

UNIVERSITY OF COLORADO
SCHOOL OF MEDICINE AND HOSPITALS
4200 EAST NINTH AVE.
DENVER, COLO.

DEPARTMENT OF MEDICINE
DIVISION OF INDUSTRIAL HYGIENE

September 24, 1941

Dr. Robert A. Kehoe
Kettering Laboratory
University of Cincinnati
Cincinnati, Ohio

My dear Dr. Kehoe:

The Division of Industrial Hygiene has been considering a new method for collecting urine samples for lead determinations in a plant where men are exposed to lead fumes. A place suitable for collecting spot samples is not available, and setting up such a space would involve considerable expense. The management and employees consider the procedure of delivering clean, sterile bottles to workers' homes and then collecting the bottles with urine a few days later as very troublesome and involving danger of contamination or careless handling. We have considered collecting only the morning urine sample. This specimen would be concentrated, and the worker would be least likely to contaminate the sample from dirty clothes or carelessly-washed hands. The worker could void directly into a container prepared in our laboratory and opened only by him and us. We have also considered a procedure similar to that used by Barnes at Westinghouse where the time elapsed between two urinations is noted and concentration expressed as gamma per hour (Journal of Industrial Hygiene 21, 464, 1939). The collecting of such a sample will be done off working premises.

We realize that there is no clear relationship between urinary volume and lead output and that total lead output per 24 hours varies from day to day. However, does the lead output per 8 or 12 hours remain nearly constant? The work of Barnes would seem to indicate that the lead output does remain constant. The question boils down to: What is the diurnal output of lead not in terms of concentration but in terms of total lead excreted? What has been your experience with the total amount of lead excreted in some portion of the 24 hour period as compared with the total that is excreted in 24 hours? If we get a morning urine sample voided after 8 hours of uninterrupted sleep and containing 10 gamma of lead, would we be justified in thinking that the excretion for the 24 hour day was approximately 30 gamma?

I would appreciate any comments or criticism you can offer.

Sincerely,

Leota Pekrul
[Leota Pekrul]

LP:ce

N 6196