

MARINE SENATE LIAISON OFFICE
ROOM 182, SENATE RUSSELL BLDG.
WASHINGTON, D.C. 20510
OFFICIAL BUSINESS

CAMP
LEJEUNE | HISTORIC
DRINKING
WATER



Camp Lejeune Historic Drinking Water

Questions and Answers

CAMP
LEJEUNE | HISTORIC
DRINKING
WATER



July 2010



A MESSAGE FROM THE COMMANDANT OF THE MARINE CORPS

The welfare of our Marines and their families has been, and always will be, a top priority for the Marine Corps. When an issue arises that affects the health and safety of members of our Marine Corps family, we take action to correct the problem and prevent a future recurrence. One such concern that has recently taken center stage is previous contamination in Camp Lejeune drinking water. This booklet is designed to provide relevant information on the issue and answer many of the questions that have arisen concerning this matter.

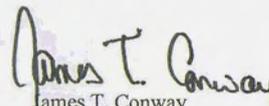
Speaking to our Marines, families, and civilian work force, I would first like to emphasize that the quality of the drinking water at Camp Lejeune today meets or exceeds current standards. In the early 1980s, chemicals were discovered in some Camp Lejeune drinking water systems. In 1984 and 1985, the groundwater that supplied certain wells was determined to be the source of the chemicals. Although drinking water regulations did not regulate the contaminants at the time — and would not until 1989 and 1992 — the Marine Corps took action. Each well that was found to be affected was immediately shut down. Base officials reached out to those living and working at Camp Lejeune through messages in the base newspaper, engagement with the local media, and a letter from the Commanding General.

Today, the Marine Corps continues to work diligently to identify and notify individuals who may have been exposed to the contaminated water. The Marine Corps maintains a call center and a comprehensive outreach and notification program, which includes a website and online registry, direct notification by letter, and supplemental notifications through the media.

The Department of the Navy has provided more than \$22 million in funding to support scientific research to determine the impact contaminants may have had on former residents of Camp Lejeune. To date, the scientific community has not established an association between exposure to the contaminated water and health conditions reported by former residents of Camp Lejeune.

We are committed to providing our Marines and their families the answers they deserve, and we will do everything in our power to ensure that former residents remain informed on the issue and receive results of any research initiatives and studies.

Semper Fidelis,


James T. Conway
General, U.S. Marine Corps

Background and Map



Marine Corps Base (MCB) Camp Lejeune is located in Jacksonville, North Carolina within Onslow County. The community is home to an active duty, dependent, retiree and civilian employee population of more than 165,000 people. The Base is a major economic presence for the surrounding community and maintains a close relationship to ensure quality living for both military and civilians throughout the area.

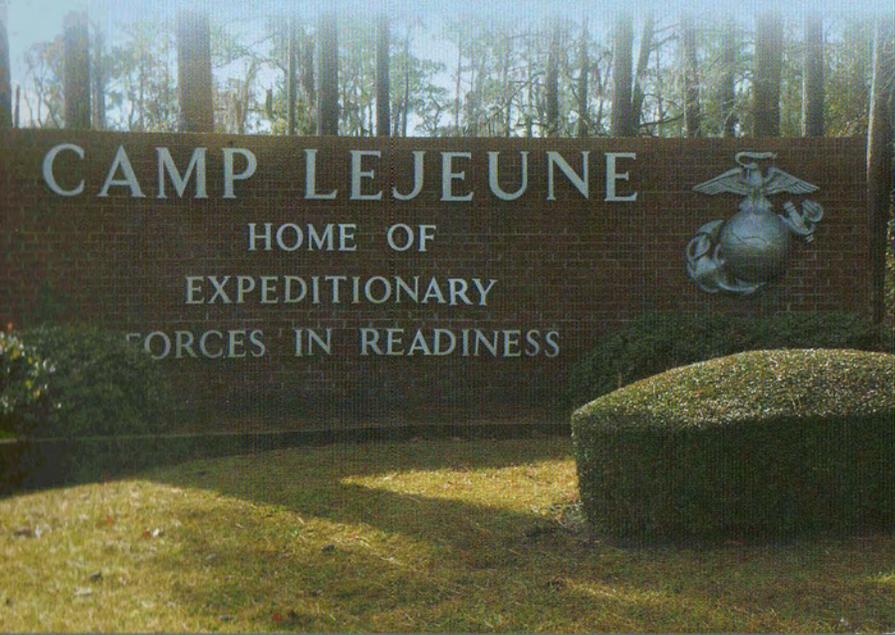
MCB Camp Lejeune's mission is to maintain combat-ready units for expeditionary deployment. To help prepare warfighters for combat and humanitarian missions abroad, MCB Camp Lejeune utilizes 236 square miles or 156,000 acres, including 11 miles of beach capable of supporting amphibious operations, 34 gun positions, 50 tactical landing zones, three state-of-the-art training facilities for Military Operations in Urban Terrain and 80 live-fire ranges.

