# VA/DOD RESPONSE TO CERTAIN MILITARY EXPOSURES

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THURSDAY, OCTOBER 8, 2009

United States Senate,

Committee on Veterans' Affairs

The Committee met, pursuant to notice, at 9:31 a.m., in Room 562, Dirksen Senate Office Building, Hon. Daniel K. Akaka, chairman of the Committee, presiding.

Present: Senators Akaka, Rockefeller, Brown, Burris, Wyden, Burr, Isakson, and Hagan.

## OPENING STATEMENT OF CHAIRMAN AKAKA

Senator Akaka. The Senate Committee on Veterans' Affairs will come to order. Aloha and welcome to today's hearing of the Senate Committee on Veterans' Affairs. Today we will focus on how the Departments of Veterans Affairs and Defense respond to in-service exposures.

As the Committee charged with oversight of the Department of Veterans Affairs, we must be certain that VA is providing appropriate healthcare and compensation to those who are harmed by exposures while serving in the military. In order for VA to do that, DoD must first determine who was exposed, what they were exposed to and the health consequences of such exposures. The information must then be shared with VA.

Two of the matters we will look at today relate to

claimed exposure of members of the Armed Forces during the current conflicts. The other two involve claimed exposures in the past and relate not only to members of the Armed Forces, but also to family members. These are very different issues and as such, require different approaches.

The question of who might have been exposed in the present conflict, current DoD records should be available to answer that question. If they are not, then the Committee must know why not. For the earlier exposures, DoD must pull together records to provide some estimation of potentially exposed populations. The overall issue of providing intervention on exposures, I believe that it is vital that DoD commit to ensuring that going forward, no one will leave active duty without both a comprehensive physical that might identify any health concerns related to possible in-service exposures and a detailed record of where the individual was stationed.

VA's role is to merge the information regarding potential exposure and the scientific analysis so as to craft an appropriate response. This effort must be earned-- carried out giving the benefit of the doubt to the veterans concerned. In some cases, there has been an absence of reliable information on exposures, including health consequences. In other cases, it is not possible to achieve consensus on the science.

One thing is clear, those harmed by an in-service exposure to environmental hazards should receive a timely and appropriate response from the government. Because Congress is not the ideal forum for seeking to resolve complex and often emotional issues related to potential exposures, we must be sure that DoD and VA are working together effectively on such issues.

I look forward to the testimony of the many witnesses that we have here this morning. Senator Burr, for your opening statement.

OPENING STATEMENT OF SENATOR BURR

Senator Burr. Aloha, Mr. Chairman.

Chairman Akaka. Aloha.

Senator Burr. And good morning. I want to thank you for calling what I think is an extremely important hearing.

I want to welcome our witnesses and to recognize all of the veterans and their family members who have joined us here today for this hearing.

I also want to give special welcome to two North Carolinians, Jerry Ensminger and Shelly Parulis and to thank them for their tireless leadership and advocacy on behalf of the veterans and their families. Your interest in this hearing only serves to underscore the importance of the issues we are discussing today.

Over the years, thousands of military personnel and

their families have been exposed to dangerous chemicals where they were living and working while serving our country. Today we will hear from some of those exposures, including the plumes from an incinerator near a base in Japan, smoke from burn pits being used in Iraq and Afghanistan, dust from a facility in Iraq coated with a known carcinogen, and contaminated drinking water at a base in North Carolina.

I want to express my sincere appreciation to the veterans and families members on our first panel for your willingness to share with us your painful experiences about that exposure. Your perspective will help guide our efforts to find answers for veterans across the country about how these exposures may have affected their health or the health of their loved ones.

More importantly, your testimony will help us determine what steps we need to take to protect and improve the lives of those who have been harmed. Mr. Chairman, my remarks will focus on one exposure issue that is very personal to me, the contaminated drinking water at Camp Lejeune in my home state of North Carolina. I know we will hear from several witnesses about this issue, but I also would like to acknowledge two former Marines, Jerry Ensminger, who is here today, and David Briscoe, who could not be here today.

They both lived at Camp Lejeune during the years that

the water was contaminated and have their own painful stories. David, who lived in Camp Lejeune in the 1980s, was later diagnosed with cancer of the hard pallet and underwent treatment that reduced his ability to eat, speak and work. Jerry's daughter, who was born at Camp Lejeune in 1975, was diagnosed with leukemia at age six and tragically died three years later.

Jerry, I commend you for your personal strength in the face of such tragedy and appreciate you being here today. Unfortunately, Jerry and David's heart wrenching stories are not unique for veterans who served on Camp Lejeune between 1957 and '87. The residents of Camp Lejeune didn't know it at the time, but the water they were drinking, cooking with, bathing in, contained harmful chemicals, including TCE, PCEs, benzenes and vinyl chloride, which are known or probably human carcinogens.

Some of them are now living with rare cancers, like one of our witnesses today. Mark Partain is a son of a Marine, a former resident of Camp Lejeune and one of over 20 former Lejeune residents diagnosed with a rare male breast cancer at an unusually young age. He was just 39 years old. This condition usually strikes less than 2,000 men each year and most are over the age of 55.

Although a number of studies have suggested a possible link between the water and Camp Lejeune and these types of

conditions, we still do not have the answers about what made Jerry's daughter or Mike or David sick or what has caused our former Lejeune residents to become ill. The government's role in scientific discovery is clear; Camp Lejeune was designed by the EPA as a national priority list site.

Under Title 42 of the U.S. Code, the Agency for Toxic Substance and Disease Registry is conducting a number of studies of the Camp Lejeune contamination. These studies include sophisticated computer modeling and future mortality and health surveys. It is unfortunate that ATSDR was not invited to provide a witness for this hearing so that they could respond to testimony being given by our witnesses and answer questions from this Committee.

Mr. Chairman, I hope in order to strike a balance of the scientific opinion on what I think is an important issue, I would ask that ATSDR's official response to the National Research Council's report on Camp Lejeune be included in the record today.

Chairman Akaka. It will be included in the record.

(The information follows:]

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Senator Burr. I thank the chair for that. We have an obligation to figure out how much of these dangerous chemicals veterans and their families were exposed to at Camp Lejeune and what the impact these exposures had potentially on their health. For these patriots who have endured unbearable heartache and suffering, they deserve no less than our best effort to provide them with the answers about why they are sick.

Also we must always make sure that the claims these families have pending are not prematurely denied by the government before science has had the opportunity to provide more answers, let me stress, before science has had the opportunity. But while we wait for science, we must deal with the fact that many of these exposed veterans and their families continue to suffer from devastating conditions.

It is simply not right for us to continue to tell our veterans and their families just wait for another study. They have already waited two decades. We owe them much more than that. That is why I have introduced, along with my colleague from North Carolina, Senator Hagan, legislation, the Caring for Camp Lejeune Veterans Act. That is 1518, which would allow veterans stationed at Camp Lejeune while the water was contaminated to get medical care from the VA.

Perhaps more importantly, it would also allow the VA to treat their families for conditions associated with exposure

to contaminated water. Providing health care to veterans and their families would be one step towards meeting our moral obligation to those who have put more at risk. As we will discuss today, there are many other veterans and their families who may have been exposed to dangerous chemicals in other places around the world. For all of them, it is important that we have a framework in place to determine in a fair and hassle free and timely matter what benefits and services they need and deserve.

To that end, we will have a candid and productive discussion today about what is currently working well and where improvements are needed. Mr. Chairman, for veterans and their families put at risk by exposure, whether in Japan, Afghanistan, Iraq or North Carolina, we have a solemn duty to take care of those who were put in harm's way while serving this nation. I hope we will work together, and I think we will, to provide these veterans, their families with the answers they deserve and more importantly, the help they need.

I thank the chair.

Chairman Akaka. Thank you very much, Senator Burr. Now we will have the opening statement of Senator Brown.

OPENING STATEMENT OF SENATOR BROWN

Senator Brown. Thank you, Mr. Chairman, and Ranking Member Burr and Senator Hagan, too, for your good work on

this very important issue.

Today's hearing is about toxic exposure, elusive science and earned compensation. It is about our service members and their families and how we will resolve the difficult challenges that exposure issues present. When there is doubt, we must take the side of the service member.

Yesterday I met with Mary and Jeff Byron. Jeff is a former Marine who served at Camp Lejeune from 1982 to 1985. Mary and Jeff were raising--just were at Camp Lejeune when their first baby was born and I believe second child was born. We discussed their family and the impact living at Camp Lejeune--the impact that living at Camp Lejeune had on this family's lives through that generation and even the next generation.

Jeff is one of more than 5,900 Ohio veterans whose families are part of the Marine Corps Registry for potential exposure at Camp Lejeune. Jeff and Mary are here today. At one point, Jeff, in recalling what was--had transpired with his family during their time at Camp Lejeune and soon after and the problems that his family was facing, told me he turned to his wife and said, what is happening to our family?

Connecting the dots between service and exposure is a complicated process. Helping these families should not be complicated. In tough cases like this, we have to ask

ourselves, what is the greater sin? Do we refuse benefits to a service member or a veteran or a service member's family or a veteran's family who may be suffering from service-connected exposure to cancerous toxins? Or do we provide benefits to a service member or veteran or service member's family or veteran's family whose health care challenges may not be service connected?

Do we save a few bucks or do we save a few lives? Scientific certainty should not trump human decency. There is another point here that cannot be overlooked. Our military now is working to connect the dots, but private contractors are not. From the exposures of Camp Lejeune to the burn pits in Iraq, to the emissions at Atsugi Naval Air Station, we found a military working to find the answers.

It has not been the smoothest journey to where we are today. For too long, the Department of Defense fought and denied exposure claims, but the military again finally now is working with the VA to serve the best interests of our service members, our veterans and I hope their families.

I spoke this week with the Marine commandant, General James Conway, who has pledged his cooperation and who has pledged that the military will do much better at meeting its obligations than it has in the past. This cooperation though, has not been the case with the sodium dichromate exposure at the Qarmat Ali Water Treatment Plant.

So what is the difference? The difference is the water treatment plant was run by a private contractor, KBR. In a recent hearing, soldiers testified they were never offered any kind of protective clothing or masks or other protections by the company. They were never told about the presence of one of the most hazardous carcinogens. Hexavalent chromium is a general toxic carcinogen and inhalation leads to lung cancer, yet the company either dismissed these concerns or worse, intentionally mislead our military personnel. It is a lousy way to turn a profit.

So while I am not happy at the speed and the progress of the Department of Defense and the VA, I am outraged at the behavior of private contractors, especially KBR. We should all be outraged by the behavior of KBR and like-minded contractors who take the money from our taxpayers, who take the money from our military, but fail its members. That is not the focal point of this hearing, but it is an issue Congress must confront.

As we consider how to ensure members of our military who have been harmed by environmental hazards to make sure that we--consider how to ensure that they receive the benefits they deserve, we should learn from the rocky road former nuclear workers have been forced to travel to prove they have been harmed by their jobs.

The Department of Labor is charged with addressing

work-connected health care issues affecting our former nuclear workers, many of whom are in my home state of Ohio.

It has been an unjustifiably steep, red-taped-ridden battle for these workers and I welcome my colleagues' assistance and efforts to improve that program. We must not repeat the mistakes of that program as we address the concerns of service members.

We must cut through the bureaucracy and focus on delivering both help and hope to men and women and their families who served our nation and now are suffering because of it. That is why the work of this Committee and the leadership of the chairman and the ranking member on this issue are so important. That is why the testimony of our witnesses is so vital and appreciated.

Thank you.

Chairman Akaka. Thank you very much, Senator Brown. Senator Isakson, your opening statement.

OPENING STATEMENT OF SENATOR ISAKSON

Senator Isakson. Thank you very much, Mr. Chairman. In deference to the witnesses, I will be very brief. But I want to thank you at the outset for calling what I consider to be a most important hearing and I look forward to hearing the testimony of each and every witness.

I would like to thank each of the witnesses for helping to shed light on this very serious matter. I would

particularly like to thank the witnesses who will be sharing their deeply personal stories. You not only put a face on the consequences of these exposures, but also help us as we determine the correct path for us to follow. I thank you for your service to our country and I thank you for being here today to testify.

Chairman Akaka. Thank you very much, Senator Isakson.

Senator Burris, your opening statement.

OPENING STATEMENT OF SENATOR BURRIS

Senator Burris. Thank you, Mr. Chairman. I would like to also thank the witnesses for holding this hearing on the important issue of exposure to environmental hazards to our service members. When we ask our brave men and women of this country to risk their lives in service to this country, the country in turn has an obligation to protect them from exposure and environmental hazards and provide information and treatment.

I am deeply concerned whether there have been adequate studies and reporting of environmental hazards in places abroad where we are fighting two wars and in other military bases both abroad and here in the United States. In addition, as this body debates the reform and expansion of our nation's health care system and the quality of care that is provided for our citizens, we need to ensure that our soldiers and veterans receive the care that they need from

health problems resulting from these exposures.

I want to thank our witnesses today, some of them who have experiences or of loved ones who had experiences with severe problems that are caused by some of these hazards. So I will have a few questions, Mr. Chairman, after we finish our statements. Thank you.

Chairman Akaka. Thank you very much, Senator Burris. I see my distinguished colleague, who like our ranking member, represents the State of North Carolina. Senator Hagan has joined us. I would like to invite her to share a statement at this time.

OPENING STATEMENT OF SENATOR HAGAN

Senator Hagan. Thank you very much, Mr. Chairman. I would like to begin by thanking you for holding this important hearing and for doing me the courtesy of allowing me to make a brief statement concerning an issue that is so important to me and to many of my constituents.

I also want to thank the ranking member, Senator Burr, for his leadership on this issue. He has been discussing this issue of water contamination at Camp Lejeune for many years and since I have been sworn in, he and I have worked very closely together on this issue. I have greatly appreciated his guidance and tenacity in pursuing closure for the affected families.

Mr. Chairman, between 1957 and 1987, Marines and their

families at Camp Lejeune drank and bathed in water that was contaminated with toxins at concentrations up to 280 times what is currently considered safe by the Environmental Protection Agency. My heart certainly goes out to the Marines and their families who were exposed and affected.

A compelling CNN piece just last month highlighted cases of former Marines and their families who have been diagnosed with male breast cancer. Today there are over 40 individuals of those cases, all of whom at one point or another served on base or lived at Camp Lejeune during the contaminated years. These service men and women, as well as so many, have spent their careers working to successfully finish the mission that they start. I think it should be our mission to get these families complete answers.

Marines and their families who were exposed to dangerous chemicals over several decades deserve to know if this exposure had an effect on their health. They cannot get closure until the remaining CDC studies, which are in progress, are complete, and these CDC studies are to be done by the Agency for Toxic Substances and Disease Registry, the ATSDR. I am looking forward to working with the Navy and the Marine Corps to fully fund these human health and water modeling studies which will hopefully give us answers. But it has received a lot of attention.

I would like to address the conclusion of the National

Academy of Science literature review which was recently completed. Well respected scientists from across the country, including officials at the ATSDR, have openly challenged the validity of this review. This review significantly downplayed the level of exposure Camp Lejeune residents had to TCE and PCE chemicals found in the Camp Lejeune water--potable water system and it also did not take into account the EPA's draft health risk assessments for these chemicals. It also significantly downplayed the adverse health effects resulting from such exposure and did not assess scientific associations between benzene and vinyl chloride in adverse health effects.

Benzene, a chemical, was leaking into the water supply at Camp Lejeune at a rate of 1,500 gallons per month. Furthermore, we all understand that there were no specific federal regulatory standards regarding volatile organic compounds until the late 1980s. However, I think it is important to note that the Navy and Marine Corps had their own regulations regarding the operation of drinking water systems and the disposal of contaminants and hazardous waste.

It is impossible to know with 100 percent certainty what happened over 25 years ago, but I think it is important that the most comprehensive understanding possible of the actions that were taken and not taken during the

contamination period, the origins of the contamination, as well as where the contamination sites were located, be given. Even more importantly, I believe that this information must be explained to the public in an understandable fashion.

I believe that Congress, the Navy and the Marine Corps need to work together to develop an action plan to take care of the victims that were exposed to this contaminated water.

While this is happening, I encourage the chairman and the Committee to consider legislation introduced by Senator Burr, which I co-sponsored along with five other senators. It provides veterans and their families who are suffering from adverse health effects associated with Camp Lejeune's contaminated water to obtain health care from the VA.

This issue is not just North Carolina. These men and women are living all over our country now. We cannot leave these families with mounting medical problems and half answers.

Thank you, Chairman Akaka and Senator Burr for the opportunity to speak today.

Chairman Akaka. Thank you very much, Senator Hagan. I am delighted to have my friend from Oregon here, Senator Wyden. Senator Wyden.

OPENING STATEMENT OF SENATOR WYDEN

Senator Wyden. Thank you very much, Mr. Chairman, for

your thoughtfulness, and Senator Burr, and for the opportunity to spend a few minutes here. I would ask unanimous consent that my full remarks go into your record and would just touch on a couple of issues this morning.

Chairman Akaka. Without objection, it will be included in the record.

Senator Wyden. Mr. Chairman and colleagues, I am very glad that you are looking at this critically important issue. National Guard soldiers from my home state have told me about their exposure to hexavalent chromium at Qarmat Ali in Iraq. The soldiers have told me about how their rooms were filled with toxic smoke from open air burn pits and they have told me about their struggles with the agency trying to secure benefits and health care. So I very much appreciate, Mr. Chairman, your putting a spotlight on this issue, and particularly working to make sure that the Department of Veterans Affairs gets our veterans the benefits they need and that they are treated with respect and attention.

Mr. Chairman and colleagues, I think we all understand that nobody at the VA gets up in the morning and says, I want to spend my day being rotten to veterans. They all mean well. They care about our veterans deeply, but so often, the system can be inflexible and our veterans get caught up in red tape.

On September 19, I received what I felt was a positive letter from then Secretary of the Army Pete Geren, who told me, I quote here, "the VA is working internally to use the registry and the list of possible medical issues from chromium exposure to establish a service connection."

Yet because a service connection has not been established by DoD and the VA, some of our veterans get caught in this morass of red tape when they ought to be receiving treatment for respiratory problems, skin and eye problems and even cancer that they picked up as a result of their exposure to chromium.

One Oregon National Guard member was told, and I quote here, "Exposure is not a disability, nor does the VA pay compensation for exposure." And then the Guard member was told to go out and produce 15 pieces of evidence if he hoped to receive any kind of treatment for his illness. I think our colleagues, whether you are a Democrat or Republican, would agree that veterans should not be subjected to this kind of merry-go-round approach.

