17.7	8.3	2.7	42.0	31.9	(D)	(D)	63.8	34.1	1,040.3	
	Wisconsin.....	29.2	413.4	47.4	36.0	10.1	61.7	316.8	171.4	139.8	84.3	36.0	3,461.0	
26	Food and allied products.....	8.6	201.1	43.2	(D)	-	40.8	239.5	134.5	85.4	(D)	8.4	1,104.9	
34	Fabricated metal products.....	1.5	(D)	-	2.2	0.2	1.5	0.6	0.3	1.0	3.9	2.8	93.6	
35	Machinery, except electrical.....	2.5	26.2	0.2	0.5	(D)	1.3	20.7	-	-	3.3	3.7	442.9	
37	Transportation equipment.....	1.5	(D)	-	(D)	(D)	0.9	(D)	-	-	(D)	2.6	52.9	
West North Central Division:														
	Minnesota.....	28.8	223.7	151.9	171.1	0.2	28.6	221.1	62.0	60.5	25.0	18.1	924.6	
20	Food and kindred products.....	7.1	42.5	0.7	-	-	8.5	163.3	30.6	29.3	9.9	3.4	202.7	
26	Paper and allied products.....	0.5	(D)	0.2	(D)	(D)	11.1	44.5	22.0	25.6	0.3	2.3	156.3	
29	Petroleum and coal products.....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	
	Iowa.....	22.1	548.8	4.6	143.1	3.7	30.5	106.1	71.7	70.0	25.3	18.7	1,137.1	
20	Food and kindred products.....	9.0	171.3	(D)	127.8	1.0	11.2	68.0	57.1	35.1	14.8	4.5	385.6	
28	Chemicals and allied products.....	1.5	28.3	(D)	(D)	(D)	10.8	15.3	14.2	34.2	6.5	2.8	63.8	
35	Machinery, except electrical.....	4.7	35.9	-	(D)	(D)	3.3	(D)	(D)	-	3.4	5.8	327.0	
	Missouri.....	53.8	1,571.8	122.4	75.4	46.9	20.4	934.1	8.2	20.3	31.3	33.1	3,343.4	
20	Food and kindred products.....	2.9	54.5	-	-	-	2.5	10.1	4.1	5.8	6.1	3.0	128.7	
28	Chemicals and allied products.....	17.6	22.3	13.8	6.8	(D)	6.6	20.4	2.7	9.8	(D)	4.4	136.2	
29	Petroleum and coal products.....	2.3	1.2	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	58.5	
32	Stone, clay, glass products.....	6.4	1,424.2	-	-	21.9	0.7	852.2	-	-	-	2.0	1,352.7	
33	Primary metal industries.....	12.4	56.3	(D)	(D)	(D)	2.7	(D)	-	-	(D)	2.2	311.6	
37	Transportation equipment.....	9.2	6.6	(D)	(D)	(D)	1.2	(D)	-	(D)	0.2	13.4	98.5	
	North Dakota.....	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	
	South Dakota.....	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	
	Nebraska.....	5.1	28.8	0.5	7.7	0.3	4.4	109.6	33.0	59.4	12.1	6.1	865.8	
20	Food and kindred products.....	1.4	15.5	0.1	-	0.1	2.3	107.3	30.8	57.8	9.4	2.6	666.9	
	Kansas.....	30.0	1,216.8	49.7	224.2	4.2	11.1	36.6	32.0	81.0	52.5	13.0	1,358.3	
20	Food and kindred products.....	1.8	(D)	-	-	(D)	2.0	13.8	26.6	(D)	10.6	1.3	113.6	
28	Chemicals and allied products.....	11.5	15.7	(D)	(D)	(D)	3.7	1.9	(D)	(D)	(D)	1.0	39.9	
29	Petroleum and coal products.....	1.2	9.7	(D)	217.7	-	2.6	(D)	(D)	7.8	(D)	(D)	118.2	
32	Stone, clay, glass products.....	9.6	486.2	(D)	(D)	-	(D)	12.6	(D)	(D)	(D)	(D)	348.0	
South Atlantic Division:														
	Delaware.....	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	
28	Chemicals and allied products.....	12.2	50.9	18.3	(D)	(D)	20.1	(D)	(D)	3.8	0.6	3.0	219.4	
29	Petroleum and coal products.....	41.3	30.0	250.0	49.3	-	17.1	3.0	3.0	-	22.0	0.6	14.0	
	Maryland.....	57.8	742.1	18.0	22.1	9.7	47.5	228.0	15.4	9.8	44.1	19.9	1,966.4	
26	Paper and allied products.....	(D)	(D)	(D)	-	(D)	(D)	(D)	(D)	-	-	0.7	126.3	
28	Chemicals and allied products.....	6.9	(D)	1.9	(D)	3.9	12.5	(D)	2.1	3.9	5.5	4.9	194.1	
33	Primary metal industries.....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	
	District of Columbia.....	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	
	Virginia.....	38.0	659.5	72.8	124.2	34.0	44.6	180.8	331.6	195.6	23.7	22.7	1,620.5	
20	Food and kindred products.....	3.0	11.9	-	(D)	-	3.3	62.6	98.2	65.5	12.5	1.9	76.9	
22	Textile mill products.....	0.8	11.2	(D)	(D)	(D)	3.1	(D)	8.7	25.2	(D)	1.8	72.3	
26	Paper and allied products.....	(D)	333.9	(D)	1.2	(D)	12.6	83.0	59.8	(D)	(D)	(D)	454.3	
28	Chemicals and allied products.....	8.3	133.6	5.9	15.2	(D)	17.5	13.6	(D)	28.6	3.1	5.1	402.3	
37	Transportation equipment.....	(D)	22.4	(D)	(D)	13.9	(D)	0.6	(D)	(D)	2.2	2.8	100.2	
	West Virginia.....	60.5	489.9	32.9	13.3	37.4	74.6	248.2	38.2	52.1	13.1	32.1	2,697.5	
28	Chemicals and allied products.....	15.5	159.7	26.1	13.1	26.6	44.6	39.3	32.8	44.8	6.4	9.9	310.8	
33	Primary metal industries.....	39.7	244.3	(D)	(D)	(D)	(D)	(D)	(D)	(D)	5.4	(D)	(D)	

See footnotes at end of table.

Table 5B. Quantities of Pollutants Removed and Related Statistics, by State and Major Industry Group for Establishments With 20 or More Employees: 1980—Continued

(Value in millions of dollars; quantities in thousands of short tons)

SIC code	State and major industry group	Air					Water					Solid waste		
		Total operating cost	Quantity of pollutants removed				Total operating cost	Quantity of pollutants removed				Total operating cost including payments for solid waste collection and disposal ¹	Quantity of solid waste removed	
			Particulates	Sulfur oxides	Nitrogen oxides, hydrocarbons, and carbon monoxides	Heavy metals, radioactive and toxic substances, and other		Suspended solids	Biochemical oxygen demand	Chemical oxygen demand	Oil and grease toxic substances, and other			
South Atlantic Division—Continued														
	North Carolina.....	40.7	834.4	18.1	20.1	18.8	47.4	215.3	129.3	157.2	27.2	35.6	2,365.2	
20	Food and kindred products.....	0.4	4.7	-	(D)	-	1.9	35.8	10.1	7.3	3.0	1.1	43.8	
21	Tobacco products.....	4.5	21.9	(D)	(D)	0.3	(D)	(D)	-	-	-	(D)	83.3	
22	Textile mill products.....	8.0	36.1	1.2	0.6	(D)	9.6	16.2	17.0	28.1	5.3	6.2	228.4	
25	Furniture and fixtures.....	4.2	134.1	-	1.2	0.7	0.1	0.3	0.1	0.1	-	2.2	83.3	
26	Paper and allied products.....	6.4	224.0	(D)	(D)	(D)	13.0	141.6	77.8	89.8	0.1	4.5	886.1	
28	Chemicals and allied products.....	4.6	111.5	(D)	(D)	4.2	8.9	3.3	16.4	19.3	6.2	6.6	604.9	
35	Machinery, except electrical.....	(D)	0.7	-	(D)	-	2.5	0.3	-	-	5.0	(D)	28.2	
36	Electric, electronic equipment.....	1.9	(D)	-	0.5	0.6	1.6	0.4	-	-	3.7	1.3	27.1	
	South Carolina.....	18.5	887.1	6.8	10.6	21.0	42.9	150.0	103.9	188.9	5.8	22.7	1,131.3	
22	Textile mill products.....	1.0	15.1	-	0.5	0.3	6.0	5.1	12.8	22.6	0.6	3.8	121.2	
28	Chemicals and allied products.....	6.9	96.5	1.7	(D)	18.8	13.4	20.9	26.4	63.3	1.3	10.7	235.5	
32	Stone, clay, glass products.....	2.7	403.7	-	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	93.3	
	Georgia.....	46.3	952.1	31.3	12.1	16.5	43.4	257.0	126.2	72.9	76.9	23.3	1,723.9	
20	Food and kindred products.....	0.5	172.9	-	-	-	3.7	16.1	9.5	6.4	13.4	2.5	83.7	
22	Textile mill products.....	1.2	2.8	(D)	0.4	0.2	2.1	2.0	6.8	27.3	0.7	2.7	90.8	
26	Paper and allied products.....	26.5	616.1	(D)	(D)	(D)	15.5	190.4	100.3	(D)	(D)	6.5	1,029.8	
28	Chemicals and allied products.....	6.8	17.0	(D)	7.3	2.9	15.7	(D)	7.0	11.9	7.9	2.2	52.7	
32	Stone, clay, glass products.....	4.3	99.8	(D)	0.7	0.5	1.3	13.8	(D)	(D)	-	1.3	109.3	
37	Transportation equipment.....	1.1	2.6	-	-	-	1.5	2.3	(D)	(D)	(D)	3.0	28.8	
	Florida.....	46.9	1,236.9	244.6	14.6	35.5	63.8	737.5	223.2	140.9	83.9	25.2	13,855.1	
20	Food and kindred products.....	4.4	34.8	0.5	0.3	-	7.6	64.3	57.0	82.5	0.8	3.5	489.7	
26	Paper and allied products.....	14.1	299.7	(D)	-	(D)	30.8	170.5	139.7	(D)	-	2.1	199.7	
28	Chemicals and allied products.....	20.0	160.4	223.0	12.5	33.3	19.9	442.7	8.2	19.3	68.5	8.3	12,217.7	
36	Electric, electronic equipment.....	0.3	-	-	-	0.2	2.1	0.1	0.1	(D)	(D)	2.1	30.3	
East South Central Division:														
	Kentucky.....	39.4	615.4	39.0	274.5	18.0	34.5	109.9	22.9	39.8	49.6	32.5	1,719.7	
20	Food and kindred products.....	0.7	9.9	0.7	(D)	-	0.6	3.5	2.8	(D)	(D)	2.9	41.4	
28	Chemicals and allied products.....	10.3	208.8	(D)	79.2	13.6	18.8	22.3	9.7	22.9	(D)	6.2	201.0	
29	Petroleum and coal products.....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	
33	Primary metal industries.....	5.9	200.2	-	9.3	1.5	5.5	(D)	(D)	(D)	(D)	1.8	(D)	
35	Machinery, except electrical.....	2.5	4.0	(D)	2.3	0.4	1.6	1.7	(D)	(D)	0.7	1.9	40.7	
36	Electric, electronic equipment.....	2.5	4.2	2.4	0.6	-	0.8	2.9	-	-	(D)	1.5	85.8	
	Tennessee.....	56.9	1,325.8	876.4	230.7	85.2	66.3	1,548.9	109.0	74.1	198.9	37.1	5,091.6	
20	Food and kindred products.....	1.6	25.4	(D)	-	4.2	2.5	8.5	7.1	7.8	24.0	1.8	129.5	
26	Paper and allied products.....	3.0	190.9	(D)	(D)	(D)	3.8	99.7	41.6	28.9	(D)	1.8	167.8	
28	Chemicals and allied products.....	35.3	946.1	(D)	(D)	50.5	49.4	(D)	57.5	35.4	162.2	20.9	2,717.6	
33	Primary metal industries.....	7.7	43.7	482.0	37.6	(D)	2.4	15.3	0.1	0.1	(D)	1.5	1,568.3	
	Alabama.....	71.1	1,132.1	64.4	282.8	74.0	68.4	359.7	143.3	124.0	136.0	33.2	3,495.6	
26	Paper and allied products.....	(D)	389.5	24.8	-	56.3	14.3	221.4	103.6	(D)	(D)	(D)	744.2	
28	Chemicals and allied products.....	10.7	158.9	(D)	20.0	8.9	29.7	27.5	13.8	38.0	(D)	8.5	460.7	
33	Primary metal industries.....	40.1	238.3	(D)	258.8	8.5	17.3	74.9	(D)	(D)	75.3	6.4	1,323.1	
	Mississippi.....	30.6	546.9	154.8	21.8	31.6	30.9	130.2	52.9	128.1	59.9	22.6	2,092.8	
24	Lumber and wood products.....	2.5	26.8	-	1.3	-	6.1	6.1	5.5	12.3	0.5	2.6	386.8	
26	Paper and allied products.....	5.7	256.7	(D)	-	(D)	(D)	62.3	37.0	(D)	-	(D)	(D)	
28	Chemicals and allied products.....	5.2	(D)	(D)	(D)	(D)	10.8	(D)	4.9	(D)	3.7	1.3	(D)	
29	Petroleum and coal products.....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	
	West South Central Division:													
	Arkansas.....	22.7	686.8	71.1	12.3	4.4	37.3	110.1	101.2	217.3	1,890.7	17.6	2,522.7	
20	Food and kindred products.....	1.3	7.6	-	0.2	0.1	3.0	17.5	11.9	16.6	6.9	2.0	69.4	
26	Paper and allied products.....	5.3	298.1	(D)	-	(D)	6.3	80.0	65.2	166.4	-	3.6	324.0	
	Louisiana.....	153.2	892.7	457.5	1,209.1	70.1	189.7	2,431.5	419.8	229.6	271.2	67.9	9,938.1	
20	Food and kindred products.....	0.9	37.8	(D)	-	-	1.7	5.4	11.1	12.6	2.5	1.5	168.5	
26	Paper and allied products.....	6.3	347.8	(D)	(D)	(D)	12.7	247.3	107.8	(D)	(D)	3.6	194.5	
28	Chemicals and allied products.....	54.8	369.4	57.3	298.5	57.6	117.3	(D)	64.6	146.3	162.0	49.5	9,546.7	
29	Petroleum and coal products.....	76.7	12.7	314.3	896.2	-	(D)	(D)	235.2	32.8	(D)	(D)	791.9	
33	Primary metal industries.....	11.9	101.4	-	(D)	4.8	2.0	(D)	-	-	(D)	1.3	100.4	
	Oklahoma.....	23.1	430.7	84.8	183.2	21.9	15.3	28.6	15.2	14.3	78.1	15.2	525.2	
29	Petroleum and coal products.....	9.0	3.8	19.7	168.2	(D)	4.6	0.4	1.5	1.9	(D)	2.1	44.9	
	Texas.....	515.6	2,221.3	1,322.0	3,984.7	111.7	338.4	612.7	430.2	709.5	792.6	166.8	13,313.5	
26	Paper and allied products.....	15.1	241.3	10.5	(D)	6.2	23.4	143.1	76.2	114.8	(D)	6.5	402.8	
28	Chemicals and allied products.....	106.9	328.8	48.4	1,188.3	59.4	145.4	149.0	163.2	340.9	94.9	66.0	5,871.8	
29	Petroleum and coal products.....	305.2	166.0	1,151.8	2,736.0	8.4	139.5	42.4	109.9	176.3	553.1	46.0	2,032.8	
32	Stone, clay, glass products.....	15.4	1,032.9	12.5	3.7	0.3	1.5	43.8	1.5	2.3	(D)	2.6	1,014.1	
33	Primary metal industries.....	63.4	356.1	98.7	(D)	34.3	15.6	127.4	-	(D)	12.8	8.4	896.3	
35	Machinery, except electrical.....	1.0	3.3	-	0.2	0.1	1.0	4.9	(D)	-	(D)	5.4	98.1	
36	Electric, electronic equipment.....	1.1	0.4	-	(D)	0.7	0.9	(D)	-	-	0.3	2.0	24.8	
37	Transportation equipment.....	1.0	1.4	-	0.7	1.6	1.4	0.6	-	8.0	1.4	4.6	101.4	
	Mountain Division:													
	Montana.....	17.8	285.0	88.8	84.8	4.6	3.0	114.4	26.9	18.6	15.6	1.7	546.5	
33	Primary metal industries.....	10.3	38.5	51.1	-	-	-	-	-	-	-	0.1	0.4	
	Idaho.....	21.8	433.7	193.0	2.5	8.7	9.0	135.0	96.3	144.1	4.0	4.4	1,626.2	
20	Food and kindred products.....	0.3	21.8	(D)	-	0.1	3.1	97.8	75.6	143.6	1.2	1.3	566.8	
28	Chemicals and allied products.....	12.9	(D)	12.9	(D)	6.4	1.9	(D)	-	-	(D)	1.5	(D)	
33	Primary metal industries.....	4.5	17.0	179.8	-	-	1.9	0.1	-	-	-	1.7	-	
	Wyoming.....	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	