MCB Camp Lejeune provides housing, facilities, training lands and logistical support for Fleet Marine Force Units and other assigned units. The Base covers 26,000 acres of water, 29,000 acres of forested wetlands, 20,000 acres of non-forested wetlands, 72,000 acres of upland forests and 7,500 acres of urban/developed land.

MCB Camp Lejeune currently operates five drinking water systems that serve various parts of the Base. In the early 1980s, industrial chemicals, that as a group are called volatile organic compounds (VOCs), were found in drinking water systems that served the Tarawa Terrace and Hadnot Point areas at MCB Camp Lejeune. These chemicals, primarily trichloroethylene (TCE) (a commonly used metal degreasing solvent) and perchloroethylene (PCE) (a commonly used dry cleaning solvent), but also benzene (a fuel component), and other

related chemicals were found to be impacting certain drinking water wells that supplied drinking water systems in these areas (no drinking water regulations applied to these chemicals at the time). Once identified, the impacted wells were promptly taken out of service. Recent studies have

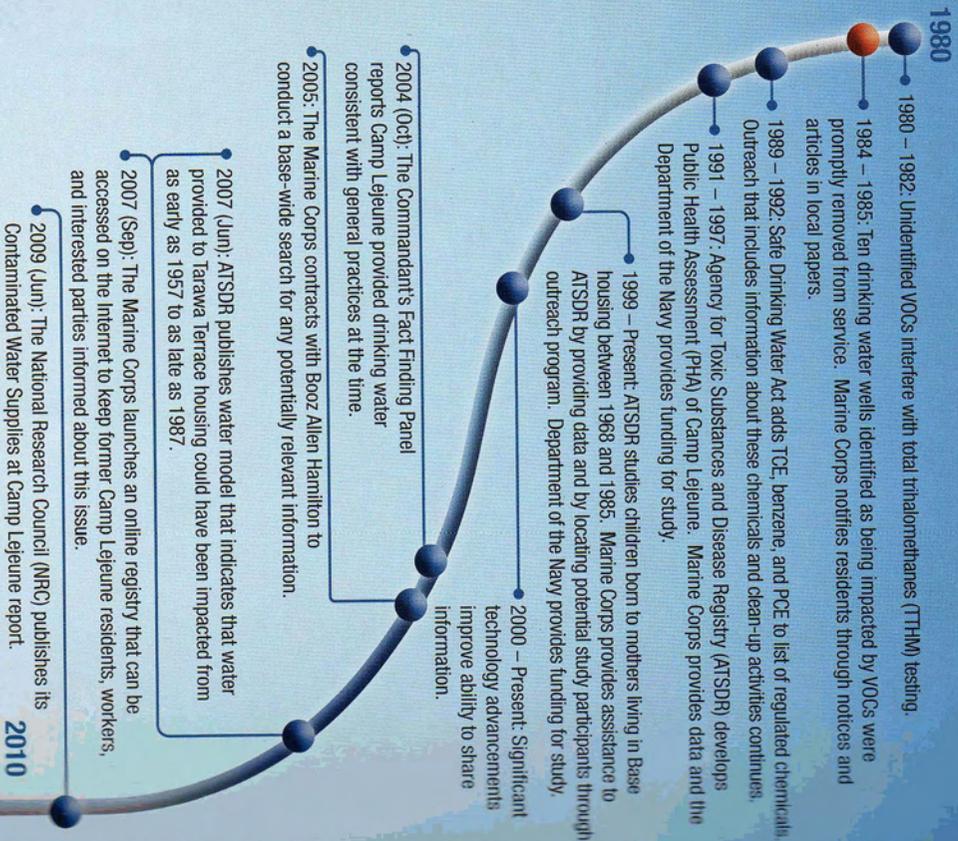
estimated that drinking water systems at Camp Lejeune may have been impacted from 1957, or perhaps earlier, until as late as 1987. Today, Camp Lejeune's drinking water is tested more frequently and for more chemicals than required and meets regulatory standards.