It is not enough for the agencies to say they want to help and then when the soldiers have to find their way through the bureaucracy there is nobody there to get them their benefits. They face enough when they go into combat. They should not have to battle their government to get medical care when they return home.

I know you are going to hear from a variety of very thoughtful witnesses this morning that is going to talk about what is needed to make sure our veterans are properly cared for. Mr. Chairman and colleagues, thank you very much for the chance to come and offer the vantage point from some Oregon National Guard members who have reported to me. We have one of the highest levels of participation in the Guard in the country. We feel very strongly in our state about ensuring that they receive adequate medical care when they have been injured when in harm's way and we thank you for your thoughtfulness to be able to come and spend a few minutes and lay out their concerns.

[The prepared statement of Senator Wyden follows:]

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Chairman Akaka. Thank you very much, Senator Wyden, for your statement. I want to now welcome our first panel this morning. Our first witness is Mike Partain, who is testifying in regard to Camp Lejeune. We have Dr. John Nuckols, who is a professor at Colorado State University and a member of the Committee on Contaminated Drinking Water at Camp Lejeune.

Next we have Stacy Pennington, sister of SSG. Steve Ochs, who was exposed to burn pits and died in 2008. She is followed by Dr. Robert F. Miller, who is an associate professor of pulmonary and critical care medicine at Vanderbilt University Medical Center and has studied health effects of environmental exposures like burn pits.

We also have Laurie Paganelli, who will testify in regard to the Atsugi Naval Air Facility in Japan. She will be followed by Dr. Charles Feigley, who is a professor at the University of South Carolina and is also the chair of the subcommittee on the Atsugi incinerator for the National Resource Council.

Our final witnesses are Dr. Herman Gibb, who will testify in regard to health effects related to Qarmat Ali, and Russell Powell, who will testify about his experiences at the same facility. I want to thank the Veterans of Foreign Wars for making it possible for Mr. Powell to share his story with the Committee today.

I thank you all for being here this morning. Your full testimony will, of course, appear in the record. Mr. Partain, will you please begin?

STATEMENT OF MIKE PARTAIN

Mr. Partain. Good morning, Mr. Chairman.

Chairman Akaka. Good morning.

Mr. Partain. I would like to thank the chairman--try this again. Good morning, Mr. Chairman. I would like to thank you, the ranking member, and members of the Veterans' Affairs Committee for permitting me to testify this morning.

My name is Michael Partain and I am son and grandson of U.S. Marine Corps officers. My parents were stationed aboard Marine Corps Base Camp Lejeune shortly after my father graduated from the United States Naval Academy. My father chose to live in base housing because he trusted the Marine Corps would protect his family.

I was conceived and carried while my parents lived on the base. During the time of my mother's pregnancy, we were exposed to high levels of tetrachloroethylene, trichloroethylene, dichloroethylene, benzene and vinyl chloride in the tap water provided to my family by the Marine Corps.

I was born at the base naval hospital in January of 1968. Two years ago, I was diagnosed with male breast cancer at the age of 39. It is rare for this disease to strike men, especially young men such as myself. In fact, I am one of 40 men who share the unique commonality of male breast cancer and exposure to contaminated tap water aboard

Camp Lejeune. Fortunately, I have health insurance which provides treatment for my disease. Even then, my battle with cancer has been a traumatic, emotional, physical and financial ordeal for my family.

Over the past two years, I have been in contact with numerous other families who are suffering from their illnesses related to their exposures at Camp Lejeune. Many of these people do not have adequate health care or are now uninsurable because of their diseases. These families supported their Marines in body and spirit and now they have been left behind to suffer and die by the very organization they trusted and served faithfully.

Beginning on 31 October 1980, Navy and Marine Corps officials received what would later become a litany of warnings that the base's drinking water supply was highly contaminated with chlorinated hydrocarbons. The United States Army Environmental Hygiene Laboratory was tasked to analyze the base's tap water for trihalomethanes in preparation for a new EPA safe drinking water regulation. The Army lab warnings were repeated three more times between December 1980 and March of 1981.

For some unknown reason, the Army lab further spelled out the issue by placing the word "solvents" with an exclamation point at the end of their March 1981 warning. Curiously, this key word was omitted from the 2007

Government Accountability Office review of the Camp Lejeune drinking water contamination. There was no documented action taken to identify the source of the contamination at that time.

On 6 May, 1982, Mike Hargett, co-owner of Grainger Laboratory, phoned the base chemist, Elizabeth Betz, and advised her that PCE and TCE contamination was found in the tap water samples sent for TTHM analysis. Ms. Betz then notified her immediate supervisors. A week later, Ms. Betz was summoned to a briefing involving the base's facilities command staff. That is documented in her memorandum for the record. "It appeared to me that they had not been informed about the findings. I did not inform them."

Further testing revealed continued contamination. Grainger then wrote the commanding general of Camp Lejeune.

"Interferences which were thought to be chlorinated hydrocarbons entered the quantization of certain trihalomethanes. These appear to be at high levels and hence, more important from a health standpoint than the total trihalomethane content. For these reasons, we called the situation to the attention of Camp Lejeune personnel."

The Grainger memo documented in writing that the contamination present in the potable water systems aboard the base was a serious issue. Grainger's chemist correctly concluded that the contaminants were located in the well

fields for both Tarawa Terrace and Hadnot Point. No further action was taken by the Navy or Marine Corps officials.

Several months ago, I spoke to Mr. Hargett, former co-owner of Grainger Lab. He indicated to me that he had secretly tipped off the State of North Carolina that there was a problem with the TTHM testing program at the base. Shortly after this revelation, a State of North Carolina environmental engineer wrote to the base's assistant chief of staff facilities requesting the Grainger analytical data sheets which contained their notations of the contamination.

This request was ignored and then denied. It was not until 30 November 1984, that the Marine Corps officials began to finally close the contaminated wells at Camp Lejeune. Two weeks later, an article appeared in the base's newspaper. The article advised residents and personnel that four wells were removed from service due to traces of organic compounds which were unregulated by the Safe Drinking Water Act.

What the article failed to mention was that on 6 July, 1984, Hadnot Point Well HP-602 was sampled and found to be highly contaminated with benzene. The base environmental engineer also failed to disclose to the readers the presence of a 20,000- to 30,000-gallon unreported and unremediated fuel leak dating back to 1979 which occurred on Hadnot Point. This fuel plume was in the groundwater and was 15

feet thick.

The minimization and deception did not end there. On 30 April, 1985, the commanding general of Camp Lejeune advised the residents of Tarawa Terrace that two wells were taken offline because of minute trace amounts of--several organic chemicals were detected in the water. In September of 1985, the base environmental engineer, Robert Alexander, was directly quoted in a newspaper that people had not been directly exposed to pollutants.

In November of 1985, base officials, including Robert Alexander, informed the EPA that the contamination had not reached the distribution plants. What the Marine Corps has failed to disclose to members of Congress, the media, the public, was the Marine Corps was in violation of their own orders which date back to 1963. These orders, if followed, would have prevented most of the human exposures of Camp Lejeune.

One of these orders is the Bureau of Medicine and Surgery instruction known as BUMED 6240.3B. The purpose of the BUMED was to establish standards for water, for drinking throughout the naval establishment, including Camp Lejeune.

"Substances which may have a deleterious physiological effect or for which the physiological effect are not known shall not be introduced into the system in a manner which would permit them to reach the consumer."

There is also a Marine Corps order that specifically addresses safe disposal of chemicals on the base. In the interest of time, I will not go into the details during my opening statement. However, I am prepared to answer questions on both these documents.

In closing, I note at the table is a former member of the National Resource Council Committee which produced the report that downplayed the health effects resulting from our exposures at Camp Lejeune. I also note with great concern, as Senator Burr indicated, the ASTDR, the agency statutorily tasked by Congress to assess health effects for national priority sites such as Camp Lejeune, is not represented in this hearing.

The NRC's report contains numerous flaws, including the Committee's failure to assess our exposures to benzene and vinyl chloride. I respectfully submit that the Senate Veterans' Affairs Committee seek out the professional recommendations of the project manager in charge of ATSDR's Camp Lejeune studies.

I thank you for your time.

[The prepared statement of Mr. Partain follows:]

Chairman Akaka. Thank you very much, Mr. Partain, for your testimony. Dr. Nuckols, will you please, again with your testimony.

STATEMENT OF JOHN R. NUCKOLS, PROFESSOR, DEPARTMENT OF ENVIRONMENTAL AND RADIOLOGICAL HEALTH SCIENCES, COLORADO STATE UNIVERSITY

Mr. Nuckols. I believe a copy of testimony has been submitted by the National Research Council of my full testimony and I have prepared a summary in my own hand. I would be happy to share it with the Committee if you would like a paper copy.

Chairman Akaka. Thank you.

Mr. Nuckols. In 1984, evidence of contamination of the water distribution system serving the Tarawa Terrace area within Camp Lejeune, North Carolina was discovered. It was one of six water distribution systems serving different areas on the camp.

Since that time, contamination of another water distribution system serving the Hadnot Point area and contamination of the natural source for most--all water systems on the base, the Castle-Hayne Aquifer, has been documented. Many former residents and employees of the base have raised questions about whether health problems they or members of their families have experienced could be related to exposure to the contaminated water.

At the request of Congress, the Navy sponsored a study by committee of the National Research Council to review the scientific evidence on associations between adverse health

effects and historical data on pre-natal, childhood and adult exposures to contaminated drinking water at Camp Lejeune.

In September 2007, the NRC convened a committee of experts in epidemiology, toxicology, exposure analysis, environmental health, groundwater modeling, biostatistics and risk assessment for this purpose. In or about August 2009, the NRC review document, Contaminated Water Supplies at Camp Lejeune, Assessing Potential Health Effects, was published.

I served as one of the volunteers on the NRC committee, primarily as the chair of a subcommittee that was responsible for chapter two, Exposure to Contaminants in Water Supply at Camp Lejeune. In that chapter, we described the scenarios of exposure to contaminants in the water supply and identified gaps in understanding of exposure to people who lived or worked there.

There were three other working subcommittees, epidemiology, toxicology and risk communication. The internal process used by the committee was as follows. We gathered information on the chemicals present in the Camp Lejeune water supply, including magnitude of contamination, geographic extent and timing. We ascertained reported health concerns from people who lived or worked at Camp Lejeune.

Based on published toxicology and epidemiology studies, we gathered scientific evidence of causation or association of diseases with the predominant chemical contaminants that were present in the water supply and compared these to health outcomes reported by the affected population. We ascertained whether conclusions could be drawn that any adverse health outcomes could be attributed to the water contaminants at Camp Lejeune and whether additional health studies would be more likely to provide such a definitive conclusion.

And finally, we made recommendations as to further actions concerning studies of adverse health effects and water contamination at Camp Lejeune. In short, these recommendations were that new health effects studies of persons who lived or worked at Camp Lejeune and their families should be undertaken only if their feasibility and promise of providing substantial improved knowledge are established in advance.

Second and foremost, the decisions regarding the appropriate policy response to health concerns about exposure to contaminated water at Camp Lejeune should not be delayed or await the results of epidemiological studies that are in progress or planned. My testimony today is derived strictly from the content of the report by the NRC Committee on Contaminated Drinking Water at Camp Lejeune, which I

fully support.

Thank you for your invitation and your attention.

[The prepared statement of Mr. Nuckols follows:]

Chairman Akaka. Thank you very much, Dr. Nuckols. Now we will hear the testimony from Ms. Pennington.

STATEMENT OF STACY PENNINGTON, SISTER OF SSG. STEVEN GREGORY OCHS, IRAQI OPERATION FREEDOM AND OPERATION ENDURING FREEDOM VETERAN

Ms. Pennington. Aloha, Honorable Chairman Akaka.

Chairman Akaka. Aloha.

Ms. Pennington. And honorable members of the Committee. Good morning. It is an honor to be sitting before the United States Senate Committee on Veterans' Affairs. Thank you for your leadership acknowledging the exposures happening to our troops.

I have been asked to speak to you from a victim's standpoint of the effect of exposure to dangerous toxins produced by burn pits that are used to dispose of such items as medical waste, fuel, plastic, vehicles, trash and ammunition. I sit here in front of you with heavy heart to share the stories of two families who know how it feels to have a burning pit in our souls.

My brother, SSG. Steven Gregory Ochs chose the military as his career, serving our country for 14 years. SSG. Matt Bumpus served his country for eight years and nine months. Both were called to fight in Operation Iraqi Freedom. Staff Sergeant Ochs served three tours in 12- to 15- month intervals from 2003 to 2007, and Staff Sergeant Bumpus served his tour onset of the war in 2003. Both of these brave soldiers you see before you dodged bullets, mortar

attacks, roadside bombs, suicide bombers, yet eventually their tours would take their lives.

The ultimate sacrifice for a soldier for his country is death. However, their deaths did not show up in the manner you may assume. In Balad is the site of the infamous, enormous burn pit that has been called by Darrin L. Curtis, lieutenant colonel of the United States Air Force of Bioenvironmental Engineering and Flight Commander, as the worst environmental site he had ever visited.

Staff Sergeant Ochs and Staff Sergeant Bumpus were both stationed in Balad and war, as strategic as it is, followed them home. Death lay dormant in their blood and waited for them to return safely home and into the arms of their loved ones. And like every silent ticking time bomb, it eventually exploded.

On September 28, just months after Steve's return home from his third tour, he was diagnosed with acute myeloid leukemia, also known as AML. He spent the next 10 months as a patient, more like a resident, at Duke University Hospital. Doctors at Duke said his aggressive form of AML was definitely chemically induced and like Steve, both agreed it was due to the exposures he experienced while in Afghanistan and Iraq.

However, the doctors refused to go on record, citing as the reason that they could not prove it. The aggressive AML

that Steve endured was similar to bullets ricocheting in the body, causing tortuous pain. The graphic images embedded in my mind are Steve's last screams for air as he was rushed into ICU. Forgive me.

Steve waved goodbye to my husband. Steve, with very little strength, his last words to me was, I love you, Sis. And my mom kissed his forehead and said, we will see you when they get you comfortable. Not five minutes later, while we were in ICU waiting room, the nurse came in to tell us that Steve went into cardiac arrest and they were working to revive him now. My mom ran into ICU. She fell to her knees as she realized her son was dying.

Screams filled the air as we begged God to keep Steve here with us. We know Steve heard us as tears were in Steve's eyes. Doctors and nurses pumped on Steve's chest trying to revive him, but I knew immediately he was gone. His spirit that surrounded my dear sweet little brother of 32 years old, was gone.

We were left alone with Steve's body for hours as we were all in pure shock. My mom looked upon my brother's face and wiped away the tears puddled in his eyes. And at that very moment, our lives were changed forever. Steve died on July 12, 2008.

Two weeks later on the opposite side of the coast, Staff Sergeant Bumpus would succumb to the same fate. For

Staff Sergeant Bumpus, the ticking time bomb exploded with a vengeance on July 31, 2006. Matt was rushed to the hospital by ambulance with acute appendicitis. In Matt's own words, "the next thing I remember is hearing that I had been diagnosed with AML."

Doctors declared that there was chromosome damage due to exposures he must have come in contact with while in Iraq. Matt ended his prestigious service to the Army one short year before the war zone--chemical warfare showed signs of its presence. As if this was not enough suffering, Staff Sergeant Bumpus' family was met by the VA with harsh claims of denial to benefits. This battle continues to this day as Lisa, Staff Sergeant Bumpus' wife is left alone with two small children to raise with no military or VA benefits for her family.

The aggressive assault of the AML in Matt's body was taking claim. Jo, Matt's mother, recalls the haunted look in Matt's eyes as he revealed to her the AML invasion was back. Matt's mother never forgot the discouragement and sadness that overwhelmed Matt as he realized that promises he made to his wife and children to provide for his family, to love and protect them, and that his sacred word was broken.

He knew now that the battle was over and he would be leaving his family behind. Tuesday, July 29, 2008, Matt

once again entered the hospital with fever and septic infection that discharged throughout his entire body. Doctors notified the family that it would just be days before his demise.

Matt was heavily sedated as the pain and incubation was unbearable. Nate, Matt's 10-year-old son, bravely entered his father's room to lay on his daddy's chest to say his final goodbye. Nate curled up by his dad and cried and cried and despite Matt's heavy sedation, Matt too was crying. Matt being a devoted Christian, appropriately passed away on a Sunday morning surrounded by his wife, mother, father, sister as they expressed to Matt their everlasting love.

They too were in shock and stayed with Matt's body as they realized and were overwhelmed that Matt was not coming home. Matt died on August 3, 2008. You have to know that while serving in Iraq, both of these soldiers complained of ailments such as colds, major fatigue, headaches, sinus problems, loss of hearing, and Staff Sergeant Ochs contracted TB while in Afghanistan due to the massive exposure to dead bodies.

Both men were of strong stature, standing over six feet tall, weighing over 200 pounds and both men were the perfect image of Army-strong soldiers. Two men, brave, who served their country courageously and committed to the cause,

dedicated to our country and entrusted the military.

Grief, sadness and depression have gripped our entire families. Their wives are emotionally broken and incomplete, their mothers are emotionally unstable and engulfed with grief and their fathers are lost and worst of all, their children are fatherless.

Sadly, Steve and Matt are not alone. Laura Bumpus and I have spoken to over hundreds of families suffering the same fate. We are aware of hundreds more suffering similar ailments. These men are casualties of war. They deserve the respect of that fact to reflect on the Army records.

My family, the Ochs family, proudly displays our gold pin presented to us by Steve's commander at his funeral. Unfortunately, the Bumpus' family does not have that same privilege and this too must be rectified. We are proud military families and we will continue to be in the future.

And you have to know, we both have members currently serving this country now. We deserve to display the gold flag in homage of our beloved. This too has been a benefit denied to both of our families.

We would like to thank the Department of Defense for recently installing the necessary incinerators at the Balad base. However, we are concerned, as other toxic burn pits continue burning 24/7 throughout Iraq and Afghanistan and we ask the Committee for your support to correct the problem.

In conclusion, our families will continue to live with emotional battle scars caused by the terminal injuries our beloved ones suffered as a result of the exposures of burn pits. I assure you it is a heavy cross to bear. Our wish is for this Committee to begin the actions it takes to stop this nightmare. You have the power to save our courageous heroes who serve our country and who protect me and who protect you.

Thank you for your time in hearing our voices.