See footnotes at end of table.

Table 5B. Quantities of Pollutants Removed and Related Statistics, by State and Major Industry Group for Establishments With 20 or More Employees: 1980—Continued

(Value in millions of dollars; quantities in thousands of short tons)

SIC code	State and major industry group	Air					Water					Solid waste	
		Total operating cost	Quantity of pollutants removed				Total operating cost	Quantity of pollutants removed				Total operating cost including payments for solid waste collection and disposal ¹	Quantity of solid waste removed
			Particulates	Sulfur oxides	Nitrogen oxides, hydrocarbons, and carbon monoxides	Heavy metals, radioactive and toxic substances, and other		Suspended solids	Bio-chemical oxygen demand	Chemical oxygen demand	Oil and grease, toxic substances, and other		
Mountain Division--Continued													
20	Colorado.....	16.8	448.3	1.1	3.8	1.2	13.3	142.3	26.1	17.7	21.3	10.1	1,178.2
	Food and kindred products.....	(D)	3.4	-	-	-	(D)	62.3	25.6	17.2	6.6	3.1	101.0
33	Primary metal industries.....	(D)	(D)	0.4	-	0.2	4.6	(D)	-	-	(D)	(D)	(D)
38	Instruments, related products.....	(D)	(D)	-	(D)	-	2.0	(D)	(D)	(D)	(D)	(D)	15.2
New Mexico.....													
33	Primary metal industries.....	31.4	166.8	92.7	23.3	0.4	1.1	74.9	0.4	1.5	0.3	0.6	1,619.5
	Arizona.....	49.0	777.9	632.4	2.4	1.7	5.1	40.8	12.8	27.0	4.0	5.0	616.2
33	Primary metal industries.....	45.6	342.3	628.9	1.0	(D)	2.7	0.3	-	-	(D)	2.6	115.1
Utah.....													
33	Primary metal industries.....	28.7	206.6	356.8	38.8	7.3	4.6	11.6	0.7	1.0	40.3	4.4	726.6
	Nevada.....	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)
Pacific Division:													
20	Washington.....	77.3	866.9	97.6	187.3	53.6	65.6	257.1	287.4	147.1	64.4	25.1	3,272.2
	Food and kindred products.....	0.3	17.7	-	-	0.1	1.9	42.0	30.5	22.3	3.6	1.8	423.4
26	Paper and allied products.....	13.1	177.6	35.4	(D)	(D)	40.7	162.1	175.6	120.8	1.0	4.8	690.4
29	Petroleum and coal products.....	9.5	(D)	23.4	(D)	-	4.0	0.9	2.1	2.3	15.5	3.5	14.4
33	Primary metal industries.....	37.7	80.6	36.4	(D)	35.9	3.9	5.5	0.2	-	(D)	2.1	286.9
37	Transportation equipment.....	0.7	0.8	-	-	-	1.8	(D)	-	-	(D)	3.6	79.5
Oregon.....													
24	Lumber and wood products.....	29.5	871.6	52.3	8.3	26.4	35.3	180.5	141.1	78.3	69.7	20.1	1,450.3
26	Paper and allied products.....	8.8	547.6	0.1	4.7	5.6	2.7	(D)	0.9	-	5.2	8.3	637.2
33	Primary metal industries.....	(D)	220.0	(D)	0.1	(D)	22.4	129.2	126.8	69.8	-	(D)	194.0
	California.....	10.5	52.1	(D)	0.1	6.2	(D)	20.1	-	-	(D)	(D)	155.8
California.....													
20	Food and kindred products.....	308.0	2,524.7	1,058.8	1,022.6	48.2	128.9	889.1	131.0	448.1	330.3	126.9	7,811.4
	Food and kindred products.....	6.0	75.1	(D)	0.6	(D)	10.8	474.0	90.1	118.1	9.6	14.7	2,070.9
24	Lumber and wood products.....	2.9	32.2	-	-	2.4	0.7	(D)	-	-	-	3.3	394.1
26	Paper and allied products.....	2.9	19.3	(D)	10.8	(D)	5.3	48.2	26.0	13.7	1.3	4.8	254.2
28	Chemicals and allied products.....	15.6	47.5	8.9	19.3	13.2	23.0	14.5	4.0	9.2	29.1	22.0	543.6
29	Petroleum and coal products.....	197.4	122.2	1,034.5	923.2	(D)	54.3	173.7	8.2	296.3	243.8	11.8	561.1
30	Rubber, misc. plastics products.....	1.2	4.8	(D)	1.5	-	0.6	0.4	-	-	(D)	4.1	133.1
32	Stone, clay, glass products.....	23.4	1,949.1	10.4	7.7	0.3	2.7	22.1	(D)	(D)	1.3	9.2	1,416.7
33	Primary metal industries.....	24.0	231.6	3.0	33.7	17.7	13.5	131.6	(D)	(D)	10.9	6.9	1,608.8
34	Fabricated metal products.....	3.8	7.8	-	2.6	0.4	3.3	3.5	0.1	1.9	7.7	6.3	66.7
35	Machinery, except electrical.....	1.1	0.4	-	0.4	0.6	1.7	0.3	-	0.1	4.9	3.7	50.2
36	Electric, electronic equipment.....	5.3	8.4	0.4	7.8	(D)	3.8	(D)	-	0.1	3.3	5.4	115.8
37	Transportation equipment.....	15.1	5.3	-	2.9	1.6	7.7	1.6	0.3	0.4	11.9	22.5	295.6
Alaska.....													
	Alaska.....	0.3	0.8	0.4	-	-	4.0	21.8	15.0	29.6	17.5	1.7	85.6
Hawaii.....													
20	Food and kindred products.....	1.9	49.3	2.8	0.1	-	4.7	939.6	0.6	-	10.3	4.4	1,882.4
	Food and kindred products.....	1.1	48.8	-	-	-	3.3	932.1	-	-	-	3.4	1,813.2

Note: Totals may not agree precisely with detail because of independent rounding.

- Represents zero. (D) Withheld to avoid disclosing operations of individual companies. (S) Data suppressed because did not meet publication standards. This includes cells where GAC is less than \$5.0 million or the standard error is 20 or greater.

¹The operating cost for solid waste includes payment for governmental units (solid waste collection/disposal) and operating costs as reported in table 3.

²Major industry group 23, Apparel and Other Textile Products, is excluded.

Table 5C. Quantities of Pollutants Removed and Related Statistics, by SMSA
for Establishments With 20 or More Employees: 1980

(Value in millions of dollars; quantities in thousands of short tons)

