

general combustion of coal. The coal used in Pittsburgh has about 1 to 2 per cent sulfur, while other coal-burning cities in this general area show about the same sulfur content as Pittsburgh's. Almost no oil is used in Pittsburgh, and our gas has practically no sulfur.

It is very noticeable that zinc has increased from 7.5 per cent in 1948 to 13.6 per cent in 1949. It is difficult to say how this happened. No large plant that might put zinc into the atmosphere has been built in the last two years. There is no zinc smelting in Pittsburgh. There is some zinc casting, but from purchased zinc metal only. We still are investigating the sudden increases.

Percentages of Mineral Matter in Dust in the Pittsburgh District—Yearly Average

	Can 1	Can 2	Can 3	Can 4	Can 5	Can 6	Can 7	Can 8	Average of 8 Cans	
	Downtown District Office Buildings and Business	Lawrenceville Light Industry, Nonferrous Furnaces, Paints, Chemicals	Squirrel Hill Residence, No Industry	East End Residence, Shops—Not Much Industry	West End Large Power Station, Chemi- cal and Enameling Plants	Oakland Business, University, Library, Clubs, Hotels	Arlington Heights Heavy Industry, Bessemer Open Hearth, Coking, etc.	North Side Some Light Industry, Resi- dence, Stores, Schools	Total of All Districts, 1949	Total of All Districts, 1948
SiO ₂	13.8	14.6	11.4	11.9	13.3	11.3	13.1	13.8	12.9	12.3
PbO.....	0.1	0.1	0.01	0.09	0.0	0.1	0.0	0.0	0.05	0.005
Fe ₂ O ₃	10.7	11.6	18.5	14.3	8.9	16.8	16.9	7.9	13.2	13.97
Al ₂ O ₃	3.8	4.2	2.5	2.8	2.6	3.8	2.5	3.4	3.2	2.9
TiO ₂	0.4	0.4	0.4	0.6	0.5	0.4	0.3	0.4	0.4	0.7
Cr ₂ O ₃	0.3	0.4	0.6	1.5	1.9	0.9	0.9	0.6	0.9	0.3
V ₂ O ₅	0.4	0.4	0.5	0.7	0.6	0.7	0.5	0.4	0.5	0.09
NiO.....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Trace	0.007
Mn ₂ O ₃	1.1	1.9	1.4	1.8	2.2	1.3	0.7	1.3	1.5	1.0
CaO.....	1.5	1.6	1.2	1.5	3.5	1.3	1.8	1.5	1.7	4.8
MgO.....	0.9	0.07	0.5	0.4	0.9	0.2	1.5	0.4	0.6	1.6
ZnO.....	13.9	11.9	12.4	15.8	13.1	14.5	13.5	13.8	13.6	7.5
SO ₃	19.1	17.7	19.3	19.0	19.0	20.9	16.5	17.0	18.5	18.9
P ₂ O ₅	0.0	0.02	0.03	0.07	0.03	0.05	0.05	0.0	0.03	Trace
CuO.....	0.01	0.0	0.0	0.0	0.0	Trace	0.0	0.0	Trace	Trace
MoO ₃	0.0	0.02	0.0	0.0	0.0	0.0	0.0	0.0	Trace	Trace
As ₂ O ₃	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Trace	Trace

Another thing that the table shows is that the percentages of toxic metals, such as lead, vanadium and arsenic, are very small and below the point of danger to human beings. There are no large industries emitting these in Pittsburgh, only a few small ones, which have been corrected, and today the city shows a pretty good atmosphere.

Chart 1 shows the monthly average of the total dustfall in tons per square mile within the city limits of Pittsburgh for the years 1938, 1948 and 1949. It will be noted that the reduction from 1948 to 1949 was nearly as great as for the 10 previous years.

Chart 2 shows the fixed carbon for the same three years. The fixed carbon in the dust is an indication of the efficiency of the combustion taking place in the city. It will be seen that during the summer months the combustion is better than in