[The prepared statement of Ms. Pennington follows:]

Chairman Akaka. Thank you very much, Ms. Pennington, for your testimony. Dr. Miller, your testimony, please.

STATEMENT OF ROBERT F. MILLER, M.D., ASSOCIATE PROFESSOR OF PULMONARY AND CRITICAL CARE MEDICINE,
VANDERBILT UNIVERSITY MEDICAL CENTER

Dr. Miller. Chairman Akaka, Ranking Member Burr, and members of the Committee, I thank you for the opportunity to testify today. My comments will focus on a group of United States soldiers with permanent respiratory impairment following service in Iraq and Afghanistan.

In early 2003, 20,000 soldiers from the 101st Airborne out of Fort Campbell, Kentucky, were deployed to Northern Iraq as part of Operation Iraqi Freedom. In June 2003, opposing forces set fire to the Mishraq Sulfur Mine approximately 25 kilometers from Camp Q West, a major military supply air strip and primary area of deployment for the 101st Airborne.

At that time, the Mishraq Sulfur Mine was the largest sulfur mine in the world. It burned for over four weeks and caused the release of 42 million pounds of sulfur dioxide per day. This represents the largest manmade release of sulfur dioxide on record. Satellite imaging documented that the sulfur dioxide plume extended north and south over the city of Mosul and Camp Q West.

Sulfur dioxide is the gas that you and I associate with striking a match. It is a potent lung toxin and has been shown to cause lung injury at levels as low as .1 part per

million. Our soldiers were exposed to levels many times higher than this. Skin, eye and airway irritation reported by soldiers in the area suggests levels in excess of 50 parts per million. Random sampling by the U.S. Army documented toxic levels of over 100 parts per million.

Most of the 101st Airborne deployed in early 2003 returned to Fort Campbell in 2004. This is when Vanderbilt University began receiving referrals from providers at Fort Campbell asking for assistance in evaluating soldiers complaining of shortness of breath on exertion, soldiers who could no longer pass physical training--physical fitness testing.

The typical soldier had been able to complete a two-mile run in exemplary time within regulation. Now these soldiers had to walk much of the course. In almost all cases, standard respiratory evaluations had been normal. X-rays, chest CT scans and pulmonary function testing were all normal or nearly normal.

None of these routine tests explained the cause for the soldiers' limitation. Vanderbilt physicians ultimately referred patients for surgical lung biopsy and I must emphasize that it is very uncommon to perform a surgical biopsy to evaluate shortness of breath when standard testing is normal. You just do not send a patient to the operating room for a surgical lung biopsy when pulmonary function

tests and x-rays fail to indicate some type of cause.

But the degree of exercise limitation and sulfur dioxide exposure were compelling enough for us to apply this aggressive approach. In almost every case, surgical biopsy showed constrictive bronchiolitis, a condition associated with damage or destruction affecting more than 50 percent of the small airways of the lungs.

This abnormality causes pulmonary limitation, but is not detectable on x-ray. Between 2004 and 2009, Vanderbilt physicians performed surgical biopsies on 45 of 70 soldiers referred for unexplained shortness of breath. All of the biopsies except one demonstrated some form of bronchiolitis.

This condition has no known treatment and has resulted in Med boards from almost all of those affected.

While the majority of patients diagnosed with constrictive bronchiolitis were exposed to sulfur dioxide from the sulfur mine fire, 25 percent of those biopsies served at a time or a place incompatible with this exposure.

They had similar exercise limitation, test results and biopsies showing bronchiolitis, but they did not report any extraordinary exposures that would distinguish them from other soldiers. However, almost all reported inhalational exposures that were common to the Iraqi experience, including fumes from burn pits, burning human waste, fires and dust from combat, burning oil and diesel exhaust.

Consider the example of a 42-year-old physician who was deployed to Northern Iraq in 2007. She had been an avid marathon runner prior to deployment and ran regularly during eight months--her eight months tour of duty. Upon return, she was too short of breadth to run a mile. Her x-rays, pulmonary function tests were normal and her lung biopsy showed constrictive bronchiolitis, the same abnormalities seen in the other soldiers. She remains limited and now finds it difficult to climb stairs and walk up inclines.

Up to this point, almost all of the soldiers diagnosed with constrictive bronchiolitis have been referred from Fort Campbell, but we have received a number of communications from soldiers and providers throughout the country, leading us to believe that this condition is present but not being diagnosed at other facilities.

As noted previously, this diagnosis can only be established by surgical lung biopsy and most clinicians would hesitate to recommend this procedure. Military and VA officials have had a difficult time rating disability in this population. In most cases, the affected soldiers are comfortable at rest and are able to perform their activities of daily living. They have normal or near normal pulmonary function tests, but at the same time, they cannot meet the physical training requirements and are considered unfit for duty.

This unique circumstance has challenged those who want to determine disability. Pulmonary function testing is the standard for rating respiratory problems, but how does one rate a soldier who is too short of breath to serve yet has a normal pulmonary function test? Unfortunately, the ratings applied thus far have not been standardized. We have seen many examples of a soldier receiving a rating from the U.S. Army only to have it downgraded by the VA.

More research is needed to understand the cause and prevention of this disease. There is little doubt that the cause of bronchiolitis and those exposed to the Mishraq Sulfur Mine fire was due to inhalational toxin. There is also little doubt that those not exposed to sulfur fires suffer from a disease caused by toxic inhalation.

We must determine what these other toxins are to prevent those serving from being exposed. We must also consider baseline pulmonary function testing prior to deployment, knowing that our soldiers too often encounter inhalational toxins. And finally, I urge the development of standards for evaluating this condition that I have described today.

Thank you for your attention.

[The prepared statement of Dr. Miller follows:]

Chairman Akaka. Thank you very much, Dr. Miller, for your testimony. Now we will receive the testimony of Ms. Paganelli.

STATEMENT OF LAURIE PAGANELLI, MOTHER OF JORDAN PAGANELLI, CHILDHOOD CANCER(SARCOMA)WARRIOR AND PAST RESIDENT OF U.S. NAVAL AIR FACILITY (NAF) ATSUGI, JAPAN

Ms. Paganelli. Thank you. Good morning, Chairman and members of the Committee. Thank you for this opportunity to present my testimony on behalf of my family and as a representative for hundreds of sailors, Marines and civilians who were unknowingly exposed to and have been adversely affected by contaminated air, soil and water at U.S. Navy Air Facility Atsugi, Japan.

My name is Laurie Paganelli and I am a former resident of Atsugi. My husband was active duty Navy service member and we were given orders to report to Atsugi in 1997. Our tour of duty was from 1997 to 2000. Our only son, Jordan, was five years old when we arrived. While stationed at Atsugi, he attended Shirley Lanham Elementary School, played soccer, T-ball, attended many sporting, cultural events throughout our time there.

On January 11--excuse me--2008, our lives changed forever. Jordan, then 16 years old, was diagnosed with a rare, vicious and highly aggressive form of cancer, so aggressive in fact that by the time he displayed any symptoms, his cancer had already progressed to Stage IV.

The name of his cancer is Alveolar Rhabdo-Myo-Sarcoma,

as known short, ARMS. ARMS is considered extremely rare and there are only about 350 cases each year in the United States, and because of its rarity, severe lack of funding for this--there is a severe lack of funding for this type of cancer. Only 3 percent of research money goes towards childhood cancer research, making a five-year survival rate dismally low.

Jordan's protocol was an intensive multi-agent therapy, including dose compressed cycles which had us calling Walter Reed Army Medical Center home for most of the 15 months of continuous treatment. Jordan also battled through 12 total weeks of daily radiation, seven weeks to his torso and lungs, and then five more weeks to his entire head following the discovery of additional cancerous lesions that had spread to his brain.

Additionally, due to cancer-based damage to his hips, he spent 10 months on crutches and the rest with a cane. Quite the contrast to the young boy who played at Atsugi base and the high school cross country star he had been just months earlier.

During our stay at Atsugi, we were aware of the incinerator. It smelled, burned our eyes and sometimes added a greenish glow to the air around us. We certainly were not aware of the effects it would have on our family years later. As most military families do, I trusted that

the Navy wouldn't let us live somewhere that was a danger to our health. I was wrong.

From 1983 to 2001, sufficient and compelling evidence showed that the blend of high toxic chemicals were released from the Shinkampo Incinerator Complex, labeled SIC, at levels that far exceeded the EPA's health risk-based guidelines. These chemicals severely contaminated the residential area of Atsugi. A partial list of chemicals include volatile organic compounds, polychlorinated biphenyls, pesticides, polycyclic--excuse my pronunciations--aromatic hydrocarbons, dioxins, furans, particulates and heavy metals.

In 1990, U.S. Department of the Navy documents referred to this plume of smoke as "witch's brew of toxic chemicals." During the operation of SIC, the Navy spent approximately $18 billion--excuse me--million dollars, performing numerous ambient air and health studies at Atsugi. The data repeatedly confirmed that Atsugi was being polluted and carcinogenic and non-carcinogenic chemicals, of which--be categorized by the EPA to have long latency periods, meaning that the effects would be evident years after exposure.

In 1997, the Navy began to communicate health risks to Atsugi residents. However, during the initial 12 years of incinerator operations, personnel had little to no knowledge of the potential health risks in toxic exposures. In risk

and--a review of the Navy's human risk assessment of Atsugi prepared in 2001 by the Committee of Toxicology, stated "there does not seem to have been a coordinated strategy for risk communication."

In 1997, risk communication efforts included instructions for residents and school children to stay indoors while the plume of toxins blew towards the base. A standard form 600 was added to personnel medical records stating that we were exposed to 12 toxic chemicals and exceeded the maximum contamination levels.

Although the Navy had no control over the missions of the SIC, they did have the ability to avoid exposing thousands of children to toxic chemicals. By 1990, the base residents were being exposed to dioxin and other toxic chemicals. In 1997, the Navy Inspector General reported that "the Navy must act decisively to reduce personnel exposure to incinerator contaminants. A range of options to accomplish this include, but not limited to, moving U.S. personnel to other locations, must be examined."

The 1999 study conducted by government of Japan and the U.S. Navy found dioxin levels in the air to be dangerously high. By 2000, Defense Secretary William Cohen and chief of the Japanese Defense Agency agreed that Japan would provide temporary off-base housing and that Japan would not object to the U.S. Government's efforts to sue SIC for violating

environmental laws.

In 2001, the United States Department of Justice brought suit against private incinerator in Yokohoma court. A lawsuit claimed that toxic chemicals severely polluted the air, soil and groundwater and interfered with U.S. Government rights of property and possession. The SIC was closed when the government of Japan decided to pay the incinerator owner the equivalent of $42 million to shut down and dismantle the incinerators.

The Navy had knowledge that Atsugi residents were being exposed to dioxin in the SIC emissions in the early 1990s and they knew what detrimental effects such exposure would have to the human body. As you remember, dioxin is what made Agent Orange so toxic. So it is no surprise that by 1998, the Navy recognized their liability and instituted a one-page waiver that did not convey any information of known long-term risks associated with the SIC.

We were required to sign the waiver. In 2007, after complaints of former residents, the Navy provided a public website with some study-based information. However, the website has not been widely publicized and many former Atsugi residents do not have knowledge of its existence.

Recently the Navy started--stated that the 2009 Atsugi health study produced a registry. However, the study confirms that approximately 75 percent of the Atsugi

population in the study was lost to follow-up, which adversely affects the study's end result, specifically because of the documented latency period of toxic exposure.

Over the last three years, an estimated 750 former residents, including retired and former active duty personnel and their families, have come together for support outside the realm of the Navy. Within this group, at least 61 cancer cases have been reported, all of which have been directly associated with dioxin exposure. They include brain, thyroid, cervical/ovarian, colo-rectal, leukemia, lymphoma and various other cases of sarcoma, many of which involve innocent children, like our son, Jordan, who lived at Atsugi while their mothers and fathers faithfully served the United States of America while stationed in Japan.

Besides cancer, many former residents suffer from illnesses, including nervous system disorders, liver and kidney damage, auto-immune diseases, neurological disorders, cardiac irregularities, and other toxic-related diseases as defined by the Agency of Toxic Substances and Disease Registry.

In closing, I would like to state that I had the basic human right not to be exposed to the types of toxic chemicals that were highly prevalent at Atsugi. Our military members are proud to dedicate their lives in defense of this great country and we support them in their

mission every day. However, we trusted the Navy to provide a safe environment for our family members, but they failed to do so, knowingly housing our families in a toxic waste zone.

We look to you, Committee members, to rectify this gross misconduct and to take action to ensure that the VA is provided with an appropriate registry and an accurate risk of cancer and non-cancerous illnesses associated with the SIC. We urge you to ensure that all former residents are notified.

Finally, we urge you to introduce a bill to enact a new law that allows former Atsugi residents and dependents to receive appropriate VA benefits, to include medical care and disability compensation. My son has been fighting for his life and the journey so far I would not wish on any parent or family.

We will never know if this disease was caused or brought about by the exposure of the toxic chemicals at Atsugi. However, the risk imposed to him and my family and lack of proactive risk mitigation is an absolute tragedy. I pray that no other family has to endure the pain of watching their child fight for their lives.

Thank you for allowing me to speak today.

[The prepared statement of Ms. Paganelli follows:]

Chairman Akaka. Thank you very much, Ms. Paganelli. Now we will receive the testimony of Dr. Feigley.

STATEMENT OF CHARLES E. FEIGLEY, Ph.D., PROFESSOR,
ENVIRONMENTAL HEALTH SCIENCES, PUBLIC HEALTH RESEARCH CENTER, ARNOLD SCHOOL OF PUBLIC HEALTH, UNIVERSITY OF SOUTH CAROLINA

Mr. Feigley. Good morning, Mr. Chairman and members of the Committee. Thank you for your concern about the health of veterans.

My names is Charles Feigley. I am professor of environmental health sciences at the University of South Carolina, Arnold School of Public Health. I am also principal investigator of a DoD-sponsored contract testing the use of copper in air conditioning systems to improve air quality and reduce illness in the military.

As well, I am principal investigator of the University of South Carolina Center for Public Health Preparedness, which is funded by the Centers for Disease Control and Prevention. We assist state and local tribal and--state and local and tribal health agencies and their community partners to prepare for a wide range of public health emergencies.

In addition, I have served on a number of committees of the National Research Council, or NRC, including as chair of the NRC subcommittee that prepared the report titled, Review of the U.S. Navy's Health Risk Assessment of the Naval Air Facility at Atsugi.

The National Research Council is an operating arm of the National Academy of Sciences, not part of the government, and it is--it was established in 19--excuse me, 1863 by Congress and under President Lincoln to advise the government on matters of science and technology. I am here before you today because of my experience as a volunteer serving on that NRC committee.

The NRC report titled, Review of the U.S. Navy's Health Risk Assessment of the Naval Air Facility at Atsugi was prepared in response to requests from the U.S. Navy for an independent review of the final draft of the Navy Environmental Health Center's report on the risk assessment at Atsugi and that was in 2000, the year 2000.

The NEHC, that is, the Naval Environmental Health Center, that prepared the risk assessment report that we reviewed, had conducted a risk assessment because of concerns that were raised by residents of Atsugi, the U.S. Navy personnel and their families regarding health effects of what came to be called Enviro-Tech Incinerator--the Enviro-Tech Incinerator, formally called Shinkampo or Jinkanpo Incinerator Complex.

That complex was adjacent to the U.S Naval Air Facility which is located southwest of Tokyo, and when I say adjacent, one of the critical things that really is not mentioned in my written statement is that the incinerator is

at a much lower elevation than the base facility. The stacks from the incinerator discharged just above the level of the naval air facility so that when the air is--when the bin is blowing, as it frequently is, from the incinerator to the base, they were directly downwind and at really pretty much the same level of discharge.

The concerns were related to the exposure to emissions from the incinerator and to chemicals resulting from the storage handling and disposal of waste material at the facility. The risk assessment was conducted after a previous NRC committee recommended that a comprehensive health study at NAF at Atsugi be conducted.

The NRC subcommittee on Atsugi consisted of members selected for their expertise and toxicology, epidemiology, industrial hygiene, engineering, exposure assessment and risk assessment. We were specifically asked to do two things. This is our charge, review the adequacy of the methods used to assess risks, the uncertainty is identified, the risk to susceptible sub populations, such as pregnant women and young children, and the scientific validity of the conclusions drawn.

Secondly, to recommend research to fill data gaps and options for mitigating risks associated with exposure to the incinerator emissions. It is important to note that you can see from these--as you can see from these specific tasks,

that the subcommittee was not asked to determine the potential health effects from the incinerator, but to review the assessment that was conducted by the Naval Environmental Health Center.

In its review, the subcommittee identified a number of aspects of the risk assessment that were exemplary and others that needed improvement. The subcommittee noted that the NEHC risk assessment included a rigorous quality assurance and quality control program and the subcommittee therefore had confidence in the accuracy of the data collected.

The subcommittee was pleased with a broad number of air pollutants that were monitored and the collection of meteorological data. It also commended the NEHC for calculating risks of acute and chronic toxicity endpoints of different sub--of the different sub populations.

The subcommittee was concerned however about inconsistencies in the objectives of the risk assessment, some technical aspects regarding how the collected data was used in the risk assessment, and the interpretation of data and risk assessment findings by the NEH. The subcommittee also commented on the lack of analysis and characterization of uncertainty in the risk assessment.

The subcommittee concluded that the NEH had collected a large amount of sampling data at NAF Atsugi. If analyzed

and interpreted appropriately, those data might have been adequate to determine whether the air pollution at NAF Atsugi poses a health risk and how much the incinerator facility contributes to that pollution.

However, the analysis of the data were inadequate to draw conclusions about the health risks of the persons residing at NAF Atsugi and about the contributions of the incinerators--incinerator to those risks. In addition, the NEHC had interpreted some of the results of the risk assessment without taking into account the meaning and limitations of the risk assessment process.

The subcommittee concluded that aspects of the analyses and interpretation of the data, not the underlying data themselves, constituted the main limitation of the risk assessment. The committee provided recommendations to improve the NEH risk assessment, including recommendations for the planning of the risk assess--of risk assessments, determination of attributable risk, analysis of air monitoring data, interpretation of risk assessment, treatment of uncertainty and information gaps that should be filled and improvements in the presentation and organization of the NEH draft summary report itself.

Given the aforementioned limitations of the Navy's risk assessment draft summary report, the subcommittee found that the analyses presented did not determine reliably whether

military personnel and their families incurred health risks by living at NAF Atsugi, nor did the analyses represent reliably the contribution of the incinerator to those health risks.