Standard metropolitan statistical area	Air					Water				Solid waste		
	Total operating cost	Quantity of pollutants removed				Total operating cost	Quantity of pollutants removed				Total operating cost including payments for solid waste collection and disposal ¹	Quantity of solid waste removed
		Particulates	Sulfur oxides	Nitrogen oxides, hydrocarbons, and carbon monoxides	Heavy metals, radio-active and toxic substances, and other		Suspended solids	Bio-chemical oxygen demand	Chemical oxygen demand	Oil and grease toxic substances, and other		
Akron, Ohio.....	9.2	66.0	(D)	(D)	0.2	3.0	(S)	(S)	(S)	(S)	3.9	187.3
Albany-Schenectady-Troy, N.Y.....	10.0	(D)	0.2	25.0	(D)	16.0	(S)	(S)	(S)	(S)	8.8	416.8
Allentown-Bethlehem-Easton, Pa.-N.J.....	27.9	194.8	114.4	(D)	1.0	18.7	91.3	63.7	26.1	51.0	8.6	607.7
Anaheim-Santa Ana-Garden Grove, Calif.....	3.3	8.8	0.2	5.2	6.5	2.7	10.2	7.9	5.9	6.8	5.9	213.7
Anderson, Ind.....	3.1	(S)	(S)	(S)	(S)	1.9	(S)	(S)	(S)	(S)	2.3	63.1
Ann Arbor, Mich.....	0.7	(S)	(S)	(S)	(S)	3.8	3.9	0.1	0.2	16.9	3.8	118.3
Appleton-Oshkosh, Wis.....	4.1	46.2	6.4	1.0	0.1	5.5	44.6	17.8	3.7	1.9	3.9	346.6
Atlanta, Ga.....	4.3	24.2	0.2	2.0	4.1	3.1	7.0	2.1	5.3	12.6	6.4	120.4
Augusta, Ga.-S.C.....	4.9	48.7	7.5	(D)	(D)	5.1	9.1	7.8	10.5	0.2	4.5	242.2
Bakersfield, Calif.....	4.0	2.2	6.0	35.7	-	1.4	0.2	0.1	3.9	11.4	1.8	261.1
Baltimore, Md.....	42.1	489.5	8.1	21.7	5.6	39.3	156.0	3.9	3.5	29.4	15.8	(S)
Baton Rouge, La.....	57.2	156.7	(D)	(D)	22.1	79.3	1,761.6	59.0	46.1	49.5	18.5	1,608.9
Beaumont-Port Arthur-Orange, Tex.....	92.1	132.1	254.5	933.8	22.9	79.0	17.2	58.6	114.4	44.1	41.0	691.2
Billings, Mont.....	2.9	2.0	33.0	74.7	(D)	1.4	(S)	(S)	(S)	(S)	0.7	(S)
Binghamton, N.Y.-Pa.....	0.9	(S)	(S)	(S)	(S)	1.5	0.4	-	-	5.7	5.1	(S)
Birmingham, Ala.....	26.0	136.6	(D)	(D)	(D)	10.7	48.4	9.6	41.8	62.3	4.0	(S)
Boston, Mass.....	6.6	62.9	1.0	5.7	1.7	6.7	4.3	0.8	1.2	26.7	11.9	449.8
Bridgeport, Conn.....	2.6	8.9	0.1	1.1	(D)	3.0	(S)	(S)	(S)	(S)	3.2	105.2
Buffalo, N.Y.....	32.3	265.3	16.6	93.0	(D)	34.8	752.2	6.4	14.6	23.3	18.2	1,606.3
Canton, Ohio.....	7.9	28.0	(D)	(D)	(D)	7.6	25.8	9.2	0.6	6.1	1.7	270.5
Cedar Rapids, Iowa.....	4.0	26.5	(D)	1.0	(D)	0.9	(S)	(S)	(S)	(S)	1.5	83.6
Charleston-North Charleston, S.C.....	3.3	494.8	(D)	1.1	9.5	1.7	(S)	(S)	(S)	(S)	1.5	241.2
Charleston, W. Va.....	5.6	83.0	(D)	4.9	12.1	30.9	(S)	(S)	(S)	(S)	3.7	119.6
Charlotte-Gastonia, N.C.....	3.5	10.4	0.3	0.1	-	1.5	7.9	4.8	12.0	2.5	3.7	211.7
Chattanooga, Tenn.-Ga.....	4.4	26.0	(D)	37.6	-	4.0	(S)	(S)	(S)	(S)	3.9	(S)
Chicago, Ill.....	86.6	541.0	337.2	710.2	12.2	70.4	182.2	37.9	37.4	90.8	62.2	2,599.2
Cincinnati, Ohio-Ky.-Ind.....	11.6	63.2	8.5	(D)	(D)	0.9	7.8	(S)	(S)	(S)	10.6	(S)
Cleveland, Ohio.....	41.4	297.5	6.7	(D)	5.9	34.0	77.3	13.8	17.0	45.7	23.7	(S)
Columbia, S.C.....	3.3	15.1	-	4.5	0.2	3.9	(S)	(S)	(S)	(S)	6.8	67.0
Columbus, Ohio.....	6.0	115.1	3.0	6.0	(D)	7.1	(S)	(S)	(S)	(S)	7.0	(S)
Corpus Christi, Tex.....	29.4	57.2	118.6	147.2	(D)	9.0	19.4	3.5	11.9	6.2	3.0	2,990.8
Dallas-Fort Worth, Tex.....	15.4	(S)	(S)	(S)	(S)	6.3	28.6	12.8	1.4	6.5	21.1	(S)
Davenport-Rock Island-Moline, Iowa-Ill.....	5.8	106.3	(D)	(D)	(D)	3.8	3.6	2.1	1.6	1.5	3.9	(S)
Dayton, Ohio.....	8.1	197.0	3.0	9.1	(D)	2.8	24.8	4.7	0.3	1.0	9.7	187.7
Denver-Boulder, Colo.....	5.2	22.0	(D)	3.4	0.9	7.8	(S)	(S)	(S)	(S)	8.3	(S)
Des Moines, Iowa.....	2.0	117.0	1.3	132.1	-	0.6	1.5	-	-	0.4	1.7	114.4
Detroit, Mich.....	77.8	606.7	(D)	(D)	1.2	47.3	342.1	8.6	1.3	78.2	50.6	3,212.2
Dubuque, Iowa.....	1.4	(S)	(S)	(S)	(S)	2.4	(S)	(S)	(S)	(S)	1.6	(S)
El Paso, Tex.....	19.1	140.7	(D)	(D)	-	0.8	0.8	0.6	-	20.4	0.5	(S)
Erie, Pa.....	1.4	(S)	(S)	(S)	(S)	1.3	21.0	13.9	-	17.8	2.5	(S)
Eugene-Springfield, Oreg.....	1.8	5.4	-	0.3	-	1.9	1.5	0.7	-	-	1.4	162.0
Evansville, Ind.-Ky.....	4.3	37.8	(D)	(D)	(D)	14.5	2.9	1.3	2.1	1.1	3.4	159.0
Fargo-Moorhead, N. Dak.-Minn.....	3.0	3.0	-	-	-	4.1	32.8	1.1	2.0	-	0.2	(S)
Flint, Mich.....	13.5	(D)	(D)	(D)	(D)	6.0	3.0	0.5	-	5.5	5.9	(S)
Florence, Ala.....	5.8	32.7	3.2	0.7	3.0	4.8	3.1	0.3	1.6	1.0	2.7	(S)
Fort Wayne, Ind.....	2.2	12.0	(D)	(D)	0.1	1.8	2.2	0.6	0.4	3.1	3.3	(S)
Gadsden, Ala.....	5.4	(S)	(S)	(S)	(S)	3.4	19.2	-	-	9.1	2.0	460.2
Galveston-Texas City, Tex.....	42.0	(D)	(D)	227.3	1.1	16.7	10.8	26.6	47.8	4.2	9.3	1,262.8
Gary-Hammond-East Chicago, Ind.....	149.0	991.7	(D)	(D)	(D)	76.5	1,569.2	8.5	37.5	63.3	20.8	2,750.3
Grand Rapids, Mich.....	1.9	17.7	3.0	0.9	0.5	6.3	26.6	9.7	9.2	3.5	5.1	198.8
Green Bay, Wis.....	0.9	(S)	(S)	(S)	(S)	16.1	78.7	40.5	67.1	54.1	2.5	254.3
Greensboro-Winston-Salem-High Point, N.C.....	9.0	124.0	(D)	1.5	1.3	4.7	(S)	(S)	(S)	(S)	4.7	211.4
Greenville-Spartanburg, S.C.....	2.2	3.7	0.4	0.3	0.3	4.5	10.0	8.3	17.0	1.8	3.9	259.1
Hamilton-Middletown, Ohio.....	14.1	55.9	(D)	2.0	-	11.5	179.8	3.2	-	0.5	4.9	(S)
Harrisburg, Pa.....	5.4	34.1	-	0.1	0.1	0.7	2.1	2.1	3.3	2.7	1.0	83.0
Hartford, Conn.....	1.6	(S)	(S)	(S)	(S)	3.6	(S)	(S)	(S)	(S)	3.4	168.4
Honolulu, Hawaii.....	1.6	13.6	2.8	0.1	-	2.1	230.5	0.3	-	10.3	1.5	227.3
Houston, Tex.....	243.8	384.2	710.7	1,973.3	45.0	186.1	241.9	160.0	290.6	589.5	69.1	2,753.4
Huntington-Ashland, W. Va.-Ky.-Ohio.....	13.8	211.7	(D)	138.2	0.9	9.2	(S)	(S)	(S)	(S)	6.4	(S)
Indianapolis, Ind.....	6.8	(S)	(S)	(S)	(S)	6.1	8.6	2.4	4.9	12.8	8.3	(S)
Jacksonville, Fla.....	13.9	230.1	(D)	1.4	(D)	32.6	141.3	138.3	70.3	8.0	3.7	(S)
Jersey City, N.J.....	8.2	(S)	(S)	(S)	(S)	6.0	1.8	0.5	0.6	24.5	4.0	(S)
Johnstown, Pa.....	5.5	172.7	-	-	-	4.6	7.5	-	-	-	1.9	425.0
Kalamazoo-Portage, Mich.....	2.3	6.1	6.1	1.4	0.4	4.3	38.1	4.5	5.0	0.7	5.8	423.6
Kansas City, Mo.-Kans.....	19.5	328.7	(D)	(D)	(D)	9.6	57.2	4.9	21.4	5.1	19.9	(S)
Killeen-Temple, Tex.....	10.0	219.2	3.6	138.4	0.3	3.7	24.3	43.7	1.4	4.0	11.6	759.9
Knoxville, Tenn.....	7.2	(S)	(S)	(S)	(S)	4.5	1.4	1.1	0.1	92.1	1.4	(S)
Lafayette-West Lafayette, Ind.....	1.4	(D)	0.5	10.2	(D)	9.2	8.8	10.0	22.1	1.2	2.5	(S)
Lake Charles, La.....	30.1	36.9	(D)	(D)	(D)	25.1	369.3	215.7	5.7	197.9	10.1	165.0
Lakeland-Winter Haven, Fla.....	9.1	87.0	133.0	0.8	19.6	8.7	396.2	6.8	15.0	52.3	3.4	(S)
Lancaster, Pa.....	4.7	(S)	(S)	(S)	(S)	2.7	5.4	2.4	2.6	2.3	3.9	(S)
Lansing-East Lansing, Mich.....	4.2	(D)	(D)	(D)	(D)	5.5	1.0	-	-	4.2	6.6	240.7
Laredo, Tex.....	-	-	-	-	-	-	-	-	-	-	-	-
Las Vegas, Nev.....	2.9	(S)	(S)	(S)	(S)	1.6	(S)	(S)	(S)	(S)	0.6	(S)
Lexington-Fayette, Ky.....	2.3	3.4	-	3.6	0.1	1.8	0.7	-	0.3	0.7	2.3	70.4
Lima, Ohio.....	3.5	(S)	(S)	(S)	(S)	5.3	(S)	(S)	(S)	(S)	4.4	75.0
Little Rock-North Little Rock, Ark.....	3.4	185.2	-	0.1	0.1	2.4	2.1	1.0	1.7	7.2	2.4	1,823.6
Long Branch-Aubury Park, N.J.....	2.2	(S)	(S)	(S)	(S)	3.1	4.6	1.6	2.1	0.7	2.0	(S)
Lorain-Elyria, Ohio.....	13.4	177.9	(D)	(D)	(D)	11.8	103.5	-	-	2.0	6.6	(S)
Los Angeles-Long Beach, Calif.....	127.1	(S)	(S)	(S)	(S)	42.6	213.2	11.6	321.1	203.7	44.3	(S)

See footnotes at end of table.

Table 5C. Quantities of Pollutants Removed and Related Statistics, by SMSA for Establishments With 20 or More Employees: 1980—Continued

(Value in millions of dollars; quantities in thousands of short tons)

