

Testimony of Richard Clapp, D.Sc, MPH
Committee on Science and Technology
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I became involved with the Camp Lejeune issue in early 2006 when I was asked by ATSDR to provide epidemiologic advice to the Community Assistance Panel. In the past four and a half years, I have attended meetings of the CAP, meetings of other scientific advisory panels convened by ATSDR whose work focused on epidemiologic and water modeling issues at Camp Lejeune. In addition, I went on a tour of Camp Lejeune in February, 2008 and saw the various contamination sites and base components. Also in 2008, I provided input to the National Research Council committee considering the Camp Lejeune issues, and in 2009, I provided peer review comments to the NRC prior to release of its report.

1. The degree of contamination of drinking water at Camp Lejeune in the years between 1957 and 1985 is the highest I have observed in my career as an environmental epidemiologist. For example, the trichloroethylene concentration found in drinking water from one treatment plant in 1982 was 1,400 parts per billion. This is two hundred and eighty times the current allowable level of TCE in drinking water in the U.S. It is more than five times the highest level found in well water in Woburn, Massachusetts at about the same time as the childhood leukemia cluster was identified in that town.

A member of a 2005 National Academy of Sciences panel assessing the scope of contamination issues at Camp Lejeune described it as the largest human exposure to TCE from drinking water in this nation's history. There were hundreds of thousands of Marines, civilians and dependents exposed to a variety of contaminants over nearly three decades at Camp Lejeune. The historical reconstruction and modeling of the likely extent of the exposure is not completed, but it is already clear that this is an unprecedented situation that demands the level of attention that it is currently getting from the Committee.

2. Once the exposure modeling has been completed, it will be possible to examine the patterns of mortality from a wide range of cancers, including breast cancer, kidney cancer, and other diseases. The final water model can also be used in on-going studies of adverse reproductive outcomes and childhood cancer and in potential studies of other non-fatal conditions such as some cancers, kidney diseases, autoimmune diseases such as lupus and scleroderma, and neurological diseases such as Parkinson's Disease. The mortality study recommended in 2005 is currently underway and will likely be very informative. Additional studies of non-fatal conditions will depend on the outcome of a health survey which is also underway.

3. Some of the steps that might be taken by the Navy or the Dept. of Veterans Affairs to determine presumptive disability in Camp Lejeune veterans have already begun.

According to a presentation made to the Community Assistance Panel earlier this year, the VA considers veterans to have been "exposed" if they were resident at Camp Lejeune during a specific time period. The next requirement under the current VA procedures is a "nexus letter" from a competent medical authority that connects the specific disease or condition claimed by

the veteran to the exposures documented at the base. This currently happens on a case-by-case basis and undoubtedly differs from one region or local office to another.

A more comprehensive approach could be taken along the lines of the Agent Orange Act of 1991. This legislation listed three conditions (two cancers and chloracne) that would be considered service-connected in those veterans who could document service in Vietnam. It also established a process for periodically reviewing the literature about other health effects and adding to the list of Vietnam Agent Orange service-connected diseases or conditions. This review is conducted by independent panels established by the National Academy of Sciences and has resulted in several biannual reports and a longer list of compensable diseases over the past two decades. I have participated in various stages of the Vietnam veterans Agent Orange compensation program and I recommend it for your consideration.

In addition to the above points, I was asked to comment on the 1997 Public Health Assessment of Camp Lejeune released by ATSDR. This was retracted in 2009 once it was revealed that a much larger amount of benzene had been released into the ground than was recognized at the time of the original report. The decision to retract the report was clearly required by the facts, but it would not have been necessary had the full extent of the benzene contamination been known in 1997. The recent information will need to be incorporated into the water exposure model used in the on-going and proposed health studies.