With that, I once again thank you for inviting me to testify before this Committee. I appreciate the important work that the Committee does for veterans' affairs and welcome any questions you might have.

[The prepared statement of Mr. Feigley follows:]

Chairman Akaka. Thank you, Dr. Feigley. Dr. Gibb, your testimony, please.

STATEMENT OF HERMAN GIBB, Ph.D., M.P.H

Mr. Gibb. Good morning. Thank you for the opportunity to testify this morning. I will be testifying on the subject of Qarmat Ali. I am testifying in my personal capacity and do not in any way represent the interest, beliefs or opinions of my employer.

I presented similar testimony to the Senate Democratic Policy Committee hearing on August 3, 2009. The subject of that hearing was the exposure at Qarmat Ali, did the Army fail to protect U.S. soldiers serving in Iraq? I have a Ph.D. in epidemiology from the Johns Hopkins University and an MPH in environmental health from the University of Pittsburgh.

I spent 29 years at the United States Environmental Protection Agency. Most of my time at the EPA was spent at the National Center for Environmental Assessment where I served in the capacities of assistant center director and associate director for health. Based on my experience working at EPA on risk assessments of hexavalent chromium and my study of chromate production workers, I can state that the symptoms reported by the soldiers who served at Qarmat Ali are consistent with significant exposure to sodium dichromate.

Sodium dichromate, and I may use the term hexavalent chromium and sodium dichromate interchangeably, but sodium

dichromate is a hexavalent chromium compound. EPA maintains an online database of risk assessments on over 500 substances, including an evaluation of the potential of these substances to cause cancer in humans. Hexavalent chromium is classified as a human carcinogen.

Among those substances that the EPA has classified as carcinogenic to humans, and it is estimated a cancer inhalation unit risk, the highest risk is that for hexavalent chromium. In other words, it is the most carcinogenic.

In 2000, while at the EPA, I was the senior author of two publications on the health risks experienced by chromate production workers at a facility in Baltimore, Maryland. The first publication reported the results of a mortality study. The second examined the risk of clinical irritation experienced by the workers.

The hexavalent chromium exposure at the facility was primarily from sodium dichromate, which is the same exposure that the soldiers experienced at Qarmat Ali. From my work on these studies, the EPA awarded me the Agency Scientific and Technological Achievement Award. I became interested in studying the group of workers in Baltimore because of the considerable amount of exposure data available for the facility. The group was relatively large, 2,357 workers. There were 122 deaths from lung cancer.

Hexavalent chromium was found to be significantly associated with an increased risk of lung cancer even after controlling for smoking. Half of those who developed lung cancer had worked at the facility for less than 10 months. And I might add that one quarter of the lung cancer cases had worked at the facility for two months or less.

In 2006, based in large measure on our study, the Occupational Safety and Health Administration set a permissible exposure limit for hexavalent chromium of 5 micrograms per cubic meter for--as an eight-hour time weighted average. The new OSHA PEL--this new OSHA PEL reduced the previous PEL by over 10-fold.

Clinically diagnosed symptoms of irritation were found to occur in our study population within a relatively short time period after beginning employment. The medium time to develop an irritated nasal septum was only 20 days. That means that half of the workers developed it in less than 20 days and half of it developed in more than 20 days, an ulcerated nasal septum, 22 days, a bleeding nasal septum, 92 days, a perforated nasal septum 182 days.

We recorded 10 different types of clinically diagnosed irritation. What was also remarkable was that the high percentage of the group that was diagnosed--was the higher percentage of the group that was diagnosed with signs of irritation. For example, 68 percent of the group was

diagnosed at one time or another with nasal irritation. The signs of irritation which the soldiers and workers experienced at Qarmat Ali are consistent with what we reported in our study.

The testimony by Russell Powell in the hearing today, by the soldiers in the hearing held by the Democratic Policy Committee on August 3, and by the civilian workforce in the previous hearing held on this subject suggests that they are experiencing signs of hexavalent chromium exposure.

A report from the Army Center for Health Promotion and Preventive Medicine, CHPPM, indicated the blood samples were collected from 137 potentially exposed soldiers and DoD civilians. CHPPM's description of these results is confusing and lacks sufficient detail. CHPPM suggests that the chromium and the red blood cells of the vast majority of the individuals in their study are within normal ranges. However, CHPPM notes in italicized print that there are some other literature references that have lower limits.

Unfortunately, CHPPM does not specify the literature sources, nor do they indicate how low these lower limits are. Where did CHPPM get their reference values and how good are they? Although CHPPM reports that nearly all of the test results were below the limit of detection, CHPPM also reports that 98 percent of the samples showed chromium levels within the range of four to five micrograms per

liter. How is it possible that 98 percent of the samples could be within the range of four to five micrograms per liter when they report that nearly all of the results were below the limit of detection?

In 1987, an article cited by the National Institute for Occupational Safety and Health, Dr. Angerer and others found that exposures 10 times the current OSHA limit will result in a concentration of chromium in red blood cells of .6 micrograms per liter. Assuming Angerer and his coauthors are correct, an accounting for at least the 40-day delay in CHPPM's collection of blood samples, the air concentration which the Qarmat Ali soldiers were exposed could be estimated to be approximately 80 to 200 times the current OSHA limit.

Why did CHPPM fail to explore inconsistencies in its data with that of other literature? These limitations call for greater scrutiny of the CHPPM results. The samples drawn from some of the soldiers and workers at Qarmat Ali were reported by CHPPM to be of--to have been taken approximately a month after remediation measures were taken to limit the exposure.

At the Democratic Policy Committee meeting on August 3, there were four soldiers there. Only one of them had had their blood drawn and I asked when it was drawn and he said it was 60 days after exposures ended. In its draft,

Toxicological Profile on Chromium, the Agency for Toxic Substances and Disease Registry reports that the half life of chromium in red blood cells is 30 days. In other words, 30 days after the exposure has ended, we expect to see only 50 percent of the chromium in the volume of red blood cells that would have been there initially.

The measurements of chromium in red blood cells is an insensitive method of detecting hexavalent chromium exposure. The measurement of chromium in the red blood cell only captures the hexavalent chromium that makes its way into the cell. It does not measure how much hexavalent chromium may have been inhaled and remains in the nose or lung or was reduced in the body to trivalent chromium, which is not getting to the red blood cell, or does it measure the chromium that was eliminated from the body?

It should be noted that NIOSH in its draft update on hexavalent chromium states the biomarkers, which would include blood tests, are of uncertain value as early indicators of potential hexavalent chromium-related health effects. ATSDR reports that 90 percent of absorbed chromium is eliminated within 24 hours. Nevertheless, CHPPM still put a great deal of emphasis on the red blood cell analyses from samples taken at least four weeks and maybe two months after possible exposure to hexavalent chromium.

An analogy would be like giving a breathalyzer to a

person three days after they were pulled over for erratic driving. The toxin would have been eliminated from the body in the intervening period. Given the limited usefulness of these red blood cell tests, they should not be used as a bottom line indicator of the hexavalent chromium exposure that the soldiers and workers experienced and they certainly should not be extrapolated to other individuals who were exposed at Qarmat Ali.

Nasal perforations, bloody noses and skin irritation would be far more telling about the soldiers and workers' exposures that measures the chromium and red blood cells taken a month or maybe two months after remediation has taken place.

In summary, the symptoms that have been reported by the soldiers and civilian workers are consistent with what has been experienced by other workers exposed to hexavalent chromium. Judgment on whether these soldiers and civilian employees were exposed should not be based on measurements of chromium blood--in red blood cells taken one to two months after remediation measures were taken, nor should such results be extrapolated to other individuals who were present at the facility.

Again, I thank you, Mr. Chairman, for the opportunity to testify today.

[The prepared statement of Mr. Gibb follows:]

Chairman Akaka. Thank you very much, Dr. Gibbs. Now we will receive the testimony of Mr. Powell.

STATEMENT OF RUSSELL POWELL, FORMER U.S. ARMY STAFF SERGEANT

Mr. Powell. Thank you, Mr. Chairman. Thank the committee members for having me testify here today and also a special thanks to the Veterans of Foreign Wars.

My name is Russell Powell. I live in Moundsville, West Virginia. I started my military career in 1994, in the 1-505 Parachute Infantry Regiment as a medic. Later through my military career, I became a flight medic in Panama and Fort Bragg.

In 2001, I joined the West Virginia Army National Guard as a medic. In April of 2003--or excuse me--March 2003, the 1092nd Engineer Battalion was deployed to Iraq. In April of 2003 to June 2004, the 1092nd was assigned as security for KBR workers. When Charlie Company arrived at the plant, which was the Qarmat Ali Water Treatment Plant, it had been seriously pillaged and destroyed.

There was a coating of orange-colored dust throughout the facility and at the time, no one knew or made any concerns of what the causing--or what the powder was. The orange dust was located in large bags that were ripped open throughout the facility. During my stay at Qarmat Ali, there was at least 10 dust storms. They would blow through the facility picking up dust and debris.

At no time were myself or other soldiers or KBR workers

offered any protective clothing, masks or respirators to keep us from the elements. During these storms, or shortly thereafter, about 90 percent of the KBR workers and the soldiers would have severe nose bleeds, coughing up blood, hard time breathing and nausea and burning sensation to lungs and throat.

After a week of being at the facility, several personnel began getting skin lesions on their hands, arms, faces and nostrils. Of course, we had also soldiers that had deviated--or excuse me--perforated septums, which holes through their nose from one end of their nose to the other.

As a medic, I felt pretty concerned for the safety and health of all the persons that were sitting at the Qarmat Ali Treatment Plant. I talked to one of the KBR workers and I asked him, what is going on, about everybody is getting real sick, getting bloody noses, and one of the KBR workers said their supervisor said we are all allergic to the dust and sand.

Later on, there was another dust storm and I was eating an MRE and the storm hit me and I started eating. My lungs started burning. My throat started burning and I started being real nauseated and sick. The same day they said Doc, you are not going out to the water treatment plant tomorrow; you just stay in and go to the infirmary and see one of the Navy doctors.

Well I went to one of the Navy doctors at Camp Commando in Kuwait and he pretty much oh, you are sick. You just got a viral infection. But I went to a bomb shell bunker and tried to give myself an I.V. because I knew I was--there was something really wrong. After I went to that bomb shell shelter and tried to give--administer an I.V., I do not really remember anything.

I woke up in the hospital, The Kuwaiti Soldiers Hospital. There was a couple Navy soldiers that found me and they said, you were just coughing up blood and delirious. Well at the--I spent a week at the Soldiers Hospital and my face and lips were burnt and I was not out -

-exposed to any sun. It was pretty much from the dust.

I got out of the hospital, but--excuse me--at the hospital, the doctor said that they do not really know what caused the--my face and lips to be burnt as bad as they were. They went ahead and just gave me a bunch of antibiotics, sent me back to Qarmat Ali.

When I got back to Qarmat Ali, there was a bunch of soldiers, a bunch of my soldiers complaining of the same symptoms that I had when I went to the Kuwaiti hospital. Of course, I gave them antibiotics because we did not have no physician. We did not have a physician assistant and I pretty much became the doctor for the battalion.

In June of 2003, Indiana National Guard soldiers

relieved us from our duties from Qarmat Ali. At no time did any of the 1092nd from the West Virginia National Guard get tested for any exposure to chemicals, blood drawn or anything, or even told about it. When I left Iraq in April 2004, I went to the VA Clinic in Clarksburg, West Virginia and talked to them about my skin rashes and stomach problems, nose bleeds and the doctors were unable to determine what was the cause of these problems.

In 2009, I received a letter from the West Virginia National Guard stating that we were possibly exposed to sodium dichromate while serving at Qarmat Ali. The VA doctors believed this could be the cause of our health issues, but because they know little about sodium dichromate, they are still researching, trying to figure out the effects of it on the human body.

I would like to thank Senator Rockefeller and his staff, and especially the VFW, for giving soldiers and veterans much needed support through the VA system in West Virginia. Once again, I thank all of you for having me here today.

[The prepared statement of Mr. Powell follows:]

Chairman Akaka. Thank you very much, Mr. Powell, for your testimony. I would like to say thank you again to our first panel. Many of you have given heartfelt testimony regarding some very, very personal issues that have affected your lives.

I know I speak for the entire Committee, members of this Committee, when I say that we appreciate your presence here today. I would like to ask my question to four of our witnesses, Mr. Partain, Ms. Pennington, Ms. Paganelli and Mr. Powell.

Are you satisfied with the military's response to each of the exposures you or your family member was affected by, including high-risk lists, high-risk health problems? Mr. Partain?

Mr. Partain. As far as the military's response to my exposures at Camp Lejeune, I would say no. I was diagnosed with male breast cancer in April 2007. My wife found the disease when she gave me a hug before bed one night. Two months later, I discovered that I had been exposed in the womb while at Camp Lejeune. I had no knowledge of my exposures until then and it just happened to be my father was watching a newscast and saw a hearing about Camp Lejeune and that is how I became aware of this.

Chairman Akaka. Ms. Pennington?

Ms. Pennington. We were disappointed with the doctors

actually at Duke University for orally citing the reasons for my brother's aggressive AML. When pushed, again, they admitted it was definitely due to chemical exposure, but they could not prove it and there was some pushback that they are receiving from the military there at Fort Bragg. I do not know the details to that. They would not elicit any further.

I can tell you the Bumpus family, no, has not received any assistance from the VA or military because Matt ended his service one year after--or the disease came to light one year after his service. So the VA has harshly denied the connection between the AML and his service in Iraq and where he was stationed in Balad.

So no, they are not receiving any benefits from the VA or military and are completely dissatisfied.

Chairman Akaka. Thank you. Ms. Paganelli?

Ms. Paganelli. Thank you. I would say on behalf of Atsugi residents, or past Atsugi residents, no, because I really strongly believe there needs to be an accurate registry and so many families are not informed. I just really would like there to be a registry for these families and benefits for those who further down the line need them, some acknowledgement for that. Thank you.

Chairman Akaka. Thank you. Mr. Powell?

Mr. Powell. I think the Army did, or the Department of

Defense did kind of lack an acknowledgement that we were even exposed later, about five years later after we returned home. It was just kind of an eye opener, so that is kind of, well I will tell you. I guess we go to the VA and the VA has no idea what is going on with us, but they still are kind of timid on what to say, whether it was exposure or anything like that. They just are just trying to back away from it.

So we are all pretty disappointed. We are on a registry, but the registry to us still does not say that you guys were exposed or a lot of the soldiers tried to put in claims for the chemical exposure get denied.

Chairman Akaka. Dr. Gibb, how well do you think the Army understood the scientific literature associated with the exposure at Qarmat Ali?

Mr. Gibb. I do not think they understood it very well at all. Their statements by CHPPM that--well, they put a great deal of emphasis on the blood tests and the blood tests at that period of time were essentially worthless.

As to how much exposure they could have had, they could have had fairly high exposure and might not have even have shown up in the blood test. They made a statement in their report that some people exposed to very high exposures for more than two years had developed lung cancer, but that is not--I think at the time in 2003, the leading study, and I

hope to say this with modesty, was my study on chromium--sodium dichromate exposure. That would have told them that we had people exposed for less than two years that developed lung cancer.

And also the statement about that most of the--98 percent of the samples were within--were below the limit of detection, yet they could tell you that it was between 5--the exposure was between 5 and 8 micrograms per liter. I do not know how they could say that. I mean, I do not know what that means.

I have shown that to other Ph.Ds, to M.D.s; they cannot understand it. I mean, if M.D.s and Ph.Ds cannot understand what they are telling you in their fact sheet, how is the soldier who is not trained to understand these supposed to understand it?

So I think that the information--I mean, I have put together these kinds of fact sheets at the Environmental Protection Agency and press releases and it is important not to scare people unduly. But it is also important to put the correct information out there and I do not think they did that.

Chairman Akaka. Thank you, Dr. Gibb. Senator Burr, for your questions and we will follow that with Senator Rockefeller.

Senator Burr. Thank you, Mr. Chairman. Dr. Feigley,

your subcommittee was asked to review the adequacy of the methods used to assess risk, the uncertainties identified, the risks to susceptible subpopulations such as pregnant women, young children, the scientific validity of the conclusions drawn, number one. Number two, recommend, depending on the evaluation, research to fill data gaps and options for mitigating the risk associated with exposure to incinerator emissions.

Was the NRC subcommittee asked to review the final NEHC report?

Mr. Feigley. No, not to my knowledge. I will have to pass that off to some other folks back here from the NRC, but our committee was not asked, let me put it that way.

Senator Burr. So the subcommittee's recommendations, you do not know whether any or all of the recommendations were taken into account from the draft report to the final report?

Mr. Feigley. I do not.

Senator Burr. Okay. Let me ask you, if you contracted with the NRC, if you were not on the subcommittee and you were going to contract with the NRC for that particular site, would you have limited the NRC review to the scope that the subcommittee was limited to?

Mr. Feigley. No, and in fact, I think we say in the report that we thought that the Navy should have used the

NRC to review their plans for doing their sampling. We recommended they do a comprehensive sampling at the base, a comprehensive risk assessment. However, I think they should have asked us to--us being NRC, not--I am not part of NRC, but I am just a volunteer. But I think they should have asked NRC to actually review their plans for doing the sampling because then I think a lot of things that we had-- the negative things that we said about their report would have been said before they did the study and we could--you know, they could have corrected them.

Senator Burr. Therefore, it is pretty difficult to believe that you could go back and reconstruct without reviewing in total the risks?

Mr. Feigley. There is--there are some bright spots in what we saw that we thought perhaps further analysis might have revealed, especially some of the air quality modeling and the correlation between air quality modeling and the measurements that they did on the facility that could have revealed some things.

Senator Burr. Let me get into thresholds and then Dr. Gibb, I am going to turn to you for your prior work, the 26 years at EPA.

Mr. Gibb. Twenty-nine.

Senator Burr. Twenty-nine, excuse me. Thank you for that service. A observation question. Is the threshold for

risk at EPA different than the threshold for risk at the NRC?

Mr. Gibb. I do not have an answer to that question. I mean, there is--

Senator Burr. Let me ask it in a different fashion. If it were different, would you find that to be a flaw? Shouldn't the threshold for risk at both, which both assess the risk on a human population and U.S. population, shouldn't that be the same?

Mr. Gibb. That is a rather tricky question.

Senator Burr. Well let me ask it in a more specific way. Should the NRC look at benzene differently than the EPA does?

Mr. Gibb. I think the answer to that is no, I do not think they should look at it differently.