Standard metropolitan statistical area	Air					Water					Solid waste	
	Total operating cost	Quantity of pollutants removed				Total operating cost	Quantity of pollutants removed				Total operating cost including payments for solid waste collection and disposal ¹	Quantity of solid waste removed
		Particulates	Sulfur oxides	Nitrogen oxides, hydrocarbons, and carbon monoxides	Heavy metals, radioactive and toxic substances, and other		Suspended solids	Biochemical oxygen demand	Chemical oxygen demand	Oil and grease toxic substances, and other		
Louisville, Ky.—Ind.....	13.7	379.3	13.9	117.0	(D)	10.5	17.7	3.6	22.1	8.3	10.6	(S)
Macon, Ga.....	2.6	83.0	-	-	-	2.6	12.3	7.2	2.1	1.0	0.6	45.0
Memphis, Tenn.—Ark.—Miss.....	3.9	(S)	(S)	(S)	(S)	22.9	6.7	15.6	24.7	19.1	5.2	(S)
Milwaukee, Wis.....	11.4	57.6	(D)	16.2	0.4	5.1	48.0	0.9	4.4	12.5	11.0	(S)
Minneapolis-St. Paul, Minn.—Wis.....	20.0	83.0	(D)	168.5	0.1	7.2	(S)	(S)	(S)	(S)	11.3	(S)
Mobile, Ala.....	6.1	(D)	13.1	(D)	12.7	15.9	65.0	17.3	6.4	36.7	6.3	(S)
Monroe, La.....	1.9	(S)	(S)	(S)	(S)	1.2	35.0	14.2	2.5	0.1	1.8	(S)
Muskegon-Muskegon Heights, Mich.....	1.8	49.3	1.5	0.4	0.8	0.9	(S)	(S)	(S)	(S)	2.5	(S)
Nashville-Davidson, Tenn.....	2.8	(D)	(D)	4.5	0.8	4.5	1.9	4.2	6.8	8.2	5.5	(S)
Nassau-Suffolk, N.Y.....	1.2	(S)	(S)	(S)	(S)	4.5	2.5	0.3	1.1	7.1	6.0	(S)
New Brunswick-Perth Amboy-Sayreville, N.J.....	51.2	52.6	(D)	12.7	20.7	16.6	25.4	13.6	9.9	41.8	9.1	(S)
New London-Norwich, Conn.—R.I.....	7.0	(S)	(S)	(S)	(S)	5.7	7.9	71.7	0.1	9.2	1.9	(S)
New Orleans, La.....	12.5	15.8	(D)	1.5	10.8	10.8	34.4	2.9	48.2	5.7	4.8	(S)
New York, N.Y.—N.J.....	23.0	59.3	2.2	(D)	1.0	13.6	(S)	(S)	(S)	(S)	20.4	703.6
Newark, N.J.....	63.5	52.1	(D)	90.7	20.4	40.4	10.7	18.2	22.8	11.2	18.2	(S)
Newport News-Hampton, Va.....	6.3	(D)	(D)	(D)	(D)	4.7	42.6	29.5	42.1	1.1	2.6	124.7
Oklahoma City, Okla.....	2.3	2.9	-	0.6	0.9	1.3	2.3	0.2	-	5.1	1.6	49.3
Omaha, Nebr.—Iowa.....	2.6	7.2	-	6.3	0.2	1.7	5.7	1.5	1.5	3.6	2.8	176.0
Parkersburg-Marietta, W. Va.—Ohio.....	19.9	(S)	(S)	(S)	(S)	21.6	(S)	(S)	(S)	(S)	8.4	1,464.5
Pensacola, Fla.....	7.7	(S)	(S)	(S)	(S)	5.4	17.8	10.6	10.5	0.3	1.2	(S)
Peoria, Ill.....	15.5	(D)	18.9	0.7	(D)	11.7	79.4	9.1	14.4	2.0	5.6	430.8
Petersburg-Colonial Heights-Hopewell, Va.....	5.1	50.5	(D)	(D)	1.5	5.7	2.1	134.5	7.8	1.2	1.3	93.0
Philadelphia, Pa.—N.J.....	97.9	363.6	101.6	333.3	24.0	62.3	76.6	23.9	47.7	138.9	30.8	1,352.3
Phoenix, Ariz.....	2.6	85.3	3.6	0.8	1.7	2.0	40.5	12.8	27.0	1.4	2.0	(S)
Pittsburgh, Pa.....	105.8	761.4	244.0	57.5	1.7	53.2	357.8	2.1	18.7	180.7	48.8	(S)
Portland, Maine.....	0.4	(S)	(S)	(S)	(S)	3.2	(S)	(S)	(S)	(S)	1.4	60.2
Portland, Oreg.—Wash.....	14.6	(S)	(S)	(S)	(S)	11.3	52.9	49.7	27.5	54.4	5.7	(S)
Poughkeepsie, N.Y.....	1.3	(S)	(S)	(S)	(S)	7.8	0.7	0.7	0.2	-	7.6	(S)
Providence-Warwick-Pawtucket, R.I.—Mass.....	1.5	(S)	(S)	(S)	(S)	3.8	1.0	3.9	5.6	34.2	5.6	(S)
Provo-Orem, Utah.....	4.9	99.2	2.8	0.9	-	0.3	7.2	-	0.1	1.8	0.9	211.4
Pueblo, Colo.....	11.0	67.5	0.2	0.2	0.3	3.5	(S)	(S)	(S)	(S)	0.3	(S)
Raleigh-Durham, N.C.....	1.3	(S)	(S)	(S)	(S)	2.2	1.1	2.2	2.8	0.3	2.1	(S)
Reading, Pa.....	3.7	133.8	5.5	8.2	1.7	5.4	0.9	-	-	1.1	2.0	162.7
Richmond, Va.....	2.6	18.3	-	(D)	(D)	7.2	(S)	(S)	(S)	(S)	4.5	87.7
Riverside-San Bernardino-Ontario, Calif.....	28.9	1,494.6	(D)	17.4	0.5	10.4	(S)	(S)	(S)	(S)	8.5	(S)
Rochester, N.Y.....	5.4	58.5	(D)	(D)	(D)	19.9	78.2	55.3	28.9	8.4	16.7	618.9
Rockford, Ill.....	1.3	14.7	0.9	14.4	1.4	2.1	4.8	0.6	0.8	6.8	2.7	148.0
Sacramento, Calif.....	1.8	13.2	-	0.5	-	1.7	72.1	3.6	4.2	-	2.2	299.9
Saginaw, Mich.....	10.6	37.5	239.0	183.7	99.1	3.0	24.7	0.4	-	6.9	8.7	667.2
St. Louis, Mo.—Ill.....	50.7	901.8	303.8	174.6	24.1	18.7	231.0	9.1	16.0	40.4	19.3	808.0
Salt Lake City-Ogden, Utah.....	23.2	107.3	(D)	(D)	(D)	2.7	(S)	(S)	(S)	(S)	2.8	495.2
San Francisco-Oakland, Calif.....	93.9	149.1	286.7	94.9	7.9	46.3	51.8	16.4	30.8	81.9	38.5	650.0
San Jose, Calif.....	6.6	(D)	(D)	2.1	0.1	4.7	8.5	5.6	6.1	6.2	7.4	(S)
Savannah, Ga.....	12.3	(S)	(S)	(S)	(S)	14.6	(S)	(S)	(S)	(S)	2.2	263.0
Seattle-Everett, Wash.....	5.2	459.0	(D)	0.3	0.1	11.0	16.2	77.0	0.2	40.1	9.0	(S)
Spokane, Wash.....	5.7	27.4	0.7	(D)	0.3	0.8	(S)	(S)	(S)	(S)	0.8	(S)
Springfield-Chicopee-Holyoke, Mass.—Conn.....	4.2	9.9	-	7.1	1.4	1.7	1.3	4.0	6.0	0.9	4.5	168.8
Staubenville-Weirton, Ohio—W. Va.....	26.6	178.2	6.8	-	0.1	27.6	225.2	0.6	-	30.1	12.5	1,765.3
Stockton, Calif.....	1.9	(S)	(S)	(S)	(S)	1.8	138.4	16.2	10.9	7.5	1.8	(S)
Syracuse, N.Y.....	4.3	78.5	(D)	(D)	(D)	4.2	474.0	1.4	1.8	3.4	3.5	(S)
Tacoma, Wash.....	17.6	58.5	(D)	(D)	(D)	3.1	13.2	13.1	6.7	1.9	1.8	192.2
Tampa-St. Petersburg, Fla.....	9.6	(S)	(S)	(S)	(S)	4.6	43.0	4.2	2.7	15.9	7.3	7,778.9
Terre Haute, Ind.....	3.6	11.7	1.0	-	-	9.8	6.6	32.5	33.1	0.1	2.5	74.5
Texarkana, Tex.—Texarkana, Ark.....	2.8	90.6	4.2	-	-	2.7	(S)	(S)	(S)	(S)	2.0	187.3
Toledo, Ohio-Mich.....	8.8	332.9	31.4	192.9	0.1	15.9	30.7	2.2	4.3	21.5	10.7	(S)
Trenton, N.J.....	3.4	7.4	0.2	1.0	-	1.7	0.7	0.1	0.2	0.5	1.8	62.1
Tucson, Ariz.....	5.5	90.7	39.0	-	-	1.5	-	-	-	2.6	0.1	22.2
Tulsa, Okla.....	11.4	122.9	(D)	35.7	18.3	4.3	6.9	1.8	0.2	7.6	4.1	(S)
Tuscaloosa, Ala.....	3.2	7.9	11.6	1.2	-	1.6	0.3	0.6	2.9	0.3	0.7	11.8
Vallejo-Fairfield-Napa, Calif.....	22.3	6.8	84.0	200.0	2.0	7.1	(S)	(S)	(S)	(S)	0.5	98.3
Vineland-Millville-Bridgeton, N.J.....	1.3	0.7	(D)	(D)	(D)	3.1	(S)	(S)	(S)	(S)	0.9	(S)
Waterloo-Cedar Falls, Iowa.....	2.7	27.3	-	2.0	-	1.3	(S)	(S)	(S)	(S)	2.3	206.4
Wheeling, W. Va.—Ohio.....	5.5	19.7	(D)	-	(D)	3.0	10.0	0.1	-	8.2	1.0	(S)
Wilmington, Del.—N.J.—Md.....	64.7	77.9	(D)	(D)	(D)	59.0	120.5	10.4	11.4	24.1	8.5	292.2
Wilmington, N.C.....	3.4	(S)	(S)	(S)	(S)	5.6	2.7	8.4	8.6	4.3	4.2	(S)
York, Pa.....	2.7	75.8	(D)	(D)	(D)	6.3	(S)	(S)	(S)	(S)	3.4	(S)
Youngstown-Warren, Ohio.....	20.1	190.1	(D)	1.3	(D)	7.0	38.6	0.6	1.0	29.7	7.7	(S)

Note: Totals may not agree precisely with detail because of independent rounding. Major industry group 23, Apparel and Other Textile Products, was not included in the survey and therefore is excluded from the SMSA totals. No major industry groups are shown. No SMSA totals are shown where GAC is less than \$5.0 million or the standard error is 20 or greater.

- Represents zero. (D) Withheld to avoid disclosing operations of individual companies. (S) Data suppressed because did not meet publication standards. This includes cells where PACE or GAC is less than \$5.0 million or the standard error is 20 or greater.

¹The operating costs for solid waste include payment to governmental units (solid waste collection/disposal) and operating cost as reported in table 3.

Appendix A. Pollution Abatement Form and Instructions

DUE DATE: 60 DAYS AFTER RECEIPT OF FORM

Form Approved: O.M.B. No. 41-R2807

<p>MA-200 110-24-80</p> <p style="text-align: center;">U.S. DEPARTMENT OF COMMERCE BUREAU OF THE CENSUS</p> <p style="text-align: center;">SURVEY ON POLLUTION ABATEMENT COSTS AND EXPENDITURES 1980</p>	<p>NOTICE - Response to this inquiry is required by law (title 13, U.S. Code). By the same law, your report to the Census Bureau is confidential. It may be seen only by sworn Census employees and may be used only for statistical purposes. The law also provides that copies retained in your files are immune from legal process.</p>									
<p>Please read the instructions before completing this report.</p>	<p>RETURN THIS COPY</p> <p><i>(Please correct any error in name and address including ZIP code)</i></p>									
<p>RETURN TO Bureau of the Census 1201 East Tenth Street Jeffersonville, Indiana 47132</p>										
<p>Change of operating status</p> <p><i>Mark (X) one if applicable</i></p> <p>This establishment has been</p> <p>Idle <input type="checkbox"/> Closed <input type="checkbox"/></p> <p>Sold - <i>When?</i> <input type="checkbox"/> Other - <i>Specify</i> <input checked="" type="checkbox"/></p>										
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">Name of person to contact regarding this report</td> <td colspan="2" style="text-align: center;">Telephone</td> </tr> <tr> <td></td> <td style="width: 20%;">Area code</td> <td style="width: 20%;">Number</td> </tr> <tr> <td></td> <td></td> <td>Extension</td> </tr> </table>		Name of person to contact regarding this report	Telephone			Area code	Number			Extension
Name of person to contact regarding this report	Telephone									
	Area code	Number								
		Extension								

GENERAL INSTRUCTIONS

The purpose of the questionnaire is to collect total expenditures made by industry to abate pollutant emissions. The survey covers current operating costs and capital expenditures made to reduce pollution in its air, water, or solid forms.

If you cannot answer a question from your company records, please estimate the answer carefully. In particular cases, identification of abatement expenditures may require the joint efforts of your establishment's financial and engineering staff.

Report data on a calendar year basis for 1980. However, if your establishment uses a fiscal year that ends between 10/31/80 and 2/28/81, fiscal year data will be acceptable.

Answer all questions. If data based on book records are not available, carefully prepared estimates are acceptable. If your establishment did not operate for a full year, please indicate the disposition by making the appropriate boxes in the above item pertaining to "Change of operating status." If you have any questions regarding this report, please call (301) 763-1755.

Report all value figures in thousands of dollars.

For example,

<i>If the value figure for the year is --</i>	
\$5,600,000	Report as <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 0 <input type="checkbox"/> 0
\$5,600	Report as <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 6
\$560	Report as <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 1
\$499	Mark box less than \$500 and greater than 0
\$0	Report as <input checked="" type="checkbox"/> 0 (zero)

This report is required only for the establishment specified in the address block of the report form. DO NOT COMBINE this report with other establishments in your company even though both operations may jointly use the same pollution abatement facilities. When this occurs, apportion the expenditures and costs according to the rate of pollution abatement equipment utilization or the relative amounts of pollutants produced.

Pollution abatement means the reduction or elimination of pollutants emitted from your property or activities. Pollution abatement includes prevention, treatment, and recycling. Treatment refers to the wide variety of techniques used to cool, detoxify, decompose, and separate-to-store or ameliorate.

Efforts to improve environmental aesthetics or employee comfort, such as landscaping or air-conditioning, should not be included in the answers to this survey. Do not include purchases of motor vehicles with pollution abatement devices. The cost of such devices will be estimated by other means.

Some establishments manufacture equipment and materials, such as electrostatic precipitators or desulfurized fuels, to be sold to others for pollution abatement purposes. Current and capital expenditures for the production of such equipment and materials should not be reported.

Air pollutants are airborne substances including particulates (dust, fly ash, smoke), sulfur oxides, nitrogen oxides, carbon monoxide, hydrocarbons, odors, fluorides, lead and other heavy metals, radioactive and toxic substances.

Water pollutants are waterborne substances including phosphate, nitrates (-trites), substances that generate chemical or biochemical oxygen demand, solids, acids, bases, heavy metals, radioactive and toxic substances, synthetic organic molecules, harmful microbes, oil, grease, dyes, and heat.

Solid waste includes garbage, trash, sewage sludge, dredged spoil, incinerator residue, wrecked or discarded equipment, biological and chemical wastes, radioactive and other toxic materials. Include solid waste produced as a result of air and water pollutant abatement.

Item 1 - WHO SHOULD REPORT?

(a) NO POLLUTION ABATEMENT ACTIVITIES - Every concern receiving a report form which had no pollution abatement capital expenditures, payments to government, or annual operating costs and expenses during 1980 should answer only item 1, certify in item 11, and return form for processing. Failure to return the form will require the issuance of followup letters.

(b) POLLUTION ABATEMENT ACTIVITIES - Every concern receiving a report form which had some pollution abatement capital expenditures or payments to government or annual operating costs and expenses during 1980 is required to submit data for items 2-10 as applicable.

Item 1 - IF NO CAPITAL EXPENDITURES, CURRENT COSTS, OR PAYMENTS TO GOVERNMENT INCURRED -

Mark (X) in box for appropriate reason

- | | |
|--|---|
| <p>1. <input type="checkbox"/> No pollutants generated</p> <p>2. <input type="checkbox"/> Cost included in rent, taxes, lease agreement, or removal without charge or payment (such as scavenger services)</p> | <p>3. <input type="checkbox"/> All costs less than \$500</p> <p>4. <input checked="" type="checkbox"/> Other - <i>Specify</i></p> |
|--|---|

Important

Before marking item 1, please review items 6 and 7 on page 2: under normal operations those expenses such as sewage fees and trash removal in excess of \$500 should be reported on this form.