A photograph of a large, dark stone sign for Camp Lejeune. The sign is set against a background of tall, thin trees. The text on the sign is in a serif font. To the right of the sign is a large, circular, well-manicured bush. The overall scene is outdoors with green grass in the foreground.

CAMP LEJEUNE
HOME OF
EXPEDITIONARY
FORCES IN READINESS



EXECUTIVE TIMELINE



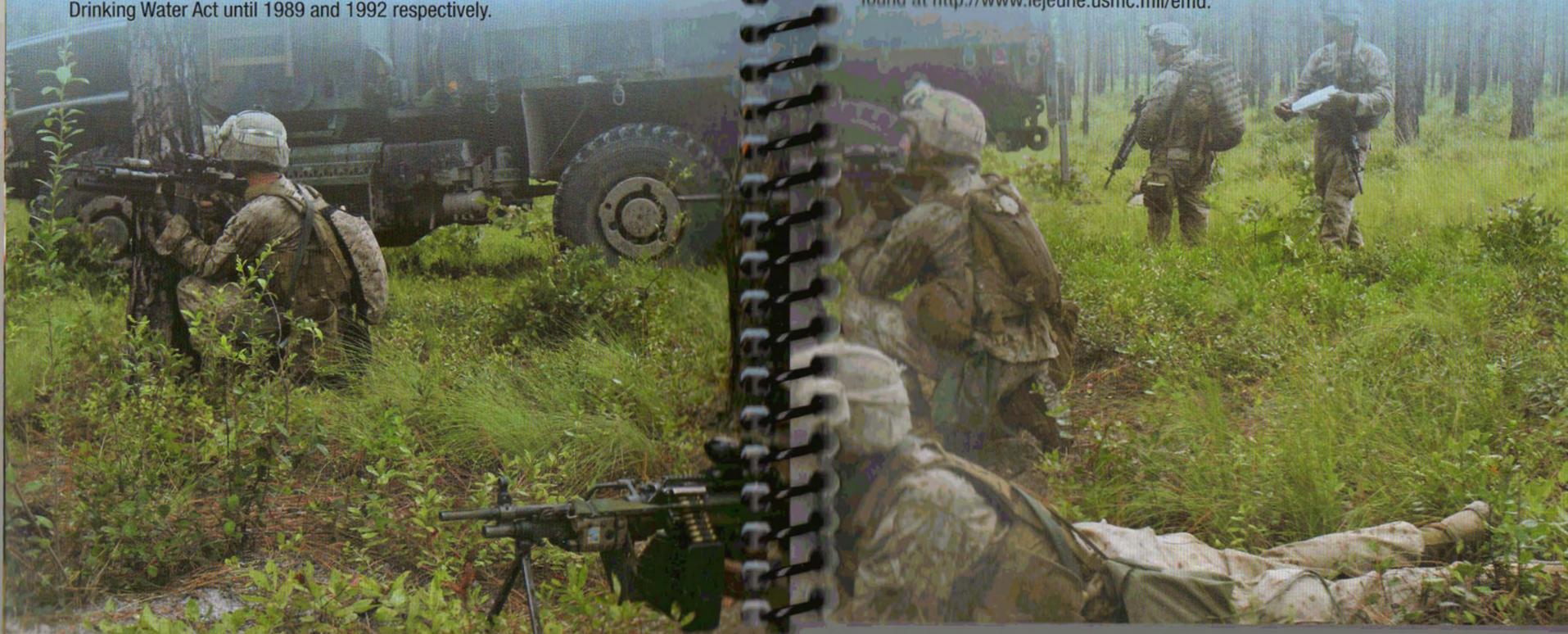


Question: A 1972 Bureau of Medicine (BUMED) Instruction 6240C provided regulatory limits for chlorinated hydrocarbons. Should Camp Lejeune have been looking for TCE and PCE in the drinking water much sooner?

Answer: BUMED Instruction 6240.3C did not regulate chlorinated hydrocarbon solvents such as TCE and PCE, but instead covered chlorinated pesticides. Reliable methods to analyze for TCE and PCE at the levels listed in the BUMED instruction did not exist in 1972. TCE and PCE were not regulated by the Safe Drinking Water Act until 1989 and 1992 respectively.

Question: Is the tap water at Camp Lejeune currently safe?

Answer: Camp Lejeune's drinking water meets the standards established by the Safe Drinking Water Act. Water supplies and systems are tested more frequently and for more chemicals than required by law because the Base is committed to ensuring the safety of Base residents, workers and visitors. Annually, a Consumer Confidence report is published and distributed. Past and present copies can be found at <http://www.lejeune.usmc.mil/emd>.