Senator Burr. Okay, I just wanted to clarify that. Now, Dr. Nuckols, before I ask you a question, I would like to ask the chairman, after the NRC Council issued its report on Camp Lejeune earlier this year, other experts, including Camp Lejeune Community Assistance Panel, a group of five scientists, and the National Resource Defense Council, released documents criticizing the report. I would ask unanimous consent to include copies of those documents in the hearing record.

Chairman Akaka. The documents will be included.

[The information follows:]
/ COMMITTEE INSERT

Senator Burr. In one of those documents I just mentioned, Dr. Nuckols, it was noted that the National Research Council's Hazard Evaluation in the Camp Lejeune report, and I quote, "did not take into account that benzene and vinyl chloride were contaminants in drinking water at Hadnot Point or Tarawa Terrace."

I guess I would ask you, is that accurate and can you explain benzene and vinyl chloride, what they are and what NRC sees as their hazard?

Mr. Nuckols. First of all, hazard evaluation, in my mind, has a very specific definition and there is a portion of the report in which a hazard evaluation was conducted. Is that--I just want to make sure that that is what you are referring to?

Senator Burr. Eventually where I am going to get to is that the basis of what the NRC subcommittee found, and I am out of your testimony, it says, to evaluate the potential health effects to exposed residents, the committee undertook four kinds of reviews to determine what kinds of disease and disorders have been found to result from exposure to TCE and PCE, not to benzene or vinyl chloride.

So the obvious thing is, did you take into account when you were assessing the risk to individuals exposed on the base to the groundwater contamination the two chemicals of benzene and vinyl chloride?

Mr. Nuckols. In the hazard evaluation that was conducted by a subset of the committee, which I think was in the toxicology subgroup that I mentioned, I do not think that benzene or vinyl chloride were considered.

In the overall report, the charge, in my understanding, and I think the majority of the committee, was the underlying words "a causative relationship." The process that we took towards that was in my group, which is in my summary, I pointed out, was to try to make a determination of the extent of chemical contamination, where it was, what chemicals and so forth.

In the initial work of the committee, a lot of focus was made on PCE and TCE because that had been the principal contaminants, primary contaminants that were the focus of the ATSDR study and their risk assessment.

Senator Burr. So can I conclude from what you are saying that you did not assess in the same manner benzene and vinyl chloride as you did TCE and PCE?

Mr. Nuckols. It was not included in the hazard evaluation that--I am fairly certain of that. Where I was going with my response was that we came across in the exposure assessment group more information about benzene being--occurring in the aquifer, that there were samples there that would lead us to believe that there was exposure.

Our job, if you want to think of that group, that

subgroup, was to provide chemicals to the toxicologists and the epidemiologists for their evaluation and they did, I think, include those, although they were not as rigorously examined as PCE and TCE.

Senator Burr. Listen, I am in full agreement with you. The limitations that were on the NRC are prescribed in what you have been asked to look at and I think Dr. Feigley just confirmed that in another study. So can I conclude that review of toxicology studies, epidemiological studies and conduct of a hazard evaluation did not take place for benzene and vinyl chloride in the same fashion, if at all, as TCE and PCE?

Mr. Nuckols. The procedure that was used by the epidemiologists and the toxicologists was to review published studies of whether there was causation between these chemicals and disease. They left it open pretty much to what was out there in terms of what we knew about the relationship.

To my knowledge, both benzene and vinyl chloride were considered in that way. They were not considered in the hazard evaluation that is published in the report.

Senator Burr. I would only point this out that--I think this is at the root of part of the misunderstanding, was it or wasn't it? I would even think that if it was, it would be in your testimony. It would be stated clearly in

the report. But you only referenced TCE an PCE and there are these two other chemicals that I think Dr. Gibb would agree with are known carcinogens that under any study of the adverse health effects of contamination you could not exclude. And if you came to a conclusion that they play no part, it would be a need of the report to explain why because the EPA's own scientific information says that there is a direct cause to benzene and vinyl chloride contamination.

Mr. Nuckols. Can I respond to that, sir? The--first of all, I think that if you end the report, we do specifically list benzene and vinyl chloride as being--

Senator Burr. Present.

Mr. Nuckols. Contaminant--well not just present, contaminants of concern, chapter two. Read the conclusions of chapter two, Contaminants of Concern. And that there is in my mind, no place in the report that says these should not be studied. They are not an issue. It is not there.

And there is, in fact, information about what studies are out there on benzene and vinyl chloride in--I think it is in the appendix to the study and that was because--and I agree, it was late coming on board in the time period that we were working on the report as to whether or not it was an issue of concern. ATSDR in their first risk analysis said that benzene was not of concern.

But I think one of the important things that is overlooked in this report is that we have identified contamination and chemicals that were previously maybe not looked upon as being primary contaminants of concern at Camp Lejeune.

Senator Burr. The chairman has shown me great latitude and if the chairman would allow me to ask one more question, I will not have to go to a second round. Unless the chairman intends to go to a second round, I will wait.

Chairman Akaka. Intend to do a second round.

Senator Burr. You--no, go ahead, Jay.

Chairman Akaka. Go ahead. Continue with your question, Senator Burr.

Senator Burr. I did not want to neglect Mike, since he is directly affected by Camp Lejeune. Mike, let me just ask you, what actions would you like to see Congress, Department of Defense, Veterans Affairs do with regard to the exposures you are faced with and others have been faced with at Camp Lejeune?

Mr. Partain. Before I answer that, may I interject something on the previous conversation you were having with Dr. Nuckols?

Senator Burr. Yes, sir.

Mr. Partain. Dr. Nuckols was referring to ATSDR's work, that they had relied on ATSDR. He started to say, I

believe the public health assessment. One thing I would like to point out concerning both ATSDR's public health assessment and the work that the National Resource Council did with Camp Lejeune, was that they had incorrect data concerning the benzene and vinyl chloride.

More importantly, ATSDR, in their public health assessment, did not address benzene and that was one of the reasons why that document was withdrawn from basically public view in April of this year. So the--they did not evaluate benzene with the correct data and that data was not given to the NRC. They, even in their tables, have the incorrect levels for the--they omit the July 1984 readings.

To answer your question, we would like to see a full disclosure of what transpired at the base relating to the drinking water contamination. To accomplish that would mean the full cooperation of the Department of the Navy and the United States Marine Corps by disclosing all documents, plus full funding of all ATSDR's initiatives concerning the Camp Lejeune studies.

With the existence of documented exposure levels, any person who is now or is suffering from the effects of their exposures at Camp Lejeune, they should be giving medical care or compensation for their past suffering and disabilities. And for those who have lost loved ones, they should be afforded restitution.

Senator Burr. Mr. Chairman, I want to again thank you for what I think has been a very insightful panel. I want to thank the witnesses for their very personal testimonies, to the experts that we have, for their insight and knowledge, and thank the chair for his indulgence. I apologize to Senator Rockefeller.

Chairman Akaka. Thank you, Senator Burr, for your questions. Now let me call on Senator Rockefeller for his questions.

Senator Rockefeller. Thank you, Mr. Chairman. I want to--I guess I want to focus on you two, but I want to do it in a different fashion. Senator Burr's questions were so good because they were so specific, related to different toxins and the effect and what was included in this study and that study.

What fascinates me but angers me so much is that as I said, and you will remember this, Russell, at our August hearing, is there such a direct comparison between this and the Gulf War Syndrome, the denial on the part of the military, their refusal to not only respond to soldiers whose lives are being shredded, could not sleep, could not keep marriages, could not get jobs, could not read newspapers because they were being told to take a pill which had never been cleared by the FDA for animal use much less for human use to protect them from what they thought Saddam

Hussein was going to do and it turned out actually it was the wrong pill anyway. It was for the chemical he did not have.

But that is another matter. But the refusal--I want to get in the military culture. I know the military is in the next panel. I am not going to be here on the next panel. But you are a medic, Russell, and you are a good one and you have been through this and you come and you testify and you tell us what you are going through and you have seen the letter from Eric Shinseki that he sent this morning.

Mr. Powell. Correct.

Senator Rockefeller. Which has some promise to it. He says he is going to give full pulmonary tests, and in West Virginia we have discovered all of those people who were not on the registry or were not yet found. In Indiana, I am not sure they have. They have a lot more of them, but I am not sure they have discovered all of those.

But when you got into that situation and you had the orange dust and you are a medic and you have some stature and you go over to that place and you just lie down and try and give yourself an I.V. and all the rest of it, it says something about a soldier's--well, first of all, it says something about the military's inability to deal with something that might either be embarrassing for them or for which they cannot explain because they are busy fighting

wars, which is a rather large task.

On the other hand, there are people who are doctors and who have medical responsibilities in the military and they are not fighting wars, they are taking care of soldiers. There is something which prevents, and I have heard this in other sessions about other types of problems, soldiers taking on the military even as they suffer.

I want to talk about that for a moment. From your point of view--first of all, I understand the chain of command. I understand that from my point of view this is kind of a repeat. You went through this is 2003?

Mr. Powell. Correct.

Senator Rockefeller. And nobody discovered what you had until 2009. What is the culture problem we are dealing with here?

Mr. Powell. The biggest problem is when you go to--or let me say this. I do not think the Army knew fully--was fully aware with the chemicals being on the ground through KBR not actually providing them with that information. But the Army could have actually told us a little bit sooner whenever they did find out, in August, but they did not--August of 2003, they did not tell any of the soldiers. And there are still some of the soldiers that I have talked to who are government employees who just found out within a week that they were one of the guys that were exposed to

chemicals and he is a government employee and they were saying they cannot find these gentlemen. This is the Department of the Army saying they cannot find them.

Well one of the officers, high-ranking officers from West Virginia, was on an aircraft with him and this was a month or two ago and still that individual--because I cannot really tell you what he does for the government, but he was talking to one of our generals and the general--and he told him that he was in the 1092nd Charlie Company and the general just did not say well maybe you might want to look at this or look at that and he was just dumbfounded until we linked up with that individual just through e-mails and trying to find all our soldiers.

Because we are trying to do our best to find out where our people went and give them the heads up on their actual medical problems, because a lot of them been having medical problems just didn't know why. When you go to the VA or anything like that, it is so horrible because you say you are a medic, a flight medic, they kind of look down to you in a sense because they say well, you already know everything or Mr. know-it-all. That is how most of the physicians feel.

We are not even trying to do that. We are saying hey, this is what is wrong with me. I am pretty sick. I am not faking the funk on you. I was doing medicine for a lot of

years. I am not trying to get over on you. It is real frustrating because they are just kind of brushing you off, brushing you off.

Now there is a few doctors that are really concerned and are actually trying to figure out the problems from the chemicals, but most of them just kind of brush you off at the VA. It is really a hard obstacle to go through.

Senator Rockefeller. Dr. Gibb, do you have any thoughts about that? Why is it that people, strong men like Russell, cannot--or they look down at a medic or they--some doctors are good, some doctors are bad or whatever?

I mean, for heaven's sakes, they knew they were going to send you to this camp, to Qarmat Ali, and therefore, they had to have been there, therefore, the fact of there being some orange dust must not have escaped them unless they were color blind. And so I do not understand that.

There is a lack of thoroughness or a lack of concern, a lack of care. I mean, if you saw the orange dust, knowing what you now know and knowing what the world now knows six years later, it is not very complicated to me. They were entering into a risky environment and chose not to know about it, not to warn about it, not to take steps to clean it up or to do whatever.

Now Dr. Gibb, I do not know if you have any thoughts on that.

Mr. Gibb. I think they had a significant exposure there. I mean, some of the soldiers described looking like orange powered donuts and it was all over the ground. Statements of the soldiers at the previous hearing indicated that it was everywhere.

I think that--and the bags read sodium dichromate. It was not like guessing. So they should have known and it should have been reported. Again, I do not think there was a good understanding of what sodium dichromate is or what its effects are. So I think there was a significant exposure that should have been addressed immediately as soon as they learned what it was.

I think that there was just--I feel like it was dealt with irresponsibly. I cannot think of a better word.

Senator Rockefeller. Let me be a little tougher about it then. Doesn't the military have a responsibility, and particularly when you are not in a huge situation which varies a lot, like the second world war, the first world war, you know, whatever, but you have a particular type of territory where there are certain factors which are common for all of that territory--Basra, I guess, was where you were--and then there is this orange dust, I do not understand that.

I do not understand why, if there are doctors who are in charge of the health, are they not in the deployment

decision process in any way? Are they left out until somebody does get sick? Is there anybody here who can answer that question?

Mr. Gibb. I think--again, I think that the knowledge of industrial hygiene is critical. I mean, we can do--you could recommend pre-deployment physicals and post-deployment physicals and all those kinds of things, but if you do not understand what substances that you are dealing with, those kinds of physicals are not going to get the kind of information that you need.

So I think this was a lack of--a lack of understanding of the industrial hygiene, the environmental health and then the follow-up to that was, it was just sort of like do not worry about it, it is okay. I think that, to me, is just--I do not want to say unconscionable, but I think it is--I think this is a very serious substance. This is a very potent carcinogen. This is a very irritating substance. You do not have to look very far to find information about the effects of sodium dichromate.

It is not some arcane chemical that we do not know about. We have known about the carcinogenicity of sodium dichromate since the early 1950s when the Public Health Service did a study of all the chromium production plants in the United States and reported huge lung cancer risks from the substance and the irritation of it. So it has been

known for a long period of time.

So I think that the first not having the knowledge to say well, we have soldiers in the facility and they are using this particular chemical, it is called sodium dichromate, what is sodium dichromate, and then you have to take steps to address that. I mean, this particular situation with the bag, thousands of bags was that of 100-pound bags broken out, open and the dust blowing all over the place and everybody reporting orange dust, that should have been cause to say, this is a serious situation, we need to do something right now.

And then to follow up to say, well, sodium dichromate it is not that bad. You have to be exposed for high concentrations for two years to get about--to get lung cancer. Do not worry too much about it, the blood tests do not show anything. The blood tests essentially were worthless at that point.

Blood tests might have even been worthless even when they were being exposed because it takes a fair amount--it takes a large amount of hexavalent chromium to show concentrations in the blood. So I think that the follow-up, the organization going into it, was inadequate. The follow-up was inappropriate and it was--I mean, it was--I mean, the soldiers deserve better than that.

The soldiers, I think I would say, it was a disservice

to the soldiers what happened. Disservice is putting it mildly. It was wrong.

Senator Rockefeller. It is shocking. It is just shocking. I have said before, maybe the last time, the very first Veterans' Committee meeting I ever attended 25 years ago, there was a soldier who had been sent into that part of the Pacific where they were testing the atomic bomb. He described what it was to be dying having served your nation, having followed orders, and then way back then, when things were I guess a lot more primitive, but maybe not, he said it is just an amazing feeling to have your government say to you, well you cannot prove that your cancer was caused by your being in that time, when we all know, and if you are a West Virginian like Russell Powell is, you know if you have been in a coal mine for 10 years, you have Black Lung; you just have it.

You do not need proof of it, you have it. There is a presumption of it. But we make the soldier prove everything and then along comes Agent Orange. I was at that hearing when Admiral Zumwalt, nobody was paying any attention to Agent Orange. People were dying all over the place, same thing, cancer. But when Admiral Zumwalt came up there and testified and said that his son had died or was in the process of dying from cancer, oh, then everybody got really alert and we started making good, so to speak, on people who

had Agent Orange.

That is the wrong way to do things. The military is meant to know that stuff. And then we had the Gulf War Syndrome, which the military took--the military I think something like 17 years to admit that they were wrong. We did a lot of studies and a lot of investigation on that when I was sitting in Dan Akaka's seat. But they did not pay any attention.

And that same infuriating indifference to soldiers, assuming that soldiers would be making excuses as opposed to soldiers might have real medical problems that they had not taken the time because the order of battle may be presumed to be more important. But on the other hand, these are doctors and they are ignoring it and they are writing us letters saying, take an aspirin and go home or you have a virus, go home, sleep, get a good sleep.

It makes me mad. What scares me is that I do not know that the culture has changed. Now I get this letter from Shinseki, and you have seen it, Mr. Powell, and I think you and I both think it is pretty good, that involved Guard members who have had an initial examination will be recalled, will have a complete exposure assessment as well as a more targeted physical examination and ancillary testing looking for indications of health outcomes that may be relevant to hexavalent chromium.

Those who have yet to enroll in the Gulf War Registry--
I like that part, will get this targeted examination initially--they will also receive a chest radiograph and pulmonary functional testing and then that will be repeated
every year and then every five years.
And so I think the Veterans Administration--you know, I
am a fan of Shinseki. I have no problems saying that. But
he is on the receiving end of this. The doing in was with the military and I do not get it, why they do not learn. And maybe I am wrong, but until somebody shows me I am wrong, I am just mad.
Please.
Ms. Pennington. Senator Rockefeller, I would just like
to add what I neglected to mention when Chairman Akaka asked
me if we were satisfied with what the military and the VA did with Sergeant Bumpus and my brother, Staff Sergeant Ochs. I need to tell you that my brother immediately upon return from his third tour in Iraq in the end of April 2007,
suffered from flu-like symptoms almost immediately.
He went to Womack Hospital at Fort Bragg, North Carolina three times. The doctors did exactly what you just
said. They said you have some type of virus. They sent him
home with 800 milligram Ibuprofen. So it was not until September when he had to get special permission to be seen by a private hospital where the private hospital actually

discovered that my brother actually had AML.

And I also like to add that Sergeant Bumpus, a private doctor, Dr. Tim Grennan, did a chromosome analysis on the initial blood drawn before Matt undergoed chemotherapy and he discovered chromosome mutations that would only happen if he was exposed to chemical exposures and this--something that you would see after he would receive his chemotherapy.

So I just wanted to go on record and let you all know that. Thank you.

Senator Rockefeller. Well, Mr. Chairman, I have over--well, it has just gone flat on 0.00, so I guess I am in real trouble. But those of us in Congress get military health care and we go down one flight or from here, six flights, to get it. There is a lot of doctors, Bethesda's available to us for whatever.

It would just be sort of nice and sort of important if your family and your friends and your situation and all of you felt like you could get the same thing. I have no reason to understand there is anything that we are doing here which is more important than your loved ones were doing and that you were doing in terms of the welfare of the nation. Please.

Dr. Miller. You know, I think when you--when a soldier finds themselves in a combat situation, there are a lot of unknowns and some of the things you cannot anticipate. But

in the group that I have taken of, there was a clear danger after it was identified and I thought that there was dissemination of inaccurate information to downplay what happened.