SPECIFIC INSTRUCTIONS
CAPITAL EXPENDITURES FOR NEW PLANT AND EQUIPMENT FOR POLLUTION ABATEMENT - 1980

▶ **Capital expenditures for new plant and equipment** include new plant and equipment acquisitions (both replacement and expansion) and expenditures for construction in progress. Capital expenditures are those chargeable to your establishment's accounts for plant and equipment that are subject to depreciation or to amortization. Total capital expenditures for abatement include expenditures for both end-of-line techniques and changes-in-production processes.

▶ **Item 2a - End-of-line techniques** treat air pollutants after their generation in your production processes by use of separately identifiable abatement (retrofit) facilities such as dust collectors, scrubbers, precipitators, or other treatment processes. These facilities are installed exclusively for the purpose of abating pollutant emissions from your plant or property.

▶ **Item 2b - Changes-in-production processes** reduce or eliminate the generation of pollutants by employing material substitution, improved catalysts, reuse of waste or water, and equipment alteration. These changes may involve converting equipment to handle the use of substitute fuels that generate less pollutants. Item 2b refers to new plant and equipment necessary for such changes in production processes. If your establishment has made expenditures for changes-in-production processes, estimate the expenditures as the difference between expenditures on new plant and equipment that your establishment actually made for changes-in-production processes and what your establishment would have spent for comparable plant and equipment without air pollution abatement features.

▶ **Item 2d - To estimate the impact of emission standards** upon capital investment for pollution abatement in industry, it is necessary to match investment expenditures to major types of air pollutants abated. Note: Some techniques abate both sulfur oxides and particulates. If your establishment uses any of these techniques, include the expenditures for these techniques under the category "sulfur oxides."

▶ **Item 3a - Same as item 2a, except that it refers to waste water treatment techniques** such as trickling filters, settling ponds, clarifiers, oil spill dikes, and other separately identifiable treatment techniques.

▶ **Item 3b - Same as item 2b, except that it refers to abatement of water pollutants.** The purpose of pollution abatement may be achieved by converting processes and equipment to enable recycling (closed or partially closed loop systems) or to enable additional uses of water prior to discharge. Do not include capital expenditures undertaken exclusively for the purpose of insuring adequate water supply for production.

▶ **Item 4 - Disposal of solid waste** refers to the containment, transfer, or other disposal of solid wastes by means acceptable to local, State, or Federal authorities and includes sanitary or other landfill methods, incineration, and dumping in designated authorized areas. Exclude capital expenditures made for new plant and equipment designed for the disposal of salable items such as scrap metal, scrap paper, scrap wood, etc.

Item 2 - CAPITAL EXPENDITURES FOR ABATEMENT OF AIR POLLUTANTS		Item code	Expenditures in 1980 (Report in thousands of dollars)		
			Mark (X) here if less than \$500 and greater than 0.		
		Millions (\$000)	Thousands (000)		
a. Report your total expenditures in 1980 for new plant and equipment designed to abate air pollutants through end-of-line techniques		1010	\$		<input type="checkbox"/>
b. In addition or as an alternative to end-of-line techniques, did this establishment make expenditures to acquire or modify plant and equipment for changes-in-production processes to abate air pollutants? <div style="display: flex; align-items: center; margin-top: 5px;"> <input type="checkbox"/> YES → <div style="margin-left: 20px; font-size: x-small;"> Report the difference between these expenditures for new plant and equipment and the expenditures that you would have made for comparable plant and equipment without air pollutant abatement features. </div> </div> <div style="margin-top: 5px;"> <input type="checkbox"/> NO - Skip to c </div>		1040	\$		<input type="checkbox"/>
c. TOTAL AIR CAPITAL (Sum of lines 2a and 2b) →		1050	\$		<input type="checkbox"/>
d. Distribute total expenditures (item 2c) in terms of percent by type of pollutants abated. Please give your best estimates. For example, if you reported \$1,350,000 in item 2c, this equals the 100% in item 2d. Break this total expenditure figure into percents between the listed types of air pollutants abated. <i>Example</i> (1) Particulates 50% (2) Sulfur oxides 00% (3) Nitrogen oxides, etc. 35% (4) Other 15% TOTAL 100%		Percentage			
		(1) Particulates	1060		%
		(2) Sulfur oxides	1070		%
		(3) Nitrogen oxides, hydrocarbons, carbon monoxide	1080		%
		(4) Other (heavy metals, radioactive and toxic substances) - Specify	1090		%
		TOTAL PERCENTAGE →		100%	
Item 3 - CAPITAL EXPENDITURES FOR ABATEMENT OF WATER POLLUTANTS		Item code	Expenditures in 1980 (Report in thousands of dollars)		
			Mark (X) here if less than \$500 and greater than 0.		
		Millions (\$000)	Thousands (000)		
a. Report your total expenditures in 1980 for new plant and equipment designed to abate water pollutants through end-of-line techniques		2010	\$		<input type="checkbox"/>
b. In addition or as an alternative to end-of-line techniques, did this establishment make expenditures to acquire or modify plant and equipment for changes-in-production processes to abate water pollutants? <div style="display: flex; align-items: center; margin-top: 5px;"> <input type="checkbox"/> YES → <div style="margin-left: 20px; font-size: x-small;"> Report the difference between these expenditures for new plant and equipment and the expenditures that you would have made for comparable plant and equipment without water pollutant abatement features. </div> </div> <div style="margin-top: 5px;"> <input type="checkbox"/> NO - Skip to c </div>		2040	\$		<input type="checkbox"/>
c. TOTAL WATER CAPITAL (Sum of lines 3a and 3b) →		2050	\$		<input type="checkbox"/>
Item 4 - CAPITAL EXPENDITURES FOR SOLID WASTE DISPOSAL		Item code	Expenditures in 1980 (Report in thousands of dollars)		
			Mark (X) here if less than \$500 and greater than 0.		
		Millions (\$000)	Thousands (000)		
Report your total expenditures in 1980 on new plant and equipment designed for the disposal of solid waste		3010	\$		<input type="checkbox"/>

SPECIFIC INSTRUCTIONS FOR TONNAGES OF POLLUTANTS REMOVED

- ▶ **Item 8** – Report the annual total tonnages of the listed air pollutants abated during 1980. The tonnages should include all air pollutants abated during 1980 by new as well as previously existing pollution abatement equipment. If this information is not available from records, report engineering estimates where possible.
- ▶ **Item 9** – Report the annual total tonnages of the listed water pollutants during 1980. The tonnages should include all water pollutants abated during 1980 by new as well as previously existing pollution abatement equipment. If this information is not available from records, report engineering estimates where possible.
- ▶ **Item 10** – Report the annual tonnages of solid waste disposed of by means acceptable to local, State, and Federal authorities. Solid wastes disposed consists of all solid wastes including those wastes generated by air and water pollution abatement activities.

Item 8 – AIR POLLUTANTS ABATED BY WEIGHT On the basis of your best judgment, estimate the total tonnages of specific air pollutants abated during 1980 by new as well as previously installed pollution abatement facilities.	Item code	Mark (X) here if less than 1/2 ton and greater than 0.	
		Tonnage abated in 1980	
a. Particulates	9010	Tons	<input type="checkbox"/>
b. Sulfur oxides	9020	Tons	<input type="checkbox"/>
c. Nitrogen oxides, hydrocarbons, carbon monoxide	9030	Tons	<input type="checkbox"/>
d. Other (heavy metals, radioactive and toxic substances) – Specify <input checked="" type="checkbox"/>			
_____	9040	Tons	<input type="checkbox"/>

Item 9 – WATER POLLUTANTS ABATED BY WEIGHT On the basis of your best judgment, estimate the total tonnages of specific water pollutants abated during 1980 by new as well as previously installed pollution abatement facilities.			
a. Total suspended solids (dry weight basis)	9110	Tons	<input type="checkbox"/>
b. Biochemical oxygen demand (BOD ₅)	9120	Tons	<input type="checkbox"/>
c. Chemical oxygen demand (COD)	9130	Tons	<input type="checkbox"/>
d. Other (oil and grease, toxic substances, etc.) – Specify <input checked="" type="checkbox"/>			
_____	9150	Tons	<input type="checkbox"/>

Item 10 – SOLID WASTE DISPOSAL BY WEIGHT On the basis of your best judgment, estimate the tonnage of solid waste properly disposed during 1980, including those wastes generated by air and water pollution abatement activities (e.g., dust, fly ash, sludge, and contained liquids). Exclude the weight of any materials that are reclaimed and also exclude the weight of dissolved solids in the waste water effluent.	9510	Tons	<input type="checkbox"/>

Remarks – Suggestions for improvements in this questionnaire are solicited.

Item 11 – CERTIFICATION OF SUBSTANTIAL ACCURACY OF REPORT

Signature of authorized person	Title
Address (Number, street, city, State, ZIP code)	Date

SPECIFIC INSTRUCTIONS

COST RECOVERED THROUGH ABATEMENT ACTIVITIES - 1980

COST OF POLLUTION ABATEMENT - Continued

- ▶ **Item 5** - The estimate of costs recovered through abatement activities may have two parts: (1) the value of materials or energy reclaimed through abatement activities that were reused in production, and (2) revenue that was obtained from the sale of materials or energy reclaimed through abatement activities. Heat is an example of reclaimed energy. Value and revenue are net of any additional cost incurred for additional processing of materials or energy to make them reusable or salable. Do not reduce annual costs of abatement (item 7) by the estimate reported here.
Report cost recovered by form of pollution abated (air, water, or solid waste).
- ▶ **Item 6a** - Report all payments to governmental units for your industrial and/or sanitary sewage use. Include payments made to government for overstrength effluent charges, sewer district tax assessment, etc. Include sewage payments which are included in your local tax bill, estimate if necessary.
- ▶ **Item 6b** - Report all payments to governmental units for your solid waste collection/disposal services. Included are collection costs to municipal agency (haulers) and disposal cost such as dump or burial fees at a landfill or incinerator.

- ▶ **Item 7** - Report the annual operating costs and expenses for pollution abatement incurred in 1980. Include all costs and expenses to operate and maintain plant(s) and equipment to abate air or water pollutants or collection/disposal of solid waste, and/or services provided by private contractors.
Note: This item should include the operating cost for all pollution abatement equipment and processes in operation during 1980 regardless of the year the equipment was installed or the process initiated.
Do not include expenditures for pollution abatement research and development or health and safety.
Do not include interest for financing pollution abatement capital expenditures.
Include the estimated costs of materials, parts, fuel, power, labor, and depreciation (or amortization) due to the use of plant and equipment to abate air or water pollutant discharges or dispose of solid wastes. Include increased costs for fuel and power incurred to reduce pollution (for example, low sulfur fuel, increased fuel or power consumption). Include leasing costs of equipment used in abatement and cost of abatement services provided by private contractors.
If you abate pollutants (air, water, or solid waste), be sure to complete the corresponding quantity section (items 8-10).

▶ Item 5 - COSTS RECOVERED THROUGH ABATEMENT ACTIVITIES		Costs recovered in 1980 (Report in thousands of dollars)	
Report your best estimate of the value of materials or energy reclaimed (costs recovered) through pollution abatement activities and either reused in production or sold by form of pollution abated. (Exclude the value of items if they would have been recovered, sold, or reused in production in the absence of any pollution control regulations.)	Item code	Mark (X) here if less than \$500 and greater than 0.	
		Millions (\$000)	Thousands (000)
a. Air	4010	\$	<input type="checkbox"/>
b. Water	4020	\$	<input type="checkbox"/>
c. Solid waste	4030	\$	<input type="checkbox"/>
d. TOTAL (Sum of lines 5a through 5c) →	4050	\$	<input type="checkbox"/>
▶ Item 6 - PAYMENTS TO GOVERNMENT FOR POLLUTION REMOVAL		Annual costs in 1980 (Report in thousands of dollars)	
Total payments to governmental (Federal, State, county, local) units for -	Item code	Mark (X) here if less than \$500 and greater than 0.	
		Millions (\$000)	Thousands (000)
a. Public sewage use	5010	\$	<input type="checkbox"/>
b. Municipal solid waste collection/disposal (If you report on this line, be sure to complete ITEM 10.)	5020	\$	<input type="checkbox"/>
▶ Item 7 - ANNUAL OPERATING COSTS FOR POLLUTION ABATEMENT			
a. Report your best estimate of the annual costs of pollution abatement activities, including services provided by private contractors (trash removal, etc.)			
NOTE: DO NOT reduce your estimate by costs recovered (item 5). DO NOT include the payments to governmental units (item 6).	6010	\$	<input type="checkbox"/>
SPECIAL INSTRUCTIONS		Percentage of total annual costs in 1980 (Item 7a)	
Distribute total Operating and Maintenance cost (item code 6010) in terms of percent by Kind of Cost (7b) and Form of Pollution Abated (7c). Please give your best estimates.		Item code	
For example, if you reported \$2,350,000 in item 7a, this equals 100% in 7b and 7c. Break this cost figure into percents between the listed types of costs in each section.			
EXAMPLES			
▶ Section b			
(1) Depreciation 10%			
(2) Labor 40%			
(3) Equipment 60%			
(4) Other 50%			
TOTAL 100%			
▶ Section c			
(1) Air 10%			
(2) Water 30%			
(3) Solid 60%			
TOTAL 100%			
b. Report your best estimate of percentage incurred by - KIND OF COST			
(1) Depreciation		7010	%
(2) Labor		7020	%
(3) Materials and supplies		7030	%
(4) Services, equipment, leasing, and other costs		7040	%
(5) TOTAL (Sum of lines (1) through (4) should equal 100%) →			100%
c. Report your best estimate of percentage incurred by - FORM OF POLLUTION ABATED			
(1) Air pollutants (If you report on this line, be sure to complete item 8.)		8010	%
(2) Water pollutants (If you report on this line, be sure to complete item 9.)		8020	%
(3) Solid wastes (including private contract service) (If you report on this line, be sure to complete item 10.)		8030	%
(4) TOTAL (Sum of lines (1) through (3) should equal 100%) →			100%