Health Initiatives and Independent Reviews



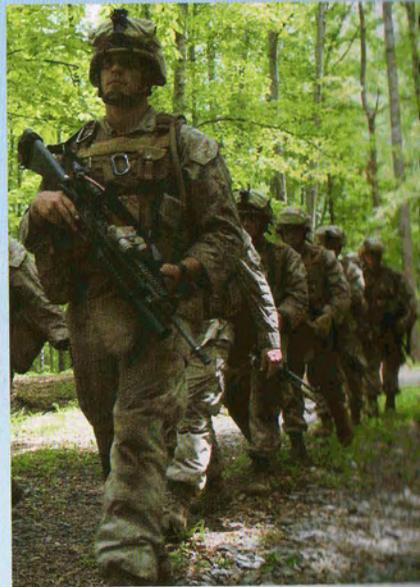
▶ Questions and Answers

The Marine Corps believes that the best way to assist our Marines and their families is to continue to support the independent research initiatives and independent reviews associated with this issue. Our goal is to use the best available science to get our Marines and their family members the answers they deserve.

Since 1991, several health initiatives have been conducted to identify the possible effects of exposure to contaminated water at Camp Lejeune. The studies conducted to date have not shown any causal link between exposure to contaminated water at Camp Lejeune and illnesses.

The most recent review by the National Academies' National Research Council (NRC) concluded in 2009 that adverse effects were unlikely, but could not be ruled out completely. The NRC also determined that additional health studies are unlikely to provide more definitive results.

Additionally, three independent reviews have been conducted on the issue. These reviews covered the actions of Marine officials in the 1980s, the state of drinking water management across the country at the same time, and allegations of negligence and a conspiracy to hide the truth. The reviews found that no laws were broken and rejected charges that the Marine Corps concealed evidence.



Question: Has science linked exposure to contaminated water at Camp Lejeune to illnesses in former residents?

Answer: At this time, scientific studies have not linked exposure to the impacted drinking water at Camp Lejeune to any illnesses. The Marine Corps is providing data, access, and logistical assistance to ATSDR to project when the drinking water was first impacted, who may have consumed that water, and whether there is any link between exposure to the contaminated water and certain illnesses. The 2009 NRC report concluded that adverse effects were unlikely, but could not be ruled out completely, and additional health studies are unlikely to provide more definitive results.

Question: Does the Marine Corps want to delay ATSDR's studies because it knows it will find a connection between exposure and illnesses?

Answer: No. The people who were exposed are our family members and fellow Marines. We, as much as anyone, want to be able to give them accurate answers as quickly as scientifically feasible. The Marine Corps does not have anything to gain from delaying ATSDR's studies, nor a vested interest in the specific outcome of research initiatives. Marine Corps leadership has been in contact with ATSDR over the years to see what, if anything, could be done to speed the completion of ATSDR studies. We are committed to providing ATSDR full and timely access to all pertinent information we possess on this subject so that the best science can be achieved.



Question: Were those who lived and worked at Camp Lejeune exposed to extremely high levels of chemicals through the water?

Answer: The exposures experienced at Camp Lejeune through the drinking water are generally considered lower level environmental type exposures relative to higher level occupational type exposures. The 2009 NRC Report in reference to TCE and PCE stated, "A central issue in toxicology (at Camp Lejeune) is whether doses were sufficient to produce specific adverse effects. The lowest doses at which adverse health effects have been seen in animal or clinical studies are many times higher than the worst-case (highest) assumed exposures at Camp Lejeune. However, that does not rule out the possibility that other, more subtle health effects that have not been well studied could occur, although it somewhat diminishes their likelihood."

Question: Did the Marine Corps influence the NRC to get "favorable" answers to its June 2009 study?

Answer: The Marine Corps has never made any effort to influence the outcome of any scientific studies — including the NRC report. The Marine Corps funded the NRC's work, at the direction of Congress, because it is a preeminent scientific body with a mission that includes advising the government in matters involving science, engineering, technology and health. The Marine Corps has nothing to gain from a particular outcome. Our goal has never been to reach a pre-determined answer — rather we are searching for the answers that are supported by sound science.

Question: Did the Marine Corps have to answer for the contamination at Camp Lejeune?