For example, there was a memo sent out to the soldiers exposed for the 101st Airborne that said sulfur dioxide is not a problem. It has no known serious side effects and it is not a carcinogen. They had measurements that the levels were toxic, well above the military's baseline of 13 parts per million, and they had them as high as 120 parts per million.

Then there was a second report out from the 62nd Medical Brigade Preventative Medical staff that said that you would only have problems if you were exposed to 400 to 500 parts per million, which would do us all in. I think that there are things that you cannot anticipate, but when you do identify them, you have to make sure that the information is disseminated is accurate.

Senator Rockefeller. Okay, well I have gone way over my time, but I guess this letter, I do not know if it is available. I mean, it came in today. Ordinarily, I would be cynical and say well that is good timing, but I am not in this case because it is from General Shinseki and I think he is trying to do the right thing.

There has always been a lack of coordination between

the Department of Defense and the VA. One does everything on paper and the other does everything on IT medical records. It is a terrific health care system. I do not know how they coordinate. I do not know what has changed.

Americans by nature react to episodes and then we sort of forget them. It is like--a little bit like when we go to war. We go to war, we win it, we tie, we lose it or whatever, then we come home and sort of let everything military deteriorate. I just think in the case of the care of veterans, it would be nice if we had more activity on the front end rather than waiting to have the VA try to clean up what the military failed to do, and that is just my point of view.

I thank the chair and I thank all of you, a lot.

Mr. Partain. Mr. Chairman, if I may.

Chairman Akaka. Mr. Partain?

Mr. Partain. When Senator Rockefeller was discussing the orange dust in Iraq at the facility out there and heard about the Atsugi Air Station in Japan, it befuddles the mind, it is almost like a common sense, there is orange dust, someone should look into it. I know in our case at Camp Lejeune, our issue was solvents in our drinking water and our research through the documents, we came across an order, a Marine Corps order from the commanding general of the base which identified organic solvents as a hazardous

material and further stated that improper practices and disposal practices create hazards such as contamination of drinking water.

From the very beginning, from the first public announcement in 1984, to the residents and personnel aboard Camp Lejeune, the Marine Corps has maintained that they were in violation of federal, state regulations. What they have failed to tell the public and everybody was that they were in violation of their own orders.

This order I am referring to dates back to 1974 and it is the third order in a series. We have not found the other two. They have not been produced, but we suspect they may go back to the early 1960s. It just almost seems like the common sense. Organic solvents, they are listed in there as something that is hazardous, and then if you dispose of them improperly, they are going to end up being in the drinking water.

Well that is exactly what happened at Camp Lejeune. Where is the common sense? Thank you.

Chairman Akaka. Thank you very much. I want to thank the witnesses in the first panel for sharing your personal experiences with us today. Again, this will be helpful to this Committee and we look forward to dealing with these problems that have been mentioned.

Thank you very much again and I will call up the second

panel.

[Pause.]

Chairman Akaka. This hearing will be in order. I want to welcome our principal witness from VA, Dr. Michael Peterson, who is the chief consultant on environmental health for the Strategic Health Care Group at the Veterans Health Administration. He is accompanied by Dr. Stephen C. Hunt, the national director for the Post-Deployment Integrated Care Initiative at VHA, and Bradley G. Mayes, the director of the Compensation and Pension Service at the Veterans Benefits Administration.

The next witness on the panel is Dr. Craig Postelwaite, acting director, Force Health Protection and Readiness Programs and director, Force Readiness and Health Assurance at the Department of Defense. Next we have Dr. Paul Gillooly, who is the public health assessor at Navy Marine Public Health Center.

We also have MajGen. Eugene Payne, Jr., the assistant deputy commandant for Installations and Logistics for Facilities with the Marine Corps. Our final witness on the second panel is John Resta, scientific advisor, U.S. Army Center for Health Promotion and Preventative Medicine.

I thank you all for being here this morning at this hearing. Your full testimony will of course appear in the record. Mr. Peterson, will you please begin with your

testimony.

STATEMENT OF MICHAEL PETERSON, DVM, M.P.H., DRPH,
CHIEF CONSULTANT, ENVIRONMENTAL HEALTH, STRATEGIC
HEALTHCARE GROUP, OFFICE OF PUBLIC HEALTH & ENVIRONMENTAL HAZARDS, VETERANS HEALTH ADMINISTRATION, DEPARTMENT OF VETERANS AFFAIRS

Dr. Peterson. Good morning, Mr. Chairman, Ranking Member and Committee members. Thank you for this opportunity to discuss what VA is doing to support veterans with environmental exposures that occurred during military service. As you indicated, I am accompanied by Dr. Hunt and Mr. Mayes this morning.

VA recognizes that service members sometimes face exposures to toxicants or materials in the course of their military service that can have deleterious health effects. We have developed a robust program within the Office of Public Health and Environmental Hazards to address this need by identifying potential sources of exposure in at-risk veterans, informing veterans and health care providers and offering treatment and care for service-connected conditions.

My written testimony provides background information about initiatives within VA to address these concerns, explains how VA works with DoD to identify and respond to environmental hazards and describes the four specific exposures cited earlier and actions taken by VA in response.

I would like to spend the few minutes I have addressing how VA and DoD collaborate on not just these exposures, but any possible environmental hazard and how we help veterans receive the health care and benefits they deserve. One of the many lessons that VA has learned from experiences with Agent Orange and Gulf War veterans illnesses is that information regarding possible exposures to environmental agents and other toxicants both within the combat theatre and other areas in which our troops operate must be received and acted upon by VA as early as possible.

Up-to-date information on these situations is invaluable to VA's ability to identify veterans who may have been affected by an exposure evaluate their individual risk of exposure and for sequelae provide appropriate medial surveillance and mitigate untoward health effects that are known to be caused by these toxicants.

In addition, where the possible outcomes are not known, it is important to perform epidemiological studies on exposed troops. This will better provide information than performing retrospective studies once it is determined that adverse health outcomes are being ascribed to a potential exposure.

To this end, the joint DoD/VA Deployment Health Working Group was established. This working group reports to the Joint Executive Council through the Health Executive

Council. The objective of this group is to identify and foster opportunities for sharing information and resources between VA and DoD in the areas of deployment health surveillance, assessment, follow-up care, health risk communication and research and development.

Each year this working group discusses deployment-related concerns and develops strategies by which to address them. The Deployment Health Work Group meets monthly to discuss a wide ranging array of exposure issues, including those dating to the World War II era. The Deployment Health Work Group also actively seeks to discuss and recommend coordinated action to identify involved service members, establish a determination of risks for this population and develop methods of outreach, risk communication and where necessary, medical surveillance and appropriate health care for veterans with any condition that may have resulted from these exposures.

Mr. Chairman, VA understands these issues are very important to you, all the members of this Committee and to veterans and their families. I can assure you VA is equally concerned and committed to working with DoD and other agencies to identify potential hazards, inform veterans of any risks to their health, develop appropriate responses and deliver needed care and benefits to veterans and their families. Only through such cooperation will VA be prepared

to deliver the proper health care and disability compensation benefits to those entitled.

Before I conclude, I would like to tell you about a new study currently underway that VA is conducting to help assess and identify the environmental exposure risks faced by this latest generation of veterans. VA's national health study for a new generation of U.S. veterans begins with 30,000 veterans deployed to OEF, OIF and 30,000 comparison veterans who were not deployed.

This study includes veterans who served in each branch of service representing active duty, Reserve and National Guard members. Women are being over sampled to make sure they are represented and comprise 20 percent of the study. The study compares the deployed and non-deployed veterans in terms of chronic medical conditions, TBI, PTSD and other psychological conditions, general health perceptions, reproductive health, pregnancy outcomes, functional status, use of health care, behavioral risk factors and VA disability compensation.

This research will help us identify what conditions are disproportionally found within the deployed population, which can help us then provide an evidence base for health care treatment and possibly serve as presumption for benefits.

Thank you again for the opportunity to testify. My

colleagues and I are prepared to address any questions you or the Committee members might have.

[The prepared statement of Dr. Peterson follows:]

Chairman Akaka. Thank you very much, Mr. Peterson. The chair calls for a slight recess and we will be right back.

[Recess.]

Chairman Akaka. The hearing will come to order. And now I call for the testimony of Mr. Postelwaite. Dr. Postelwaite?

STATEMENT OF CRAIG POSTELWAITE, DVM, M.P.H., ACTING DIRECTOR, FORCE HEALTH PROTECTION AND READINESS PROGRAMS, OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE (HEALTH AFFAIRS)

Dr. Postelwaite. Good afternoon, sir. Thank you very much. Mr. Chairman, distinguished members of the Committee, thank you for the opportunity to discuss the Department of Defense Occupational Environmental Health Program, our program to assess health risks associated with the environment in our workplaces.

I am Dr. Craig Postelwaite, acting director of Force Health Protection and Readiness Programs for the assistant secretary of Defense for Health Affairs. I am also a veteran with 26 years active duty service. Under my purview is the policy and oversight for the deployments-- or for the department's Deployment Health Program. A key component of the Deployment Health Program is our Occupational and Environmental Health Program, or OEH, as I will refer to it.

Its goal is to protect our personnel from accidental death, injury, illness caused by hazardous, occupational or environmental exposures. This includes preventing or minimizing short-term health effects, especially those severe enough to interfere with mission accomplishment and also any long-term effects that may affect our service members' health and quality of life in the years to follow.

To prevent or limit hazardous exposures, both in peace time and in deployed settings, the department applies a rigorous risk management program. Mr. Chairman, the department's many fine OEH professionals take their responsibility seriously and are fully dedicated to protecting and preserving the health of our personnel by identifying hazards, ascertaining the significance of those health hazards in terms of risk, determining appropriate controls and communicating the risk information to commanders and affected personnel.

Since 2001, our OEH professionals have collected over 17,500 individual environmental samples throughout the U.S. Central Command theatre of operations, including nearly 10,000 in Iraq, more than 3,500 in Kuwait and over 3,300 in Afghanistan. In the vast majority of cases, these samples indicate that U.S. personnel are not experiencing any exposures that would put their long-term health at risk.

However, with the current technology and under war time conditions, it is not always possible to monitor the working locations of all service members for all hazards, especially for those who operate outside of our base camps.

While our focus continues to remain on exposure prevention and control, we realize that some hazardous exposures can and will occur despite our best efforts. And unfortunately, some individuals may develop short-term or

long-term health effects as a result.

First and foremost, we want to ensure those affected individuals get the very best care and treatment they are entitled to through the military health system and the VA. Secondly, these fine veterans have our profound sympathies for the pain and suffering they and their families experience. They have earned our sincere gratitude for their service.

Our Department of Defense Occupational Environmental Health instruction, DoDI 6055.05 requires DoD to share hazard and exposure data with the VA to assist in the adjudication of veterans' disability claims. Such records also are valuable in establishing diagnosis and proper treatment. To ensure that VA is aware of individual hazardous exposures, all exposure-related information is to be entered into each individual's medical record so it will be available to the VA at time of treatment or claims adjudication.

Once the DoD electronic exposure record becomes a reality, and I discuss that more in my written testimony, hopefully it will be in the next few years, these will also be made available to the VA. For a number of years, the DoD and VA have collaborated to the DoD and VA Deployment Health Work Group, as Dr. Peterson mentioned. We use that forum to share on a frequent basis information related to exposures.

While the Department of Defense is in-garrison and deployed, OEH programs have been quite effective in identifying and controlling chemical, biological and physical hazards which our service members or DoD civilians may encounter. We, of course, are fully committed to improving those programs wherever we can.

Mr. Chairman, thank you for the opportunity to discuss the DoD's OEH program today. I appreciate it.

[The prepared statement of Dr. Postelwaite follows:]

Chairman Akaka. Thank you very much, Dr. Postelwaite.

And now we will receive the testimony of Dr. Gillooly.

STATEMENT OF PAUL B. GILLOOLY, Ph.D., CAPT,
MEDICAL SERVICE CORPS, UNITED STATES NAVY (RET),
NAVY/MARINE CORPS PUBLIC HEALTH CENTER

Mr. Gillooly. Chairman Akaka, distinguished members of the Committee, I am Dr. Paul Gillooly, representing Navy Medicine. I am here to discuss Navy Medicine's efforts in evaluating the potential health risks for U.S. Navy personnel and their families living and working at Naval Air Facility Atsugi, Japan from the operation of the adjacent privately-owned Shinkampo Incineration Complex referred to as the SIC.

It is important to make clear there our role in Navy Medicine is to conduct such studies when tasked and to act as advisors to Navy line, who as risk managers, make the final decisions with regard to implementing new policies or visions to existing policies in response to potential health threats in these situations.

The incinerators were installed first in the early eighties and burned municipal waste. Navy health concerns first arose around 1985 when the incinerator applied for and was granted a license to burn industrial waste. Navy Medicine's involvement began in 1994 and continued through the closing of the incinerator in 2001.

Following the closure of the incinerator, we completed a comprehensive health risk assessment report in 2002. Navy

Medicine conducted or sponsored three human health risk assessments, three epidemiological studies and a medical screening study, all of which underwent high level external peer review. In addition, we coordinated the execution of a robust health and environmental risk communication plan.

The first two screening health risk assessments conducted in '94 and '97 raised concerns for both cancer and non-cancer effects from exposure to the incinerator. In October of 1997, the Bureau of Medicine and Surgery was tasked by commander in chief, U.S. Pacific Fleet to conduct a comprehensive health risk assessment. The most significant results of the comprehensive risk assessment were as follows.

The cancer risk for children under the age of six living on base for a three-year tour of duty suggested that a child's exposure to contaminants from air and soil could potentially result in an additional lifetime cancer risk of 1.1 per 10,000. The calculated cancer risk for adults living or working on base for a three- or six-year tour of duty suggested that an adult's exposure to contaminants from air and soil falls within the EPA's acceptable cancer risk range of one in 10,000 to one in a million.

We worked closely with EPA throughout the life of this project and EPA procedures and guidance were used in the development of the sampling plan, collection of the air

quality data, quality assurance audits and procedures and execution of the entire risk assessment methodology. This is an important point in that due to the absence of equivalent regulatory oversight by the government of Japan, the U.S. Navy assumed that role. To ensure that equivalent standard of environmental protection, we were committed to using the accepted and legal risk assessment methodology of the EPA.

To respond to NAF Atsugi community concerns, Navy Medicine was given permission to conduct three health studies, a children's respiratory health study in 1998, a pregnancy loss or miscarriage study for women at NAF Atsugi, also in 1998, and a retrospective cohort study of disease just completed in 2009.

There were no significant findings in either the children's respiratory study or the pregnancy loss study. The recently completed retrospective cohort study of disease was designed to determine if the incidents of disease associated with exposure to the emissions from the incinerator significantly differ for residents of NAF Atsugi from 1985 to 2001 when compared to a similar population in Yokosuka over that same time period.

The study included over 5,600 active duty and over 11,000 family members at NAF Atsugi former-resident cohort and found a significantly higher risk for dermal complaints,

a non-cancer health effect in the Atsugi population when compared to the Yokosuka population. No other area of analysis found significant differences in disease and illness incidents or health complaints.

Navy Medicine then requested Battelle Memorial Institute, an external independent private agency, to review all available Navy Atsugi health risk assessment data and make recommendations for possible additional medical screening. Battelle stated, the conclusion of all previous evaluations are remarkable for their consistency. Residents of NAF Atsugi were exposed to ambient air and soil contaminants due primarily to emissions from the Shinkampo Incinerator Complex that were sufficient to produce an incremental increase in lifetime risk of cancer and increase the risk of respiratory non-cancer effects. However, since the incremental risk was relatively small, it would not be scientifically meaningful to provide broad medical screening for all potential exposed personnel.

In April 1998, at the direction of the assistant secretary of the Navy for manpower and reserve affairs, Navy Medicine developed a comprehensive risk communication and health consultation plan. This plan addressed the means for providing information to the community, establish procedures for providing formal risk communication to everyone onboard NAF Atsugi and personnel negotiating orders to Atsugi, and

implemented health consultations and documentation describing the potential exposure conditions at NAF Atsugi.

In coordinating with the VA, the primary process followed by DoD and Navy Medicine is to ensure the VA is aware of individual hazards exposures and that the information is entered into the medical records of those affected, so it is available to the VA at the time of treatment or claims adjudication.

This process was initiated for NAF Atsugi base residents beginning around 1995 to 1998 time frame and continued until the incinerator closed in 2002. In June 2009, following a brief by Navy Medicine, the DoD/VA Deployment Health Working Group agreed the VA would receive a list of all affected active duty personnel stationed at NAF Atsugi from 1985 to 2001. This collection of information will aid in any future outreach or surveillance activities for this population as indicated.

Presently, Navy Medicine, through the Navy and Marine Corps Public Health Center, has developed a website that provides all publicly available documents related to NAF Atsugi and frequently asked questions section as a means of providing information to former Atsugi residents, their health care providers and the VA. This website also has a link allowing any VA medical care provider the opportunity to contact a Navy physician directly for any additional

information on health issues related to the NAF Atsugi exposures.

Mr. Chairman, distinguished members of the Committee, thank you for the opportunity to share with you Navy Medicine's efforts in evaluating exposures from the incinerator at NAF Atsugi.

[The prepared statement of Mr. Gillooly follows:]

Chairman Akaka. Thank you very much, Dr. Gillooly, for your testimony, and now we will receive the testimony of General Payne.

STATEMENT OF MAJOR GENERAL EUGENE PAYNE, JR., ASSISTANT DEPUTY COMMANDANT, INSTALLATIONS AND LOGISTICS (FACIITIES)

General Payne. Senator Akaka, Senator Burr, thank you for the opportunity to appear before you and participate in this hearing regarding past drinking water exposures at Marine Corps Base Camp Lejeune.

My name is MajGen. Gray Payne and I am the assistant deputy commandant for Installations and Logistics for Facilities. In that regard, I am responsible for Marine Corps facilities and services issues on all of our installations, to include environmental protection.

The health and welfare of our Marines, sailors, their families, and our civilian workers are a top priority for the Marine Corps. The Marine Corps is and always has been a very large family and we all know people, including myself, who are stationed or worked at Marine Corps Base Camp Lejeune during their military careers.

The Marine Corps is deeply concerned with all the military and civilian families who are experiencing or have experienced any health issues. We understand that there are those who believe their health concerns may be a result of time spent at Camp Lejeune. The Marine Corps consists of war fighters and those who directly support war fighters. We have no public health experts.