Appendix B. Standard Consolidated Statistical Areas and Standard Metropolitan Statistical Areas

(Titles and definitions of the SMSA's in the State established by the Department of Commerce, Office of Federal Statistical Policy and Standards, as of December 1979)

Standard Consolidated Statistical Areas

Boston-Lawrence-Lowell, Mass.-N.H.	Consists of Boston, Mass., SMSA; Lawrence-Haverhill, Mass.-N.H., SMSA; Lowell, Mass.-N.H., SMSA; and Brockton, Mass., SMSA
Chicago-Gary, Ill.-Ind.	Consists of Chicago, Ill., SMSA, and Gary-Hammond-East Chicago, Ind., SMSA
Cincinnati-Hamilton, Ohio-Ky.-Ind.	Consists of Cincinnati, Ohio-Ky.-Ind., SMSA, and Hamilton-Middletown, Ohio, SMSA
Cleveland-Akron-Lorain, Ohio	Consists of Cleveland, Ohio, SMSA; Akron, Ohio, SMSA; and Lorain-Elyria, Ohio, SMSA
Detroit-Ann Arbor, Mich.	Consists of Detroit, Mich., SMSA, and Ann Arbor, Mich., SMSA
Houston-Galveston, Tex.	Consists of Houston, Tex., SMSA, and Galveston-Texas City, Tex., SMSA
Los Angeles-Long Beach-Anaheim, Calif.	Consists of Los Angeles-Long Beach, Calif., SMSA; Anaheim-Santa Ana-Garden Grove, Calif., SMSA; Riverside-San Bernardino-Ontario, Calif., SMSA; and Oxnard-Simi Valley-Ventura, Calif., SMSA
Miami-Fort Lauderdale, Fla.	Consists of Miami, Fla., SMSA, and Fort Lauderdale-Hollywood, Fla., SMSA
Milwaukee-Racine, Wis.	Consists of Milwaukee, Wis., SMSA, and Racine, Wis., SMSA
New York-Newark-Jersey City, N.Y.-N.J.-Conn.	Consists of New York, N.Y.-N.J., SMSA; Nassau-Suffolk, N.Y., SMSA; Newark, N.J., SMSA; Jersey City, N.J., SMSA; New Brunswick-Perth Amboy-Sayreville, N.J., SMSA; Paterson-Clifton-Passaic, N.J., SMSA; Long Branch-Asbury Park, N.J., SMSA; Stamford, Conn., SMSA; and Norwalk, Conn., SMSA
Philadelphia-Wilmington-Trenton, Pa.-Del.-N.J.-Md.	Consists of Philadelphia, Pa.-N.J., SMSA; Wilmington, Del.-N.J.-Md., SMSA, and Trenton, N.J., SMSA
San Francisco-Oakland-San Jose, Calif.	Consists of San Francisco-Oakland, Calif., SMSA; San Jose, Calif., SMSA, and Vallejo-Fairfield-Napa, Calif., SMSA
Seattle-Tacoma, Wash.	Consists of Seattle-Everett, Wash., SMSA, and Tacoma, Wash., SMSA

Standard Metropolitan Statistical Areas

Abilene, Tex.	Consists of Callahan, Jones, and Taylor Counties, Tex.
Akron, Ohio	Consists of Portage and Summit Counties, Ohio
Albany, Ga.	Consists of Dougherty and Lee Counties, Ga.
Albany-Schenectady-Troy, N.Y.	Consists of Albany, Montgomery, Rensselaer, Saratoga, and Schenectady Counties, N.Y.
Albuquerque, N. Mex.	Consists of Bernalillo and Sandoval Counties, N. Mex.
Alexandria, La.	Consists of Grant and Rapides Parishes, La.
Allentown-Bethlehem-Easton, Pa.-N.J.	Consists of Carbon, Lehigh, and Northampton Counties, Pa.; and Warren County, N.J.
Altoona, Pa.	Coextensive with Blair County, Pa.
Amarillo, Tex.	Consists of Potter and Randall Counties, Tex.
Anaheim-Santa Ana-Garden Grove, Calif.	Coextensive with Orange County, Calif.
Anchorage, Alaska	Coextensive with Anchorage Division, Alaska
Anderson, Ind.	Coextensive with Madison County, Ind.

Ann Arbor, Mich.	Coextensive with Washtenaw County, Mich.
Anniston, Ala.	Coextensive with Calhoun County, Ala.
Appleton-Oshkosh, Wis.	Consists of Calumet, Outagamie, and Winnebago Counties, Wis.
Asheville, N.C.	Consists of Buncombe and Madison Counties, N.C.
Atlanta, Ga.	Consists of Butts, Cherokee, Clayton, Cobb, De Kalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Newton, Paulding, Rockdale, and Walton Counties, Ga.
Atlantic City, N.J.	Coextensive with Atlantic County, N.J.
Augusta, Ga.-S.C.	Consists of Columbia and Richmond Counties, Ga., and Aiken County, S.C.
Austin, Tex.	Consists of Hays, Travis, and Williamson Counties, Tex.
Bakersfield, Calif.	Coextensive with Kern County, Calif.
Baltimore, Md.	Consists of Baltimore city and Anne Arundel, Baltimore, Carroll, Harford, and Howard Counties, Md.
Baton Rouge, La.	Consists of Ascension, East Baton Rouge, Livingston, and West Baton Rouge Parishes, La.
Battle Creek, Mich.	Consists of Barry and Calhoun Counties, Mich.
Bay City, Mich.	Coextensive with Bay County, Mich.
Beaumont-Port Arthur-Orange, Tex.	Consists of Hardin, Jefferson, and Orange Counties, Tex.
Billings, Mont.	Coextensive with Yellowstone County, Mont.
Biloxi-Gulfport, Miss.	Consists of Hancock, Harrison, and Stone Counties, Miss.
Binghamton, N.Y.-Pa.	Consists of Broome and Tioga Counties, N.Y., and Susquehanna County, Pa.
Birmingham, Ala.	Consists of Jefferson, St. Clair, Shelby, and Walker Counties, Ala.
Bismarck, N. Dak.	Consists of Burleigh and Morton Counties, N. Dak.
Bloomington, Ind.	Coextensive with Monroe County, Ind.
Bloomington-Normal, Ill.	Coextensive with McLean County, Ill.
Boise City, Idaho	Coextensive with Ada County, Idaho
Boston, Mass.	Consists of Beverly, Lynn, Peabody, and Salem cities, and Boxford, Danvers, Hamilton, Lynnfield, Manchester, Marblehead, Middleton, Nahant, Saugus, Swampscott, Topsfield, and Wenham towns in Essex County; Cambridge, Everett, Malden, Medford, Melrose, Newton, Somerville, Waltham, and Woburn cities, and Acton, Arlington, Ashland, Bedford, Belmont, Boxborough; Burlington, Carlisle, Concord, Framingham, Holliston, Lexington, Lincoln, Natick, North Reading, Reading, Sherborn, Stoneham, Sudbury, Wakefield, Watertown, Wayland, Weston, Wilmington, and Winchester towns in Middlesex County; Quincy city, and Bellingham, Braintree, Brookline, Canton, Cohasset, Dedham, Dover, Foxborough, Franklin, Holbrook, Medfield, Medway, Millis, Milton, Needham, Norfolk, Norwood, Randolph, Sharon, Stoughton, Walpole, Wellesley, Westwood, Weymouth, and Wrentham towns in Norfolk County; Abington, Duxbury, Hanover, Hanson, Hingham, Hull, Kingston, Marshfield, Norwell, Pembroke, Rockland, Scituate towns in Plymouth County; and Boston, Chelsea, and Revere cities, and Winthrop town in Suffolk County, Mass.
Bradenton, Fla.	Coextensive with Manatee County, Fla.
Bridgeport, Conn.	Consists of Bridgeport and Shelton cities, and Easton, Fairfield, Monroe, Stratford, and Trumbull towns in Fairfield County; and Derby and Milford cities in New Haven County, Conn.
Bristol, Conn.	Consists of Bristol city and Burlington town in Hartford County, and Plymouth town in Litchfield County, Conn.
Brockton, Mass.	Consists of Easton town in Bristol County; Avon town in Norfolk County; and Brockton city, and Bridgewater, East Bridgewater, Halifax, West Bridgewater, and Whitman towns in Plymouth County, Mass.
Brownsville-Harlingen-San Benito, Tex.	Coextensive with Cameron County, Tex.
Bryan-College Station, Tex.	Coextensive with Brazos County, Tex.
Buffalo, N.Y.	Consists of Erie and Niagara Counties, N.Y.
Burlington, N.C.	Coextensive with Alamance County, N.C.
Caguas, P. R.	Consists of Caguas, Gurabo, and San Lorenzo Municipios, P.R.
Canton, Ohio	Consists of Carroll and Stark Counties, Ohio
Cedar Rapids, Iowa	Coextensive with Linn County, Iowa
Champaign-Urbana-Rantoul, Ill.	Coextensive with Champaign County, Ill.

Charleston-North Charleston, S.C.	Consists of Berkeley, Charleston, and Dorchester Counties, S.C.
Charleston, W. Va.	Consists of Kanawha and Putnam Counties, W. Va.
Charlotte-Gastonia, N.C.	Consists of Gaston, Mecklenburg, and Union Counties, N.C.
Chattanooga, Tenn.-Ga.	Consists of Hamilton, Marion, and Sequatchie Counties, Tenn.; and Catoosa, Dade, and Walker Counties, Ga.
Chicago, Ill.	Consists of Cook, Du Page, Kane, Lake, McHenry, and Will Counties, Ill.
Cincinnati, Ohio-Ky.-Ind.	Consists of Clermont, Hamilton, and Warren Counties, Ohio; Boone, Campbell, and Kenton Counties, Ky.; and Dearborn County, Ind.
Clarksville-Hopkinsville, Tenn.-Ky.	Consists of Montgomery County, Tenn. and Christian County, Ky.
Cleveland, Ohio	Consists of Cuyahoga, Geauga, Lake, and Medina Counties, Ohio
Colorado Springs, Colo.	Consists of El Paso and Teller Counties, Colo.
Columbia, Mo.	Coextensive with Boone County, Mo.
Columbia, S.C.	Consists of Lexington and Richland Counties, S.C.
Columbus, Ga.-Ala.	Consists of Chattahoochee County and Columbus (consolidated government), Ga., and Russell County, Ala.
Columbus, Ohio	Consists of Delaware, Fairfield, Franklin, Madison, and Pickaway Counties, Ohio
Corpus Christi, Tex.	Consists of Nueces and San Patricio Counties, Tex.
Dallas-Fort Worth, Tex.	Consists of Collin, Dallas, Denton, Ellis, Hood, Johnson, Kaufman, Parker, Rockwall, Tarrant, and Wise Counties, Tex.
Danbury, Conn.	Consists of Danbury city and Bethel, Brookfield, New Fairfield, Newtown, and Redding towns in Fairfield County; and New Milford town in Litchfield County, Conn.
Davenport-Rock Island-Moline, Iowa-Ill.	Consists of Scott County, Iowa and Henry and Rock Island Counties, Ill.
Dayton, Ohio	Consists of Greene, Miami, Montgomery, and Preble Counties, Ohio
Daytona Beach, Fla.	Coextensive with Volusia County, Fla.
Decatur, Ill.	Coextensive with Macon County, Ill.
Denver-Boulder, Colo.	Consists of Adams, Arapahoe, Boulder, Denver, Douglas, Gilpin, and Jefferson Counties, Colo.
Des Moines, Iowa	Consists of Polk and Warren Counties, Iowa
Detroit, Mich.	Consists of Lapeer, Livingston, Macomb, Oakland, St. Clair, and Wayne Counties, Mich.
Dubuque, Iowa	Coextensive with Dubuque County, Iowa
Duluth-Superior, Minn.-Wis.	Consists of St. Louis County, Minn. and Douglas County, Wis.
Eau Claire, Wis.	Consists of Chippewa and Eau Claire Counties, Wis.
El Paso, Tex.	Coextensive with El Paso County, Tex.
Elkhart, Ind.	Coextensive with Elkhart County, Ind.
Elmira, N.Y.	Coextensive with Chemung County, N.Y.
Enid, Okla.	Coextensive with Garfield County, Okla.
Erie, Pa.	Coextensive with Erie County, Pa.
Eugene-Springfield, Oreg.	Coextensive with Lane County, Oreg.
Evansville, Ind.-Ky.	Consists of Gibson, Posey, Vanderburgh, and Warrick Counties, Ind. and Henderson County, Ky.
Fall River, Mass.-R.I.	Consists of Fall River city and Dighton, Somerset, Swansea, and Westport towns in Bristol County, Mass.; and Little Compton, Portsmouth, and Tiverton towns in Newport County, R.I.
Fargo-Moorhead, N. Dak.-Minn.	Consists of Cass County, N. Dak. and Clay County, Minn.
Fayetteville, N.C.	Coextensive with Cumberland County, N.C.
Fayetteville-Springdale, Ark.	Consists of Benton and Washington Counties, Ark.
Fitchburg-Leominster, Mass.	Consists of Shirley and Townsend towns in Middlesex County, and Fitchburg and Leominster cities and Lunenburg and Westminster towns in Worcester County, Mass.
Flint, Mich.	Consists of Genesee and Shiawassee Counties, Mich.
Florence, Ala.	Consists of Colbert and Lauderdale Counties, Ala.
Fort Collins, Colo.	Coextensive with Larimer County, Colo.
Fort Lauderdale-Hollywood, Fla.	Coextensive with Broward County, Fla.
Fort Myers-Cape Coral, Fla.	Coextensive with Lee County, Fla.

