

October 19, 1944

Lt. E. J. Gillard, USNR
 c/o Dispensary
 Alameda Naval Air Station
 Alameda, California

Dear Lt. Gillard:

We have now completed the measurements of the radon count of two subjects you brought to our laboratory on October 5, 1944. For various reasons the results are not too accurate. One reason was the method of taking the breath sample; another one was that the radium standard used was not very accurately calibrated. However, I trust that our results still give a reasonably good idea of the activities involved.

In the course of our work in setting up a temporary instrument for the purpose of radon measurement in breath samples, we came to the conclusion that the present existing methods could still be improved further. It is desirable to conduct more research on the nature and distribution of radioactivity in human beings.

We also understand that the Navy intends to set up a station on the west coast for the measurements of radon samples. Our laboratory would be interested in setting up a permanent instrument for these measurements. If the Navy would furnish the necessary funds in form of a contract, we propose to set up an ionization chamber somewhat similar to that of the Bureau of Standards that would enable us to make approximately 200 to 300 breath determinations a year.

The approximate expense of this work for a period of a year could be estimated at \$4,000. Half of this would be spent for salaries and half for equipment. The Navy would have to take the responsibility of getting the samples to us as fast as possible.

Our interest in this matter is amplified by the following facts: (1) We have had previous experience in radioactive measurements due to our connection with the 60" cyclotron in Berkeley; (2) we have considerable

BEST COPY AVAILABLE

DOCUMENT SOURCE	
Lawrence Berkeley Laboratory Archives and Records Office	
Records Series Title	<i>Robert H. Div. Scientists Papers</i>
OR DR.	<i>CONTINUOUS PUBLIS, 1943-1948</i>
Accession No.	<i>434-89-0160</i>
File Code No.	<i>10-8-63</i>
Carton No.	<i>37138</i>
Folder No.	<i>SL. RADON MEASUREMENTS</i>
Notes	
Found By	<i>MARY HONES</i>
Date	

COPY

3003842

experience and interest in all kinds of respiratory measurements because of our present contract with the Office of Scientific Research and Development in Aviation Medicine; (3) members of our team have studied the influence of various radiations on the development of cancer and leukemia.

We would be very interested to hear your reaction to our proposal.

Sincerely yours,

CAT:jjr

Cornelius A. Tobias, PhD

Report on the Measurement of Radon Concentration in Breath Samples Taken From:

~~_____~~
~~_____~~

These tests were performed at the request of Lt. E. J. Gillard of the Alameda Naval Air Station.

PRIVACY ACT MATERIAL REMOVED

The tests were carried out in an ionization chamber of 2.8 liters volume. The pulses due to each alpha particle were amplified and counted. The sensitivity of the chamber was calibrated to be 290 counts ^{per liter} c/liter hour. This value is subject to revision pending the arrival of a new accurate radium standard. The background count amounted to 34 counts per hour. Both samples tested showed at the time of the test, a statistically significant difference of less than $.5 \times 10^{-13}$ curies and calculating back to the time these samples were taken, they seemed to differ from the background by less than 10^{-13} curies. The background samples were taken from the breath of individuals who apparently never inhaled radium in their life.

Respectfully submitted,

GERMINE A. TOBIAS, PhD

Robert Weitbrecht

3003844

DOCUMENT SOURCE	
Lawrence Berkeley Laboratory Archives and Records Office	
Records Series Title	<i>Robert H. D. Scientist's Papers</i>
	<i>OF DR. CAROLINE TOBIAS, 1943-1980</i>
Accession No.	<i>424-87-0100</i>
File Code No.	<i>10-X-63</i>
Carton No.	<i>37/38</i>
Folder No.	<i>51. RADON MEASUREMENTS</i>
Notes	
Found By	<i>MARY HONIG</i>
Date	

COPY