Alundum (Grit 46. Grade P) wheel while a tool was being sharpened had an average of 2,076,989 particles per cubic foot which would have otherwise been thrown into the machine shop atmosphere.

As pointed out by Dr. W. Irving Clark in his paper "Dust Hazards and the Prevention of Injury from the Same" read at a meeting of Government Officials in Industry at Boston, Mass. on May 21, 1931, the most effective method of removing fine particles of dust is by suction applied as close as possible to the point where they are generated and the amount of this suction is great enough to overcome the dispersing action upon the dust of the work being done. The velocity at the air ducts of an efficient dust removing tube should be 1500 linear feet per minute. Quoting Dr. Clark:

> "No matter how well a workman is protected he should be kept under medical supervision and have a periodic examination of his heart and lungs. In addition, the X-ray should be employed freely in order to detect early signs of fibrosis in the lungs and to show any signs of early pulmonary tuberculosis. In my experience with workers exposed to inorganic dust, non-silicous in character, a yearly physical examination with an X-ray every second year after ten years exposure is sufficient but it must be remembered that this is the result of work in a factory where the character of the dust is relatively harmless and where excellent dust removing devices are installed on every machine where it is possible. Where free silica is present in large quantities the examinations should begin after two or three years exposure and an X-ray should be taken every year.

Dr. Clark also states that men who are asthmatic, who suffer from chronic bronchitis, or who have had pulmonary tuberculosis should not work at a dusty job.

VII - HANDLING POWDERED OR PULVERIZED MATERIAL

A large amount of powdered or pulverized materials are used in the treatment of petroleum products and boiler water and in the manufacture of greases and insecticides. In most cases approved respiratory protection is provided and its use required when handling the materials. Exposure to dust is usually intermittent and of short duration. Among the powdered or pulverized materials used in the refining of petroleum products and associated activities are:

A - LIME: Lime is extensively used in the hydrated form and to a much lesser degree as lump quicklime.

1. Hydrated Lime: Used in the preparation of lime soap grease and the manufacture of pressure gun and cup grease; also in the treatment of boiler feedwater to "soften it". It comes in fifty pound paper bags by railroad, usually about 1,000 bags to a car. According to a chemical analysis of a typical sample, hydrated lime contains:

$Fe_2O_3Al_2O_3$.....	0.30	per cent.
CaC.....	73.64	" "
MgC.....	0.93	" "
Insoluble Silica Residue.....	1.01	" "

(Remainder mostly Moisture and Volatile Matter)

From 150 to 350 pounds of lime are used per batch in the manufacture of greases.