Fort Smith, Ark.-Okla.	Consists of Crawford and Sebastian Counties, Ark. and Le Flore and Sequoyah Counties, Okla.
Fort Wayne, Ind.	Consists of Adams, Allen, De Kalb, and Wells Counties, Ind.
Fresno, Calif.	Coextensive with Fresno County, Calif.
Gadsden, Ala.	Coextensive with Etowah County, Ala.
Gainesville, Fla.	Coextensive with Alachua County, Fla.
Galveston-Texas City, Tex.	Coextensive with Galveston County, Tex.
Gary-Hammond-East Chicago, Ind.	Consists of Lake and Porter Counties, Ind.
Grand Forks, N. Dak.-Minn.	Consists of Grand Forks County, N. Dak. and Polk County, Minn.
Grand Rapids, Mich.	Consists of Kent and Ottawa Counties, Mich.
Great Falls, Mont.	Coextensive with Cascade County, Mont.
Greeley, Colo.	Coextensive with Weld County, Colo.
Green Bay, Wis.	Coextensive with Brown County, Wis.
Greensboro—Winston-Salem—High Point, N.C.	Consists of Davidson, Forsyth, Guilford, Randolph, Stokes, and Yadkin Counties, N.C.
Greenville-Spartanburg, S.C.	Consists of Greenville, Pickens, and Spartanburg Counties, S.C.
Hamilton-Middletown, Ohio	Coextensive with Butler County, Ohio
Harrisburg, Pa.	Consists of Cumberland, Dauphin, and Perry Counties, Pa.
Hartford, Conn.	Consists of Hartford city and Avon, Bloomfield, Canton, East Granby, East Hartford, East Windsor, Enfield, Farmington, Glastonbury, Granby, Manchester, Marlborough, Newington, Rocky Hill, Simsbury, South Windsor, Suffield, West Hartford, Wethersfield, Windsor, and Windsor Locks towns in Hartford County; New Hartford town in Litchfield County; Cromwell, East Hampton, and Portland towns in Middlesex County; Colchester town in New London County; and Andover, Bolton, Columbia, Coventry, Ellington, Hebron, Stafford, Tolland, Vernon, and Willington towns in Tolland County, Conn.
Honolulu, Hawaii	Coextensive with Honolulu County, Hawaii
Houston, Tex.	Consists of Brazoria, Fort Bend, Harris, Liberty, Montgomery, and Waller Counties, Tex.
Huntington-Ashland, W. Va.-Ky.-Ohio	Consists of Cabell and Wayne Counties, W. Va.; Boyd and Greenup Counties, Ky.; and Lawrence County, Ohio
Huntsville, Ala.	Consists of Limestone, Madison, and Marshall Counties, Ala.
Indianapolis, Ind.	Consists of Boone, Hamilton, Hancock, Hendricks, Johnson, Marion, Morgan, and Shelby Counties, Ind.
Iowa City, Iowa	Coextensive with Johnson County, Iowa
Jackson, Mich.	Coextensive with Jackson County, Mich.
Jackson, Miss.	Consists of Hinds and Rankin Counties, Miss.
Jacksonville, Fla.	Consists of Baker, Clay, Duval, Nassau, and St. Johns Counties, Fla.
Janesville-Beloit, Wis.	Coextensive with Rock County, Wis.
Jersey City, N.J.	Coextensive with Hudson County, N.J.
Johnson City-Kingsport-Bristol, Tenn.-Va.	Consists of Carter, Hawkins, Sullivan, Unicoi, and Washington Counties, Tenn., and Bristol city and Scott and Washington Counties, Va.
Johnstown, Pa.	Consists of Cambria and Somerset Counties, Pa.
Kalamazoo-Portage, Mich.	Consists of Kalamazoo and Van Buren Counties, Mich.
Kankakee, Ill.	Coextensive with Kankakee County, Ill.
Kansas City, Mo.-Kans.	Consists of Cass, Clay, Jackson, Platte, and Ray Counties, Mo., and Johnson and Wyandotte Counties, Kans.
Kenosha, Wis.	Coextensive with Kenosha County, Wis.
Killeen-Temple, Tex.	Consists of Bell and Coryell Counties, Tex.
Knoxville, Tenn.	Consists of Anderson, Blount, Knox, and Union Counties, Tenn.
Kokomo, Ind.	Consists of Howard and Tipton Counties, Ind.
La Crosse, Wis.	Coextensive with La Crosse County, Wisc.
Lafayette, La.	Coextensive with Lafayette Parish, La.
Lafayette-West Lafayette, Ind.	Coextensive with Tippecanoe County, Ind.
Lake Charles, La.	Coextensive with Calcasieu Parish, La.
Lakeland-Winter Haven, Fla.	Coextensive with Polk County, Fla.

Lancaster, Pa.	Coextensive with Lancaster County, Pa.
Lansing-East Lansing, Mich.	Consists of Clinton, Eaton, Ingham, and Ionia Counties, Mich.
Laredo, Tex..	Coextensive with Webb County, Tex.
Las Cruces, N. Mex.	Coextensive with Dona Ana County, N. Mex.
Las Vegas, Nev.	Coextensive with Clark County, Nev.
Lawrence, Kans.	Coextensive with Douglas County, Kans.
Lawrence-Haverhill, Mass.-N.H.	Consists of Haverhill and Lawrence cities and Amesbury, Andover, Georgetown, Groveland, Merrimac, Methuen, North Andover, Salisbury, and West Newbury towns in Essex County, Mass. and Atkinson, Hampstead, Kingston, Newton, Plaistow, Salem, and Windham towns in Rockingham County, N.H.
Lawton, Okla.	Coextensive with Comanche County, Okla.
Lewiston-Auburn, Maine	Consists of Auburn and Lewiston cities and Lisbon town in Androscoggin County, Maine
Lexington-Fayette, Ky.	Consists of Bourbon, Clark, Fayette, Jessamine, Scott, and Woodford Counties, Ky.
Lima, Ohio	Consists of Allen, Auglaize, Putnam, and Van Wert Counties, Ohio
Lincoln, Nebr.	Coextensive with Lancaster County, Nebr.
Little Rock-North Little Rock, Ark.	Consists of Pulaski and Saline Counties, Ark.
Long Branch-Asbury Park, N.J.	Coextensive with Monmouth County, N.J.
Longview-Marshall, Tex.	Consists of Gregg and Harrison Counties, Tex.
Lorain-Elyria, Ohio	Coextensive with Lorain County, Ohio
Los Angeles-Long Beach, Calif.	Coextensive with Los Angeles County, Calif.
Louisville, Ky-Ind.	Consists of Bullitt, Jefferson, and Oldham Counties, Ky. and Clark and Floyd Counties, Ind.
Lowell, Mass.-N.H.	Consists of Lowell city and Billerica, Chelmsford, Dracut, Tewksbury, Tyngsborough, and Westford towns in Middlesex County, Mass.; and Pelham town in Hillsborough County, N.H.
Lubbock, Tex.	Coextensive with Lubbock County, Tex.
Lynchburg, Va.	Consists of Lynchburg city and Amherst, Appomattox, and Campbell Counties, Va.
Macon, Ga.	Consists of Bibb, Houston, Jones, and Twiggs Counties, Ga.
Madison, Wis.	Coextensive with Dane County, Wis.
Manchester, N.H.	Consists of Manchester city and Bedford and Goffstown towns in Hillsborough County; Allentown, Hooksett, and Pembroke towns in Merrimack County; and Derry and Londonderry towns in Rockingham County, N.H.
Mansfield, Ohio	Coextensive with Richland County, Ohio
Mayaguez, P. R.	Consists of Anasco, Hormigueros, and Mayaguez Municipios, P.R.
McAllen-Pharr-Edinburg, Tex.	Coextensive with Hidalgo County, Tex.
Melbourne-Titusville-Cocoa, Fla.	Coextensive with Brevard County, Fla.
Memphis, Tenn.-Ark.-Miss.	Consists of Shelby and Tipton Counties, Tenn.; Crittenden County, Ark.; and De Soto County, Miss.
Meriden, Conn.	Coextensive with Meriden city in New Haven County, Conn.
Miami, Fla.	Coextensive with Dade County, Fla.
Midland, Tex.	Coextensive with Midland County, Tex.
Milwaukee, Wis.	Consists of Milwaukee, Ozaukee, Washington, and Waukesha Counties, Wis.
Minneapolis-St. Paul, Minn.-Wis.	Consists of Anoka, Carver, Chisago, Dakota, Hennepin, Ramsey, Scott, Washington, and Wright Counties, Minn. and St. Croix County, Wis.
Mobile, Ala.	Consists of Baldwin and Mobile Counties, Ala.
Modesto, Calif.	Coextensive with Stanislaus County, Calif.
Monroe, La.	Coextensive with Ouachita Parish, La.
Montgomery, Ala.	Consists of Autauga, Elmore, and Montgomery Counties, Ala.
Muncie, Ind.	Coextensive with Delaware County, Ind.
Muskegon-Norton Shores-Muskegon Heights, Mich.	Consists of Muskegon and Oceana Counties, Mich.
Nashua, N.H.	Consists of Nashua city and Amherst, Hudson, Merrimack, and Milford towns in Hillsborough County, N.H.
Nashville-Davidson, Tenn.	Consists of Cheatham, Davidson, Dickson, Robertson, Rutherford, Sumner, Williamson, and Wilson Counties, Tenn.

Nassau-Suffolk, N.Y.	Consists of Nassau and Suffolk Counties, N.Y.
New Bedford, Mass.	Consists of New Bedford city and Acushnet, Dartmouth, Fairhaven, and Freetown towns in Bristol County; and Lakeville, Marion, and Mattapoisett towns in Plymouth County, Mass.
New Britain, Conn.	Consists of New Britain city and Berlin, Plainville, and Southington towns in Hartford County, Conn.
New Brunswick-Perth Amboy-Sayreville, N.J.	Coextensive with Middlesex County, N.J.
New Haven-West Haven, Conn.	Consists of Clinton town in Middlesex County; and New Haven and West Haven cities and Bethany, Branford, East Haven, Guilford, Hamden, Madison, North Branford, North Haven, Orange, Wallingford, and Woodbridge towns in New Haven County, Conn.
New London-Norwich, Conn.-R.I.	Consists of Old Saybrook town in Middlesex County; New London and Norwich cities and Bozrah, East Lyme, Griswold, Groton, Ledyard, Lisbon, Montville, Old Lyme, Preston, Sprague, Stonington, and Waterford towns in New London County, Conn.; and Hopkinton and Westerly towns in Washington County, R.I.
New Orleans, La.	Consists of Jefferson, Orleans, St. Bernard, and St. Tammany Parishes, La.
New York, N.Y.-N.J.	Consists of Bronx, Kings, New York, Putnam, Queens, Richmond, Rockland, and Westchester Counties, N.Y. and Bergen County, N.J.
Newark, N.J.	Consists of Essex, Morris, Somerset, and Union Counties, N.J.
Newport News-Hampton, Va.	Consists of Hampton, Newport News, Poquoson, and Williamsburg cities and Gloucester, James City, and York Counties, Va.
Norfolk-Virginia Beach-Portsmouth, Va.-N.C.	Consists of Chesapeake, Norfolk, Portsmouth, Suffolk, and Virginia Beach cities, Va. and Currituck County, N.C.
Northeast Pennsylvania	Consists of Lackawanna, Luzerne, and Monroe Counties, Pa.
Norwalk, Conn.	Consists of Norwalk city and Weston, Westport, and Wilton towns in Fairfield County, Conn.
Odessa, Tex.	Coextensive with Ector County, Tex.
Oklahoma City, Okla.	Consists of Canadian, Cleveland, McClain, Oklahoma, and Pottawatomie Counties, Okla.
Omaha, Nebr.-Iowa	Consists of Douglas and Sarpy Counties, Nebr. and Pottawattamie County, Iowa
Orlando, Fla.	Consists of Orange, Osceola, and Seminole Counties, Fla.
Owensboro, Ky.	Coextensive with Daviess County, Ky.
Oxnard-Simi Valley-Ventura, Calif.	Coextensive with Ventura County, Calif.
Panama City, Fla.	Coextensive with Bay County, Fla.
Parkersburg-Marietta, W. Va.-Ohio	Consists of Wirt and Wood Counties, W. Va. and Washington County, Ohio
Pascagoula-Moss Point, Miss.	Coextensive with Jackson County, Miss.
Paterson-Clifton-Passaic, N.J.	Coextensive with Passaic County, N.J.
Pensacola, Fla.	Consists of Escambia and Santa Rosa Counties, Fla.
Peoria, Ill.	Consists of Peoria, Tazewell, and Woodford Counties, Ill.
Petersburg-Colonial Heights-Hopewell, Va.	Consists of Colonial Heights, Hopewell, and Petersburg cities and Dinwiddie and Prince George Counties, Va.
Philadelphia, Pa.-N.J.	Consists of Bucks, Chester, Delaware, Montgomery, and Philadelphia Counties, Pa.; and Burlington, Camden, and Gloucester Counties, N.J.
Phoenix, Ariz.	Coextensive with Maricopa County, Ariz.
Pine Bluff, Ark.	Coextensive with Jefferson County, Ark.
Pittsburgh, Pa.	Consists of Allegheny, Beaver, Washington, and Westmoreland Counties, Pa.
Pittsfield, Mass.	Consists of Pittsfield city and Adams, Cheshire, Dalton, Lanesborough, Lee, Lenox, and Stockbridge towns in Berkshire County, Mass.
Ponce, P.R.	Consists of Juan Diaz, Ponce, and Villalba Municipios, P.R.
Portland, Maine	Consists of Portland, South Portland, and Westbrook cities and Cape Elizabeth, Cumberland, Falmouth, Freeport, Gorham, Scarborough, Windham, and Yarmouth towns in Cumberland County; and Saco city and Old Orchard Beach town in York County, Maine
Portland, Oreg.-Wash.	Consists of Clackamas, Multnomah, and Washington Counties, Oreg. and Clark County, Wash.
Poughkeepsie, N.Y.	Coextensive with Dutchess County, N.Y.

