NOTICE

**CERTAIN DATA
CONTAINED IN THIS
DOCUMENT MAY BE
DIFFICULT TO READ
IN MICROFICHE
PRODUCTS.**

~~SECRET~~

HW--13655

DE92 005574

2-21-56

This document consists of

1 pages, No. 1
2 copies, Series B

Im

61443

June 8, 1949

This document contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, United States Code, Sections 793 and 794, the transmission or the revelation of which in any manner to an unauthorized person is prohibited by law.

B. Weidenbaum

STUDY OF SAND FILTER EFFICIENCY DATA

Filter efficiencies calculated from activity and flow rate measurements during a 160 day period were the data for this study. Activity measurements were obtained on each sample by (1) field Cutie Pie readings, (2) subsequent Cutie Pie readings in the laboratory, and (3) laboratory analyses, so that in general three independent activity measurements were obtained. Due to evidence of errors in test results at the T Plant (200 West Area), only the data from B Plant are considered here.

The data disclosed a statistically significant decrease in calculated filter efficiency. The inter correlations of the efficiencies calculated from the three sets of measurements ranged around $r = .60$, and each set of efficiencies displayed substantially the same decrease, about .13% over the 160 day period.

The best available estimates of the precision of a single calculated efficiency for each of the three sets were (1) $\pm .29\%$, (2) $\pm .28\%$, and (3) $\pm .27\%$. These figures include both the variation due to sampling and the variation assignable to random errors in activity measurements. An estimate of what the precision of a single calculated efficiency would have been for Cutie Pie measurements if random errors in activity measurements were the only source of variation is $\pm .14\%$.

There was good indication that the efficiency data in the latter half of the period were not as precise as at the beginning of testing. This effect could conceivably cause the appearance of a decrease in efficiency, since efficiencies are so close to 100%. In general, the question remains as to whether the observed decrease in efficiency is due to some changes in sampling and/or measuring, or whether it reflects an actual loss of efficiency of the sand filter.

DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED *EB*

W.C. Healy, Jr. 1
W.C. Healy, Jr.
Statistics Group
Metallurgy & Control

2523
MASTER

**DATE
FILMED
3/2/92**