DEPARTMENT OF NATIONAL HEALTH AND WELFARE

INTRADEPARTMENTAL CORRESPONDENCE

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File No.

Date: Sept. 19, 1949

From - Mr. G.W. Rogers.

Subject: Arsenic Trioxide Contamination in Roaster Smoke at Yellowknife, N.W.T.

The memorandum by Mr. K.G. Christie on the problem of controlling atmospheric polution by arsenic trioxide dust from mine smelters discusses in detail the methods currently employed at other mines. The two common methods namely the electro-static precipitator ("Cottrell" treatment) and filtration through fabric bags, appears to be operating satisfactorily but for the disadvantage of considerable expense. In both cases, the arsenic trioxide removed from the smoke is handled in dry form and can be disposed of by storage under conditions that prevent its drainage away in rain water. The third method is being tested by Consolidated Mining and Smelting Company. This method while much cheaper to operate, yields a liquid suspension which appears to present a serious disposal problem.

Sulphur dioxide is mentioned in connection with the present case as a contaminant but does not appear from the correspondence to be regarded as a major problem at the present time. No doubt it is being kept in mind in the light of experience with it at Trail, B.C., Sudbury and other places.

The present case is an example of a class of problems such as are being encountered increasingly, and are being referred to industrial hygiene agencies for estimation for the hazard involved and advice on control measures. The Donora incident provides a dramatic example of the acute dangers that may arise from atmospheric polution by industry. Other contaminants that have given rise to complaints include fluoride dust, solvent fumes and hydrogen sulphide, and others may be expected to appear from time to time. It appears probable that industrial health organizations will continue to be called upon for assistance in dealing with these problems since the work and experience of such agencies makes such action appropriate. The case for considering these matters as problems for industrial hygiene agencies has been put forward clearly by H.G. Dyktor of the City of Cleveland Air Pollution Control.

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It should be emphasized that in matters of air pollution of which the present is an instance, complex problems will be encountered in most cases. Where air analysis is required, it will have to be done as a rule under particularly difficult circumstances of high dilution and wide variation of atmospheric conditions. In this field there is a lack of satisfactory methods for determining the low concentration of contaminants that will be encountered and therefore considerable work may be required in developing such technics. In addition to atmospheric analyses in the vicinity of an industry suspected of atmospheric polution, it may frequently be necessary to make studies of the industrial processes themselves and of course to consider the possibility of excessive exposures to the employees within the plant.

G.W. Rogers.

GWR/EM.