Accordingly, we rely on the expertise of the scientific organizations like the Agency for Toxic Substances and Disease Registry, or ATSDR, and the National Academies National Research Council, or NRC, to inform our understanding of this issue. We have provided over $14.5 million in funding and have exhausted countless man hours and direct support of research initiatives. Unfortunately, the studies completed to date have not determined whether or not there is an association between the past contamination and adverse health effects.

We would like nothing more than to have those hard questions answered. So we will continue to support and cooperate with the Department of Veterans Affairs, the ATSDR and the NRC in an effort to get answers for those of our Marine Corps family who may have been exposed to volatile organic compounds in drinking water at Camp Lejeune in the past.

Sir, you have my written statement, so in the interest of time, I will conclude my remarks, but I am certainly available to answer any questions you may have.

[The prepared statement of General Payne follows:]

Chairman Akaka. Thank you very much, General. Mr. Resta, your testimony, please.

STATEMENT OF JOHN J. RESTA, SCIENTIFIC ADVISOR, U.S. ARMY CENTER FOR HEALTH PROMOTION AND PREVENTIVE MEDICINE

Mr. Resta. Good afternoon, Senator Akaka, Senator Burr. Thanks for the opportunity for me to speak today about the occupational environmental health exposures in military operations.

My name is John Resta. I serve as the scientific advisor for the U.S. Army Center for Health Promotion and Preventative Medicine, also known as the CHPPM. Workforce at the CHPPM is dedicated to keeping soldiers healthy. One of our primary responsibilities is to provide deployed commanders assistance in identifying, assessing and countering occupational and environmental health hazards.

During military operations, soldiers, sailors, airmen and Marines and civilian employees who also deploy may encounter numerous occupational and environmental health hazards that have the potential to cause illness and injury.

In a written statement, we provided the Committee specific details on what actions we have taken to address these hazards at the Qarmat Ali Water Treatment Plant and the Joint Base Balad Burn Pit with an emphasis on the results of the medical evaluations and health risk assessments we have conducted to date.

These risk assessments have relied on numerous medical

examinations, clinical lab tests, exposure questionnaires and thousands of occupational and environmental samples. At Qarmat Ali, we concluded from the medical evaluations conducted on the soldiers and Department of Army civilians who served at the site during the assessment period that no significant exposure to sodium dichromate had occurred. These results, coupled with the occupational environmental samples that were collected, indicate that all soldiers and Department of Army civilians who served at the site at any time are unlikely to experience future adverse health effects.

This conclusion was validated by the Defense Health Board following their review of the health risk assessment. The Defense Health Board is an independent advisory panel made up of nationally recognized medical and scientific experts from academia and industry. Our burn pit health risk assessments have concluded that smoke exposures could lead to short-term, reversible irritant health effects.

Smoke from burning trash and other wastes, especially in combinations with hot, dry, dusty conditions, cause temporary irritation of the eyes, nose and throat in most people, regardless of their health condition. However, no environmental monitoring to date collected at Joint Base Balad has identified a risk for future adverse health effects.

It is possible that combinations of some exposures, such as smoke from the burn pits, high levels of airborne dust, cigarette smoking, may increase the risk of chronic health conditions in a small number of people. We have no direct evidence of this at this present time. We will be monitoring the air quality at Joint Base Balad in concert with the Air Force and the Navy over the next year, even though municipal solid waste incinerators have largely replaced open burning there.

We are continuing to communicate the findings and limitations of these risk assessments to our soldiers and other service members in an understandable form. We have challenges in this endeavor. For example, it is often difficult to answer the fundamental question, will I get sick?

Current health risk assessment science does not adequately address the health risks from combined exposures like burn pit smoke, nor can it determine whether a disease that has multiple causes and develops over a long period of time in an individual was caused by a specific exposure. We continue to seek more innovative methods to assess health risks and are working with both the National Academy of Sciences and the Defense Health Board.

We continue to address our soldiers' health concerns and are working to ensure that they and their health care

providers are informed about these incidents.

Mr. Chairman, thank you for the opportunity to be here today and discuss our role in these important actions. I look forward to answering any questions you or the Committee might have. Thank you.

[The prepared statement of Mr. Resta follows:]

Chairman Akaka. Thank you very much, Mr. Resta. My first question is for all of the DoD witnesses. I am really interested in the time line for each of the exposures. So General Payne, tell me about Camp Lejeune. When did the Marine Corps first learn about some potential problems there and when were your VA partners and service members first notified about that?

General Payne. Sir, there was an indication, I am told, in approximately 1979 that there were VOCs that were interfering with the testing of the water. But our ability to determine the specific chemicals involved took several years before we were able to do that.

Once we found out the specific chemicals, the specific wells, we began shutting down those wells in late 1984. The first notification was through the base newspaper and I have no idea, sir, why that route was chosen. Looking back from 2009, it seems to me to be a very inadequate response and an inadequate notification, quite frankly. But I cannot speak for why the decision was made at that time in late 1984 and again in 1985 to use that means of notification of the potentially affected residents.

Chairman Akaka. The same question I would like to ask of Dr. Gillooly. Can you share the time frame for Atsugi?

Mr. Gillooly. Yes sir. As mentioned in my introductory remarks, the incinerators were constructed in

the early eighties. They were burning municipal waste. They applied for a permit to burn industrial waste in 1985.

I think those were when the first concerns arose. There were some studies done by other organizations within the Navy, not Navy Medicine, in the late eighties and early nineties. We were not involved in those studies.

We were tasked, or asked rather, in 1994 to come in and look at what had been done and at that point, we had done a screening risk assessment, so that is when we first became aware the air emission problems and wrote a fact sheet and started to begin some risk communication on base at that time.

We followed that up in '97 with another screening risk assessment using data that was primarily collected, not by us, but for compliance purposes, and each time we recommended that we go to a full comprehensive risk assessment study that would involve a year-long study of the air pollutants. In other words, you would sample for the whole year.

As you are aware, the Department of Justice filed suit, I believe, in '99, 2000, against the incinerator complex and it was closed in 2001.

Chairman Akaka. When were your VA partners notified about this or the other service members?

Mr. Gillooly. Pardon? Could you repeat that, please?

I did not hear that. When was--

Chairman Akaka. Yes. When was this information passed on to VA?

Mr. Gillooly. Well, to my understanding, this year, in fact, there was a formal presentation to the VA about the Atsugi retrospective cohort epidemiological studies. So I think, to my knowledge, that is the first formal presentation to the VA.

Chairman Akaka. Mr. Resta, your time line in Qarmat Ali and the burn pits, when did the problems come to light and when were your service members and VA notified?

Mr. Resta. For Qarmat Ali, the problem-- my organization became aware of it on 15 September, 2003, when we were contacted by a Coalition Land Force Component Command, also known as CLFCC. CLFCC, on about the same day, also put the site off limits for all U.S. military personnel.

We deployed and arrived on 30 September and started our field work and completed our study in November 2003 and published a report, which was classified at the time in accordance with guidance, in January 2004. Between 2005 and 2007, there were several informal contacts between members of my organization and various physicians within the VA asking questions.

The first formal data transfer was of the classified

report in December 2008 and then we subsequently prepared an unclassified report which was provided to them in January of 2009. In terms of burn pits, our first indication for burn pits occurred in 2004 at Camp Lemonier in Djibouti on the Horn of Africa, where we conducted our first study.

We identified the risks at Balad as part of an occupational environmental health site assessment in the 2006 time frame, started conducting environmental sampling there in 2007. That environmental sampling continues with certain peeriosity today and we started providing again informal, at the technical level between physicians, information on that probably as early as 2007.

It provided formal information to the VA in, if I'm not recall--May of this year. They have gotten all the data to date that we have, all the sampling data that we have on Joint Base Balad to date.

Chairman Akaka. Thank you. Let me ask Dr. Postelwaite if you have any further comments on this.

Dr. Postelwaite. I think the time lines are accurate, sir. I have nothing to add to that.

Chairman Akaka. Dr. Peterson, what happens when information about exposures arise at VA's doorsteps, and Dr. Hunt, do you begin to assess the health of a veteran who has served in an area where exposure is known to have occurred?

Dr. Peterson. Mr. Chairman, I would reference back to

my earlier opening statement about the DoD/VA Deployment Health Work Group. As other witnesses have explained on the DoD side, that has become the venue in the last few years of both discussions related to exposures and a venue for the transfer of information, to include things like lists of potential people exposed.

When through that working group the VA is notified, we have a discussion with others at the Health Work Group, and internally too, VA, concerning the appropriate course of action. What do we feel based on work done by DoD up to that particular period of time in terms of exposure, how much of a risk is there?

We identify methods by which to communicate with both veterans and providers that the exposure has occurred and what they need to be concerned about from a provider's perspective, from the prospective of care and where necessary, we begin to conduct medical surveillance and provide appropriate health care as authorized under statutory authority.

I think Dr. Hunt can provide us a very interesting perspective in terms of what you have asked him to do and also to kind of balance out what I said in terms of when that information is provided to our providers in the field and veterans are aware and come in asking questions, how those questions are addressed and how the care is handled at

that point.

So I will ask Dr. Hunt to address that.

Chairman Akaka. Dr. Hunt?

Dr. Hunt. First I would like to thank the chairman and ranking member for the invitation to come speak with you today, as well as the staffers. I commend you on the work that you are doing.

I feel like I am sitting here with 3,000, 3,500 veterans that I have seen over the years. I am a primary care physician, occupational environmental medicine trained, and have done many hundreds of Gulf War registry exams, Agent Orange exams, Project SHAD exams, ionizing radiation exams, and I have sat with many of these veterans and feel like I will try to represent today their needs and their experiences.

I cannot get the stories out of my head that Stacy told today and Laurie and Russell. I think of Senator Burr's friends, Jerry and David. Day in and day out, I sit with these individuals that have concerns about environmental agent exposures. I feel like there are two very important kind of paths that these situations take.

If we have a situation like Qarmat Ali, Camp Lejeune, where we have what seemed to be fairly clear exposure incidents, I feel like we are putting in place both through the work in the DoD and CHPPM and the Office of Public

Health Environmental Hazards with our risk centers, a very nice approach that I wish Senator Rockefeller was still here because it is still not where we want it to be. But we are really moving in the direction of being able to take care of these incidents in a way that more quickly provides relief for these veterans and their families.

Many of the people that we see, and I think of Senator Burr's comments, situations where we still do not have the answer, or situations where we are waiting for science. Tuesday, going to clinic, I ran into a Gulf War veteran that I had not seen for six or seven years. I had done his initial Gulf War registry exam back in '94, '95. Hadn't seen him for a long time. He was doing great. He had been down to Florida. He was being seen in a VA down there.

We had a short chance to talk and I thought, he is really doing well, this fellow. When he first came in, he had medically unexplained symptoms, as 20 percent of the veterans from the first Gulf War did. We still do not know exactly what that is about. We still do not fully understand it.

But what we do know is that there are many things we can do to help these veterans before we fully understand everything that is going on in terms of direct associations between exposures and health problems.

So I guess to answer your question, what we try to do

when a veteran comes in is to first of all, acknowledge their service, acknowledge their sacrifice, take a step back from the chief concern about the exposure and the health concerns and reassure them that we will be spending time on that, but to take a step back and look at the greater context of their needs and their situation, particularly combat veterans.

These exposures in combat particularly are a part of a very complex matrix of exposures that have to do with environmental agents and psychological traumas and sleep deprivation and all the other potentially deleterious experiences a person has in combat.

So we try to assess kind of the full spectrum of risks that this person has been exposed to. We try to put the assessment of their environmental exposures in the context of that overall risk. We try to get the services set up that they need, including getting them service conducted, getting them benefits, getting them the support that they need so that even before we know the answers to is this particular symptom related to this particular exposure, there are a lot of things we can do to help them get back on track and get back on their feet, particularly combat veterans.

Chairman Akaka. Thank you very much, Doctor. Senator Burr, for your questions.

Senator Burr. Thank you, Mr. Chairman. I apologize to the witnesses that I was not here to hear the testimony, but I have tried to go over it as best I could.

Let me go to you, Dr. Peterson, and to any of your colleagues from the VA that feel appropriate to potentially answer. The Navy sent out letters to veterans stationed at Camp Lejeune between 1957 and '87, encouraged them to participate in the health registry. To date, roughly 140,000 individuals responded and it is reasonable to conclude that many responded because they are in fact suffering from health problems and are worried they could be linked--it could be linked to the service at Camp Lejeune.

Has the Navy or the Marine Corps volunteered to share the names, addresses of those individuals with the VA potentially so the VA could let them know whether they are eligible for VA care? In other words, have they provided the VA the registry?

Dr. Peterson. Yes, in fact, the VA is providing veterans with information about this issue and offering contact information and referrals to a registry that the Navy has established in the past. So we have--the Navy has been proactive in--

Senator Burr. The 140,000-plus name registry has been provided to the VA?

Dr. Peterson. Yes.

Senator Burr. Okay. Has the VA proactively gone after those 140,000 individuals to counsel them relative to their potential benefits within the VA system?

Dr. Peterson. We make the benefits aware to all of our veterans through a variety. We have not specifically targeted that group. What has happened coincidentally with working issues like informing our veterans and going after them and indicating what benefits there are available to them, we have also--

Senator Burr. They have responded to a Navy/Corps notification that they were at Camp Lejeune over a period of time where they potentially were exposed to toxic substances in the water. That list of people who responded and said, I acknowledge I was there, I might have a concern, has been supplied to the VA, but we do not do anything proactive from a standpoint of the VA to reach out to those individuals?

Dr. Peterson. No, we do reach out proactively. I guess the point I am trying to make is while we are in the process of beginning to do that, we are also finding out that the National Research Council has produced a document, as we talked about earlier on the first panel, that indicates from their findings that we need to move forward in terms of research. Having been accomplished, there is no more research that indicates anymore studies need to be done. This is a finding of the commission.

Senator Burr. Dr. Peterson, seriously, I do not want to get into the NRC results with the Veterans Administration. I look at the VA from the standpoint of the agency mandated to provide service, health care service specifically, and you have thrown me a curve ball because the VA says and the Marine Corps says they have never--the Marine Corps says they have never given the VA registry the registry, and the VA says they have never gotten the registry.

For you to tell me that you have the registry is something new.

Dr. Peterson. Okay. Brad, did you want to answer that?

Senator Burr. Mr. Mayes, would you like to clarify that?

Mr. Mayes. Senator--I think I turned it off there. I am not aware and I can speak for what we have done in the Benefits Administration, that we specifically have the names to conduct the outreach. We have been made aware of the situation at Lejeune.

What we have done on the benefits side of the house is we have gone out and tried to make our field personnel sensitive that you are going to start seeing veterans coming into our regional offices--

Senator Burr. Let me ask a real specific question.

Mr. Mayes. Yes, sir.

Senator Burr. To whoever would like to take it. Have you taken whatever list you think has been provided for you and compared it to the veterans that are enrolled within the VA system to see who might already be enrolled, receiving services from the Veterans Administration, where it would be extremely beneficial to that veteran for their doctor to know that they were potentially exposed to toxic substances at Camp Lejeune in their treatment?

Mr. Mayes. Sir, the short answer is I do not think we have the registry with all of the names. So to my knowledge, we have not matched that up.

Senator Burr. Well, let me go to the logical next question.

Mr. Mayes. I know what it is.

Senator Burr. Isn't that essential to the performance of your job, the delivery of health care to individuals, just if we limit it for a second to the ones who qualify for VA benefits? I mean, Dr. Hunt, I know exactly what you were saying earlier. Having as much information about the individual you are treating gives you specific insight as to the treatment therapies that you might pursue, knowing where they were exposed to the same thing if it is two--if it is one place versus the other might give you insight.

Based upon others you have seen, to me, it seems like

an issue that the VA would actually be proactively out with the Corps and with the Navy, saying, we need this to do our job. The more information we get, the more effective we can be at the treatment of these individuals.

Let's forget the ones that do not know whether they qualify today. Does that--am I right there?

Dr. Hunt. [Nodding affirmatively.]

Senator Burr. I take the shaking of the head in the affirmative--okay. Dr. Peterson, in your testimony, you state that the VA does not have special authority to enroll Camp Lejeune veterans and their family members in the VA health care system.

As you know, I have introduced legislation that would explicitly authorize the VA care for veterans and family members that show illnesses that might be the result of their time at Camp Lejeune. It appears to me that the VA could create a special enrollment category for those affected veterans using the secretary's general authority to provide needed health care to categories of veterans not specified in law.

Does the VA have such legal authority?

Dr. Peterson. I can't answer that question without asking general counsel. I do not know. I do not know.

Senator Burr. Could I ask you to take that to the general counsel?

Dr. Peterson. I would be happy to, sir.

Senator Burr. I think you will find out the answer to that is the affirmative.

Dr. Peterson. Okay.

Senator Burr. And if that is the case, and I will not pose this in the form of a question, I will pose it in the form of a statement. Why would we rather wait to see if I pass legislation versus initiate the authority of the secretary to create through that general authority the coverage for individuals that we fear might have a condition the result of having served at Camp Lejeune during a period that the groundwater was contaminated to a degree yet to be determined, okay?

Mr. Mayes, I cut you off earlier and this question might go at the heart of it and I will let you answer in a complete statement. If veterans who have evidence that they were stationed at Camp Lejeune, have evidence that they have one of the diseases that might be the result of that contaminated water, how does VA evaluate a disability claim for an individual in that--that might fall into the matrix?

Mr. Mayes. Yes sir, I think I understand the question. At the present time, we need evidence, of course, that they have the disease and then we would put them at Camp Lejeune, which we would certainly not question if they were at Camp Lejeune during the affected period, that they were clearly

exposed to whatever was in the water they would be drinking and bathing and using the water.

And then we would be looking for a medical nexus opinion between the disease and exposure to some toxic substance that might have been in the water. At the present time, that is required for service connection in those particular cases.

Senator Burr. If I happen to visit any VA facility in the country, how familiar would that person who sees that veteran coming in, that doc in that facility be about Camp Lejeune potential contamination if in fact they found somebody that met that criteria; would the average person out there even know anything about it?

Mr. Mayes. The average adjudicator out there should know about it, Senator. We have a monthly call with all of our field managers that manage those veteran service centers that adjudicate those claims. It was in June that we made all of those managers aware that this was an issue.

We had anecdotal evidence that people were coming in and filing claims, that they needed to be sensitive to this and that in fact, they had to sympathetically view those claims, order an exam if it is necessary, but at the end, they would still need the disease exposure at Lejeune and then that nexus opinion.

