

April 4, 1940

Dr. C. F. Yaeger
Remington Arms Company
Bridgeport, Connecticut

Dear Doctor Yaeger:

I am sending to you herewith a report of the results obtained on the eleven men whom you selected.

A careful examination of these data in relation to my memorandum on my observations and recommendations, and in consideration of the other information on these employees, results in several tentative conclusions.

1. It appears that the lead exposure associated with machines and hand casting and with the new type of extrusion and tumbling is of hazardous proportions. The urinary results on [REDACTED] and [REDACTED], indicate that these men are absorbing rather large quantities of lead. This conclusion is further borne out by the fecal results. Here the data on [REDACTED] and [REDACTED] are most instructive. It is conceivable, of course, that the present lead exposure of these men is due to conditions in the room in which they work, rather than to their own jobs, but I call your attention to both the high urinary and fecal results on [REDACTED] as especially significant, in view of our observations on the dust in the air near the tumbling apparatus. [REDACTED] showed a low urinary value but a rather high result in the feces. It will be necessary to see whether the urinary values on this man are consistently low in order to place him in his proper category as to his lead exposure.

2. The lead exposure in the shot tower is of an intermediate magnitude but the results on the group in general are indicative of more exposure than is necessary in connection with this work. The range of urinary values from 0.09 to 0.14 among these men correspond to a situation in which lead poisoning would not be expected to occur frequently, but might occur. The high results in the feces are almost certainly the result of the inhalation of dust, and point to the likelihood of a factor of house-keeping. In any case there is more exposure here than is necessary from the character of the operation.

3. The lead exposure associated with the cutlery hardening process appears to be quite small, and yet one notes that on this one occasion a fecal sample had a high lead content. My guess would be that this was a purely chance affair since the urinary value on this man is quite low. Again we seem to be dealing with lead dusts rather than fume, although it may develop that this is not the case.

4. It is a matter of considerable satisfaction that the results obtained on the lead styphnate charger are of a low order of magnitude. This is what should be the case and I hope that further observations on this man will demonstrate that this is uniformly the case.

It is not safe to assume that subsequent results on these men will reveal exactly the same conditions that are suggested by these analyses. It will be quite interesting to see the extent to which they are confirmed by future analyses. Nevertheless the nature of the results is such as to justify your feeling that certain observations should be made. I believe that this small series of results indicate the necessity for corrective measures of the type which I suggested from my survey of the plant.

In order that we may not have to keep any detailed records, I am sending to you herewith a bill to cover the cost of these analyses, plus express charges incurred by us.

If any question arises in your mind in connection with these analyses, do not hesitate to write to me. Perhaps I should indicate, in connection with these results, that any result in the urine above 0.1 mg. is indicative of significant exposure to lead compounds, while any result above 0.15 can be regarded as hazardous in that such results are compatible with the occurrence of lead intoxication. As to the feces, any result above one-half of a milligram per sample is indicative of abnormal lead intake, and is usually an expression of dust inhalation. In this connection, it is interesting to see that the very point at which we expected to find the most dust, has been responsible for the production of the highest amounts in the feces.

With kindest personal regards,
I am

Sincerely yours,