Providence-Warwick-Pawtucket, R.I.-Mass.	Consists of Barrington, Bristol, and Warren towns in Bristol County; Warwick city and Coventry, East Greenwich, and West Warwick towns in Kent County; Jamestown town in Newport County; Central Falls, Cranston, East Providence, Pawtucket, Providence, and Woonsocket cities and Burrillville, Cumberland, Johnston, Lincoln, North Providence, North Smithfield, Scituate, and Smithfield towns in Providence County; and Narragansett, North Kingstown, and South Kingstown towns in Washington County, R.I.; Attleboro city and North Attleborough, Norton, Rehoboth, and Seekonk towns in Bristol County; Plainville town in Norfolk County; and Blackstone and Millville towns in Worcester County, Mass.
Provo-Orem, Utah	Coextensive with Utah County, Utah
Pueblo, Colo.	Coextensive with Pueblo County, Colo.
Racine, Wis.	Coextensive with Racine County, Wis.
Raleigh-Durham, N.C.	Consists of Durham, Orange, and Wake Counties, N.C.
Rapid City, S. Dak.	Consists of Pennington and Meade Counties, S. Dak.
Reading, Pa.	Coextensive with Berks County, Pa.
Reno, Nev.	Coextensive with Washoe County, Nev.
Richland-Kennewick-Pasco, Wash.	Consists of Benton and Franklin Counties, Wash.
Richmond, Va.	Consists of Richmond city and Charles City, Chesterfield, Goochland, Hanover, Henrico, New Kent, and Powhatan Counties, Va.
Riverside-San Bernardino-Ontario, Calif.	Consists of Riverside and San Bernardino Counties, Calif.
Roanoke, Va.	Consists of Roanoke and Salem cities and Botetourt, Craig, and Roanoke Counties, Va.
Rochester, Minn.	Coextensive with Olmsted County, Minn.
Rochester, N.Y.	Consists of Livingston, Monroe, Ontario, Orleans, and Wayne Counties, N.Y.
Rockford, Ill.	Consists of Boone and Winnebago Counties, Ill.
Sacramento, Calif.	Consists of Placer, Sacramento, and Yolo Counties, Calif.
Saginaw, Mich.	Coextensive with Saginaw County, Mich.
St. Cloud, Minn.	Consists of Benton, Sherburne, and Stearns Counties, Minn.
St. Joseph, Mo.	Consists of Andrew and Buchanan Counties, Mo.
St. Louis, Mo.-Ill.	Consists of St. Louis city and Franklin, Jefferson, St. Charles, and St. Louis Counties, Mo.; and Clinton, Madison, Monroe, and St. Clair Counties, Ill.
Salem, Oreg.	Consists of Marion and Polk Counties, Oreg.
Salinas-Seaside-Monterey, Calif.	Coextensive with Monterey County, Calif.
Salt Lake City-Ogden, Utah.	Consists of Davis, Salt Lake, Tooele, and Weber Counties, Utah
San Angelo, Tex.	Coextensive with Tom Green County, Tex.
San Antonio, Tex.	Consists of Bexar, Comal, and Guadalupe Counties, Tex.
San Diego, Calif.	Coextensive with San Diego County, Calif.
San Francisco-Oakland, Calif.	Consists of Alameda, Contra Costa, Marin, San Francisco, and San Mateo Counties, Calif.
San Jose, Calif.	Coextensive with Santa Clara County, Calif.
San Juan, P.R.	Consists of Bayamon, Canovanas, Carolina, Catano, Guaynabo, Loiza, San Juan, Toa Baja, and Trujillo Alto Municipios, P.R.
Santa Barbara-Santa Maria-Lompoc, Calif.	Coextensive with Santa Barbara County, Calif.
Santa Cruz, Calif.	Coextensive with Santa Cruz County, Calif.
Santa Rosa, Calif.	Coextensive with Sonoma County, Calif.
Sarasota, Fla.	Coextensive with Sarasota County, Fla.
Savannah, Ga.	Consists of Bryan, Chatham, and Effingham Counties, Ga.
Seattle-Everett, Wash.	Consists of King and Snohomish Counties, Wash.
Sherman-Denison, Tex.	Coextensive with Grayson County, Tex.
Shreveport, La.	Consists of Bossier, Caddo, and Webster Parishes, La.
Sioux City, Iowa-Nebr.	Consists of Woodbury County, Iowa and Dakota County, Nebr.
Sioux Falls, S. Dak.	Coextensive with Minnehaha County, S.D.
South Bend, Ind.	Consists of Marshall and St. Joseph Counties, Ind.
Spokane, Wash.	Coextensive with Spokane County, Wash.
Springfield, Ill.	Consists of Menard and Sangamon Counties, Ill.

Springfield, Mo.	Consists of Christian and Greene Counties, Mo.
Springfield, Ohio	Consists of Champaign and Clark Counties, Ohio
Springfield-Chicopee-Holyoke, Mass.-Conn.	Consists of Chicopee, Holyoke, Springfield, and Westfield cities and Agawam, East Longmeadow, Hampden, Longmeadow, Ludlow, Monson, Palmer, Southwick, West Springfield, and Wilbraham towns in Hampden County; Northampton city and Belchertown, Easthampton, Granby, Hadley, Hatfield, Southampton, and South Hadley towns in Hampshire County; Warren town in Worcester County, Mass.; and Somers town in Tolland County, Conn.
Stamford, Conn.	Consists of Stamford city and Darien, Greenwich, and New Canaan towns in Fairfield County, Conn.
Steubenville-Weirton, Ohio-W. Va.	Consists of Jefferson County, Ohio and Brooke and Hancock Counties, W. Va.
Stockton, Calif.	Coextensive with San Joaquin County, Calif.
Syracuse, N.Y.	Consists of Madison, Onondaga, and Oswego Counties, N.Y.
Tacoma, Wash.	Coextensive with Pierce County, Wash.
Tallahassee, Fla.	Consists of Leon and Wakulla Counties, Fla.
Tampa-St. Petersburg, Fla.	Consists of Hillsborough, Pasco, and Pinellas Counties, Fla.
Terre Haute, Ind.	Consists of Clay, Sullivan, Vermillion, and Vigo Counties, Ind.
Texarkana, Tex.-Texarkana, Ark.	Consists of Bowie County, Tex. and Little River and Miller Counties, Ark.
Toledo, Ohio-Mich.	Consists of Fulton, Lucas, Ottawa, and Wood Counties, Ohio and Monroe County, Mich.
Topeka, Kans.	Consists of Jefferson, Osage, and Shawnee Counties, Kans.
Trenton, N.J.	Coextensive with Mercer County, N.J.
Tucson, Ariz.	Coextensive with Pima County, Ariz.
Tulsa, Okla.	Consists of Creek, Mayes, Osage, Rogers, Tulsa, and Wagoner Counties, Okla.
Tuscaloosa, Ala.	Coextensive with Tuscaloosa County, Ala.
Tyler, Tex.	Coextensive with Smith County, Tex.
Utica-Rome, N.Y.	Consists of Herkimer and Oneida Counties, N.Y.
Vallejo-Fairfield-Napa, Calif.	Consists of Napa and Solano Counties, Calif.
Vineland-Millville-Bridgeton, N.J.	Coextensive with Cumberland County, N.J.
Waco, Tex.	Coextensive with McLennan County, Tex.
Washington, D.C.-Md.-Va.	Consists of District of Columbia; Charles, Montgomery, and Prince Georges Counties, Md; and Alexandria, Fairfax, Falls Church, Manassas, and Manassas Park cities and Arlington, Fairfax, Loudoun, and Prince William Counties, Va.
Waterbury, Conn.	Consists of Thomaston, Watertown, and Woodbury towns in Litchfield County; and Waterbury city, Naugatuck borough, and Beacon Falls, Cheshire, Middlebury, Prospect, Southbury, and Wolcott towns in New Haven County, Conn.
Waterloo-Cedar Falls, Iowa	Coextensive with Black Hawk County, Iowa
West Palm Beach-Boca Raton, Fla.	Coextensive with Palm Beach County, Fla.
Wheeling, W. Va.-Ohio	Consists of Marshall and Ohio Counties, W. Va. and Belmont County, Ohio
Wichita, Kans.	Consists of Butler and Sedgwick Counties, Kans.
Wichita Falls, Tex.	Consists of Clay and Wichita Counties, Tex.
Williamsport, Pa.	Coextensive with Lycoming County, Pa.
Wilmington, Del.-N.J.-Md.	Consists of New Castle County, Del.; Salem County, N.J.; and Cecil County, Md.
Wilmington, N.C.	Consists of Brunswick and New Hanover Counties, N.C.
Worcester, Mass.	Consists of Worcester city and Auburn, Berlin, Boylston, Brookfield, Charlton, East Brookfield, Grafton, Holden, Leicester, Millbury, Northborough, Northbridge, North Brookfield, Oxford, Paxton, Shrewsbury, Spencer, Sterling, Sutton, Upton, Uxbridge, Webster, Westborough, and West Boylston towns in Worcester County, Mass.
Yakima, Wash.	Coextensive with Yakima County, Wash.
York, Pa.	Consists of Adams and York Counties, Pa.
Youngstown-Warren, Ohio	Consists of Mahoning and Trumbull Counties, Ohio

CURRENT CONSTRUCTION REPORTS

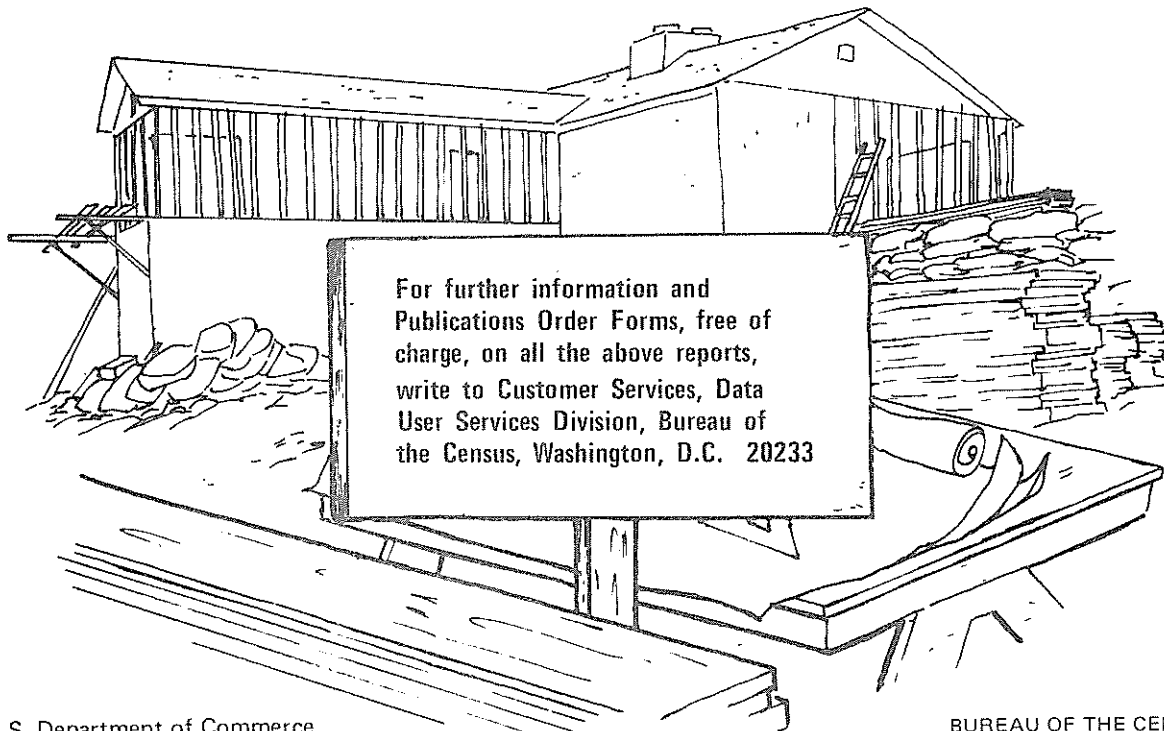
CONSTRUCTION

accounts for approximately
11 percent of the
gross national product!

To assist industry representatives, research specialists, market analysts, and government officials interested in this vital segment of the Nation's economy, the Bureau of the Census issues **monthly, quarterly, and annual** reports on the value of new construction put in place, building permits, housing starts, housing completions, housing sales, and alterations and repairs.

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- C21 - New Residential Construction in Selected Standard Metropolitan Statistical Areas
- C22 - Housing Completions
- C25 - New One-Family Houses Sold and for Sale
- C27 - Price Index of New One-Family Houses Sold
- C30 - Value of New Construction Put in Place
- C40 - Housing Units Authorized by Building Permits and Public Contracts
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