Senator Burr. I take for granted somewhere there

exists a memorandum stating that information to them?

Mr. Mayes. Sir, we have not put it in a formal, what we call a fast letter, which would be guidance. We do document--we do document what we say on those calls.

Senator Burr. I feel fairly confident you will after this hearing.

Mr. Mayes. Yes, sir.

Senator Burr. Therefore, I would like you to send me a copy of it when you do.

Mr. Mayes. Will do, Senator.

Senator Burr. For the purposes of the Committee.

Mr. Mayes. Yes, sir.

Dr. Hunt. Senator?

Senator Burr. Yes, sir?

Dr. Hunt. On the clinical side, we--that information is being disseminated. Two weeks ago, we had a conference on post-combat care in the VA. There were 3,000 people that attended from around the country. It is the biggest conference the VA has ever had.

There were several sessions at the conference that were done by the Office of Public Health Environmental Hazards, including one talking about Camp Lejeune and these other four incident--exposure incidents as well. Also, we have monthly conference calls for this post-deployment in-grade care initiative and the one next month is done by the War-

Related Illness and Injury Study Centers to further disseminate information to clinicians in the field about Camp Lejeune and these other exposure incidents.

There is also a monthly conference call through the Environmental Hazards Group where they discuss this too. So clinicians certainly are getting the word about these veterans. So if they come in, at least clinicians are increasingly aware of.

Senator Burr. Thank you for that, Dr. Hunt, and thank you for noticing that I blurred the line between disability back to medical care, unintentionally, but I am glad that I did so that you could sort of fill me in on that.

Mr. Chairman.

Chairman Akaka. Thank you very much, Senator Burr. This question to Dr. Hunt builds on what Senator Burr was asking about.

VA has said that records are shared between DoD and VA for purposes of adjudicating claims, but what about for the purpose of providing health care? The bottom line is, can a VA doctor look at a veteran's health record and tell what environmental hazards they were exposed to during their deployment?

Dr. Hunt. One of the advantages of having been in the system for a period of time is knowing how absolutely absent that sort of communication was in the past. There is no

question that we are moving forward with bidirectional health information exchange, with remote data access.

I confirm the chart when I am seeing a patient. I can click on remote data. I can get data from Fort Lewis or from military treatment facilities and among those data are information from the Post-Deployment Reassessment--Health Reassessment, PDHRA, which has information on exposure, and that is very useful for sure.

So we are increasingly gaining access to those sorts of records that are very helpful.

Chairman Akaka. On the question of Qarmat Ali, Dr. Postelwaite, in your written testimony, you called DoD's response to the exposures at Qarmat Ali exemplary. How would you characterize DoD's efforts to prevent exposures there? Specifically, how did your program help soldiers and workers at the water treatment plant?

Dr. Postelwaite. Thank you, Senator. Actually, that testimony you quoted is Mr. Resta's, but I would like to take an opportunity to address your question, if I may. The word "exemplary" that was used in that testimony was a quote from the Defense Health Board when they reviewed the Army medical response to Qarmat Ali. They found it to be timely based on the minimal time since notification.

The Army was able to put together a team of experts, including occupational health physicians, get them into

theater. This is 2003. This is a very difficult time because we were very much engaged in hostilities at that time. This is out a way from the base camp where there is lots of protection.

But nevertheless, the leadership said go for it and they were pulled in very, very quickly. The environmental assessment was done very quickly, as well as the medical assessment. We felt like under very extraordinary circumstances that that was a very timely response.

Chairman Akaka. Dr. Postelwaite and Mr. Resta, Dr. Gibb stated that the symptoms that have been reported by soldiers and civilian workers at Qarmat Ali are consistent with what has been experienced by other workers similarly exposed. He also said that blood samples were not taken until one month after remediation measures were taken to limit the exposure and that kind of delay does not allow for an accurate measure of exposure.

How confident are each of you that you have properly identified service members' risk of exposure at Qarmat Ali?

Dr. Postelwaite. This is a very complex situation with Qarmat Ali, Senator Akaka. Again, 2003, when this occurred, the Army came in very quickly, did the assessments on the individuals that were currently assigned there at Qarmat Ali, became aware of some units that had been there previously, felt after the environmental assessment was

done, taking a look around the area, interviewing the troops and during that time, I think as is in the reports that you all have read, there were some symptoms noted primarily related to dried nasal membranes and upper respiratory kinds of symptoms that would be very consistent with the desert environment.

At that point in time, the team had no knowledge at all of these severe effects that have been coming out in the media over the last year since KBR raised these issues. That was not brought up at the time, so based on the information that was available when those assessments were done, including the blood chromium, which we felt was the correct test because it measured the chromium in the red blood cells, which stays around longer, the hexavalent chromium that you would find in the serum, based on symptoms, based on the physical exams that were given, and based upon the blood samples that were drawn at the time, we felt very confident that we had fully assessed the situation and that there were no reasons to suggest long-term health effects.

As I said, we now have additional information and we are certainly reopening our book on this to take a closer look and we are very interested in what the VA physical exams will show for these individuals to see whether those health symptoms that they were experiencing may be

consistent with these exposures.

So this caught us very much by surprise because we did not have all that information. We had an individual this morning, the medic that spoke to us, who indicated that he took care of treatment for a number of the people in his unit, which that is very valiant of him, but it may have prevented some of that information related to health effects from actually getting back to the medical facility where people could start putting two and two together to identify a real problem.

So there are a lot of complex issues to this that are not easily navigated.

Chairman Akaka. Mr. Resta?

Mr. Resta. If I could just add a few things, sir, is that the physician that ran this response is a board-certified occupational medicine physician who works in industrial situations for the Army and is well versed in occupational medicine.

Through his physical examinations and ancillary testing, not solely blood chrome levels, but including pulmonary function tests, chest x-rays and things like blood and urine and liver functions and the like that are outside of my area of expertise, he concluded that the symptoms that veterans or soldiers at that point were complaining about, the signs that he observed were not consistent with

hexavalent chromium exposure. One.

Dr. Gibb's testimony had a few factual errors in it which makes me believe we need to share some information with him. The blood chemistries that we did for hexavalent chrome, 73 of 135 were less than the level of detection, which was 0.5 micrograms per liter, not 5 to 6 micrograms per liter, as he testified.

Twenty-one of 135 were in excess of 1.0 micrograms per liter with a maximum detected of 8.7 micrograms per liter. And these are well within U.S. national averages. At the time we were using a national average range of 0.1 to 10 micrograms per liter. But the blood tests alone--just to clear up, the blood test alone was not the sole determination of whether or not a significant exposure had occurred. It was predominately the physical examination by the occupational medicine physician. And so I just wanted to clear that up.

Chairman Akaka. Before I yield to Senator Burr, I would like to ask this question on burn pit exposures. Dr. Postelwaite--

Dr. Postelwaite. Yes, sir.

Chairman Akaka. We have heard stories about service members experiencing medical difficulties due to service near burn pits in Iraq and Afghanistan. For several years now we have known this. What active measures does your

office take to ensure the environmental safety of our service members around the areas of these burn pits?

Dr. Postelwaite. Yes, sir. Burn pits, as you probably know, were utilized at a number of camps within Iraq and also Afghanistan for an expedient means to dispose of waste that was generated at those camps, so that the waste itself would not generate a health hazard.

Unfortunately, some of these burn pits were located quite close to the camps, in some cases, upwind of the camps. Some of that was due to the fact with hostilities in the area, the commanders did not feel like they could locate them very far away from the installations without putting their people at risk.

In other cases, the burn pits were located in the periphery, but as the base grew in size, the population expanded around it. As a result, we have a number of situations like this in theater. The largest burn pit in theater, Balad Air Base, at the time was the one that was most easily studied. We could study it without putting people out in the far reaches of the territory where their protection would have been an issue.

We felt because it was the largest burn pit, this one would be a good one to study in depth because we felt it would be representative of the others. There were over 400 air samples that were taken at Balad Air Base in 2007,

constituted the data necessary for a risk assessment as well as an addendum.

Both the addendum and the risk assessment looking at all the substances that were analyzed did not indicate a health risk. We took that information, that risk assessment, and had it reviewed by the Defense Health Board because we wanted third-party validation that our interpretation was correct.

Nevertheless, we do feel like some people probably have suffered some untoward health effects as a result of it. We do not feel like the numbers are large based on the total numbers of people that probably were exposed to smoke throughout the theater. In fact, the post-deployment health assessments that was mentioned earlier, I believe the figure that I saw last were about 56 percent of all the individuals deployed actually checked that square on the post-deployment heath assessment.

So it was a very wide exposure. We have looked at our health outcome data from our returning veterans. We just are not seeing any significant elevations of the kinds of conditions that we would expect as a result of exposure to the smoke. But with that said, we are continuing to peel back the layers of the onion, if you will. We are doing site specific studies on just the troops who were at Balad, for example, to see if their health experience was any

different.

Right now we do not have any strong evidence to suggest that this smoke affected large numbers of people, but we really do feel like some people probably had increased susceptibilities. They may have had combined exposures. They may have had previous health conditions which would place them at greater risk.

So we will not say that nobody is suffering from these exposures.

Chairman Akaka. Let me follow up with Mr. Resta. According to your testimony, the risks of burn pits were recognized as far back in Bosnia in 1996. Were the soldiers located near burn pits in Iraq and Afghanistan issued any protective gear or warned in any way of the potential harms associated with burn pits?

Mr. Resta. I am not aware that there was any specific personal protective equipment that was ever issued to any soldiers. I have heard anecdotes, stories of soldiers who were immediately downwind pulling guard duty wearing dust masks and things like that to essentially try and reduce the smell per say. But I am not aware that we have ever issued anything there.

In terms of notification, once we got the results of the first risk assessment, we tried to, again, communicate those risks to the people present at Balad via various town

hall meetings, fact sheets and the like. The challenge of doing that in such a large operational setting is that a lot of the people who had previously been there were no longer there and new people were there and the situation and conditions had actually changed.

That is one of the reasons that we embarked on additional sampling and continue to do that today even while we are operating incinerators, which the last report I received has reduced the amount of open burning by over 90 percent.

Chairman Akaka. Thank you. Senator Burr.

Senator Burr. Thank you, Mr. Chairman. General Payne, welcome, and let me say for the record upfront, when this controversy at Camp Lejeune existed, you were not in your capacity today.

Now I have in my hand, as do probably numerous people, Base Order 5100.13B and that is entitled Safe Disposal of Contaminants and Hazardous Waste, specifically prohibited the improper disposal of, and I quote, "organic solvents" and defined improper practices as those, and again I quote, "create hazards such as contamination of drinking water."

Now in your testimony, I interpreted what you said to mean the Marine Corps did not violate any regulations. I guess I have to ask, is not complying--how does not complying with the base order square with that?

General Payne. Sir, again, looking back with the lens of 2009, you look at that and one just shakes their head as to how this happened and how it--and the time frames. I think that you have to start with understanding that even in 1984, when we started closing the wells in early 1985, when we concluded, that was still long before these chemicals were regulated.

TCE and PCE were not even regulated until 1989 and 1992, respectively. I can only surmise, sir, because I was not involved in the decision making at that time, I can only surmise that we simply did not understand the ramifications of that contamination.

Senator Burr. But would you agree with me pertinent words here are "organic solvent?" I mean, there is a little room for poisonous chemical waste, other unsuitable compounds, but organic solvent definition has not changed over time; would you agree with me on that?

General Payne. Sir, I am not a scientist. I am a war fighter, do I really cannot answer that.

Senator Burr. Okay.

General Payne. Whether it has changed, whether we knew what that meant at the time, and whether that definition has changed, I'm sorry, sir.

Senator Burr. Well, we both cannot reconstruct the personnel or the decisions that were made at the time and I

think in an effort to try to provide a fresh start, my hope is that we can identify we have done some things wrong in the past and that now is time to make the commitment to get the information we need to know how to go forward.

Let me, if I could, turn over to Dr. Gillooly.

General Payne. And we concur with that, sir.

Senator Burr. Thank you, sir. Why was the--I take for granted, you are the Public Health Center?

Mr. Gillooly. Yes, sir, Navy-Marine Corps Public Health Center.

Senator Burr. Did that used to be called the Navy Environmental Health Center?

Mr. Gillooly. Yes, sir.

Senator Burr. So you have changed your name?

Mr. Gillooly. Yes, sir.

Senator Burr. Okay, I just wanted to make sure I asked the right person the right question. Why was NRC not asked to review a broader set of risks?

Mr. Gillooly. We had the NRC review our previous two screening health risk assessments in '95 and '97. They more or less agreed with our findings and conclusions for those.

Senator Burr. The 2000 draft that they reviewed, they found--they raised several questions. How did you incorporate into the final rule what they raised?

Mr. Gillooly. Sir, we took their recommendations

seriously. We worked approximately six more months just working those issues, incorporating where we could their primary issues about reducing the uncertainty and better characterization of the health risks. We provided to them a 100-page report that listed point by point which of those items we could actually do that were practicable at that point in time and they were included in the final report.

Senator Burr. But several of the issues were structural problems with the way you conducted your analysis throughout the thing. I am not sure how you could go back and remediate that unless it was to guess.

Mr. Gillooly. Well, I think I should back up. Number one is, when we first asked the National Resource Council to look at the report, typically you have an opportunity to discuss with them what you intend to do onsite and we were not able to because the Department of Justice had litigation ongoing.

So issues such as challenges and limitations of trying to do a risk assessment overseas from a source that was privately owned outside the fence were very real. For example, the gold standard would be to get on that stack, that incinerator stack and measure the pollution coming out of the stack. We did not do that.

Senator Burr. Adopting that rationale would tell me that you would lean heavier on a contractor versus a DoD arm

to actually conduct more of the study.

Mr. Gillooly. Well, it is a team approach. We had both contractors and--

Senator Burr. Okay. Why would the NRC not be asked to look at the final report before it was published?

Mr. Gillooly. All I can tell you is the Navy Bureau of Medicine and Surgery forwarded the final draft report to the commander in chief, U.S. Pacific Fleet, for release. What happened after that I cannot comment on. In fact, I was surprised today when Dr. Feigley indicated he had not seen that.

Senator Burr. Mr. Resta, in your testimony, first paragraph, excuse me, first paragraph of burn pits, you said it should be used to minimum extent possible based on the operational situation. When open burning operations are necessary, they should be located as far downwind of personnel as possible.

That would suggest that there is a human risk to those burn pits. Am I making the right assumption?

Mr. Resta. Yes sir, you are. Breathing smoke is not healthy.

Senator Burr. Then share with me this. Earlier this year, in the Defense Authorization Bill, I offered an amendment to study the issue of burn pits. The Committee rejected my amendment and stated this, due to objections

from the Department of Defense.

Share with me any rational reason why the Department of Defense would not want to know whether burn pits had more than just smoke inhalation problems for our troops.

Mr. Resta. I certainly cannot speak for the Department of Defense given where I am located in the Department of Army. I can hypothesize that perhaps our objections were is that we are already working with the National Academy of Sciences on that very issue.

But I would have to really take that for the record and come to find out what exactly we forwarded up there.

Senator Burr. Take that back for the record.

Mr. Resta. Yes, sir.

Senator Burr. Because I think even though you are in a very specialized area, I would think that you would be consulted on a decision like that.

Mr. Chairman, I have a ton more questions. I would like unanimous consent to be able to provide written questions and to get answers because one, we have been here a long time and I know you have things to do. These witnesses have been here for a long time. But I do want to make one observation.

Chairman Akaka. Yes, Senator Burr. I have some questions too. We will certainly--

Senator Burr. Okay, may I make one observation?

Chairman Akaka. --send them for the record.

Senator Burr. This Committee has struggled to try to makes seamless the handoff of active duty troops to our Veterans Administration from the standpoint of the health care needs of our veterans.

Today I have come to the conclusion that our problem is far worse than just working with DoD on the electronic medical records so that this is a seamless process where when you go into a new health care system they know exactly what you have been exposed to, they know exactly where you have been, they can assess what your health needs are based upon where you have served and what you might have been exposed to.

Today I found that it is much worse because even where we identify things that potentially could cause long-term health conditions to our active duty Reserve and called-up Guard, there is not an attempt to download that information to where we know these individuals will be at some point receiving their health care.

I sort of paint everybody on one side and I also paint everybody on the VA side for not screaming about the need to get this information. We have made tremendous progress between VA and DoD to try to get medical electronics records that are seamless.

If in fact exposure to burn pits has some potential

downstream effect, then I want to make sure a VA doctor knows exactly where that person was so that they can see them and treat them based upon what their exposure might be.

If they were at Camp Lejeune for those years, that is absolutely essential to the VA side to take care of them.

If they were exposed to an incinerator and that really does not matter what the conclusion of the report was, that is pertinent information to a medical doctor who is making a decision about an individual based upon what he sees and what he reads. And if he only has what he sees, the care cannot be as complete as if he matches that with what he reads.

So I would hope on both sides of this table that the VA would become proactive at asking for the information that is pertinent to delivering care to these warriors on the active duty side, that we understand this is not about minimizing the potential effects of what we are in charge of. It is making sure that we get the most pertinent information to all the people that can affect the best quality of life long term for the individuals that may or may not have been affected.

Again, I thank all of you for your testimony. Thank you, Mr. Chairman.

Chairman Akaka. Thank you very much, Senator Burr. This has been a great hearing. In closing, I again want to

thank all of our witnesses for appearing today and for your responses as well.

To the veterans and family members of veterans affected by the exposures discussed today, I truly appreciate your willingness to share your stories with the Committee. I understand that these deeply personal matters are sensitive and not always easy to speak so freely about.

As chairman, I am committed to ensuring that VA continues to study the health effects related to these exposures and that VA adapts to meet the treatment needs of individuals affected by toxin exposures.

As I mentioned in my opening statement, in order for VA to do this, DoD must first determine who was exposed and what they were exposed to and the health consequences of such exposure. The information must then be shared with VA.

This Committee is not charged with direct oversight of DoD. That falls to the Armed Services Committee. However, this Committee shares the responsibility for oversight where the roles of DoD and VA intersect and we share several members, including me and Senator Burr.

To quote President Obama, we cannot let burn pits and other exposures be this generation's Agent Orange. We have a responsibility to ensure that the newest era of veterans receive the highest quality of care and prevent the tragic stories we have heard today from happening again.

I thank you again for sharing your comments and thoughts and without question, it is going to be helpful to what we are trying to do to help the veterans of our country.

This hearing is now adjourned.

[Applause.]

[Whereupon, at 1:37 p.m., the Committee was adjourned.]