Answer: There have been three independent reviews of the Marine Corps' actions in the early 1980s. In 2004, the Marine Corps chartered an independent review of the issue; between 2005 and 2007, the Government Accountability Office (GAO) looked into the matter; and between 2003 and 2005, the EPA's Criminal Investigation Division (CID) and Department of Justice (DoJ) investigated both actions in the 1980s and allegations of attempts to cover up wrongdoing.

The Commandant's Fact-Finding Panel (2004) found that Camp Lejeune drinking water was consistent with industry standards that existed at the time, and found no evidence of an attempt to conceal information. The GAO study had no recommendations for the Department of Defense (DoD). The EPA/DoJ Criminal Investigation (2005) found no violations of the Safe Drinking Water Act and no conspiracy to conceal evidence.



HEALTH INITIATIVES AND INDEPENDENT REVIEWS TIMELINE

1990

1991: ATSDR begins its Public Health Assessment (PHA) of Camp Lejeune and makes its first visit to the Base.

1997: ATSDR publishes its PHA for Camp Lejeune. (1991 – 1997)

1998: ATSDR publishes its study: *Volatile Organic Compounds in Drinking Water and Adverse Pregnancy Outcomes Study*. (1995 – 1998)

2000 – 2001: USMC conducts extensive outreach to locate individuals for ATSDR health survey.

2002: ATSDR completes survey of children born to mothers living in Base housing between 1968 and 1985. 12,598 participants respond to be included in the current health study; *Exposure to Volatile Organic Compounds in Drinking Water and Specific Birth Defects and Childhood Cancers, United States Marine Corps Base Camp Lejeune, North Carolina*.

2004: The Commandant's Fact Finding Panel reports Camp Lejeune provided drinking water consistent with general practices at the time.

2005: The EPA/DoJ criminal investigation concludes that there were no violations of the Safe Drinking Water Act; nor was there a conspiracy to conceal evidence. (2003 – 2005)

2007 (May): The GAO completes a report with no recommendations for DoD. (2005 – 2007)

2009 (April): ATSDR removes the PHA from its website and announced a plan to re-evaluate the solvent contamination portion of the document when groundwater modeling efforts are complete.

2009 (Jun): The NRC publishes its Contaminated Water Supplies at Camp Lejeune report. (2007 – 2009)

2012: Current ATSDR health study: *Exposure to Volatile Organic Compounds in Drinking Water and Specific Birth Defects and Childhood Cancers, United States Marine Corps Base Camp Lejeune, North Carolina* is projected to be complete.

Beyond: ATSDR proposes to conduct mortality, cancer incidence, and health survey studies.

2010



Information Sharing

The Marine Corps has spent thousands of hours and more than \$2 million collecting information for past and ongoing health and research initiatives. This information collection and sharing initiative is unique in its breadth and scope.

Over the years, advances in technology improved our ability to identify, catalogue, assess and share the information in our possession with public health agencies studying the issue and with the general public. The Internet, e-mail and other information technology systems increased the rate at which we provide assistance to scientific organizations researching the issue and make information more readily available across the globe. Advances in technology improved our ability to maintain, process and transfer information, and also added to our understanding of the chemicals that were present in Camp Lejeune's water in the early and mid-1980s.

INFORMATION SHARING HIGHLIGHTS:

- Cooperation and information sharing with ATSDR for its Camp Lejeune Public Health Assessment began in 1991. This included numerous ATSDR visits, interviews, meetings and document requests. Since 1991, the Marine Corps has provided volumes of data, and ATSDR has had full access to information the Marine Corps controls.
- The Comprehensive Environmental Response, Compensation, and Liability Act Administrative Record which currently contains approximately 5,000 documents related to the cleanup program has been publicly available in Onslow County Library since 1992 and online since 1999.
- The Marine Corps has been proactively collecting and consolidating information thought to be pertinent since the early 1990s. We have provided this data not only to ATSDR, but to other interested parties as well.
- In 2005, the Marine Corps hired a contractor to conduct an additional search of Camp Lejeune for potentially relevant documents. 718 buildings, totaling about 198,000 linear feet of file space, were searched and 6,295 documents were collected and placed in a central location. ATSDR has had ready access to these documents since the search effort began.

Questions and Answers

Question: Has the Marine Corps cooperated with ATSDR on their health initiatives at Camp Lejeune?

Answer: The Marine Corps has assisted ATSDR since the very beginning of their work at Camp Lejeune — providing tens of thousands of documents, spending millions of dollars and countless man-hours. From the beginning, our actions have been guided by the belief that getting answers supported by the best possible science is the most important thing the Marine Corps can do for the former residents and workers of Camp Lejeune.



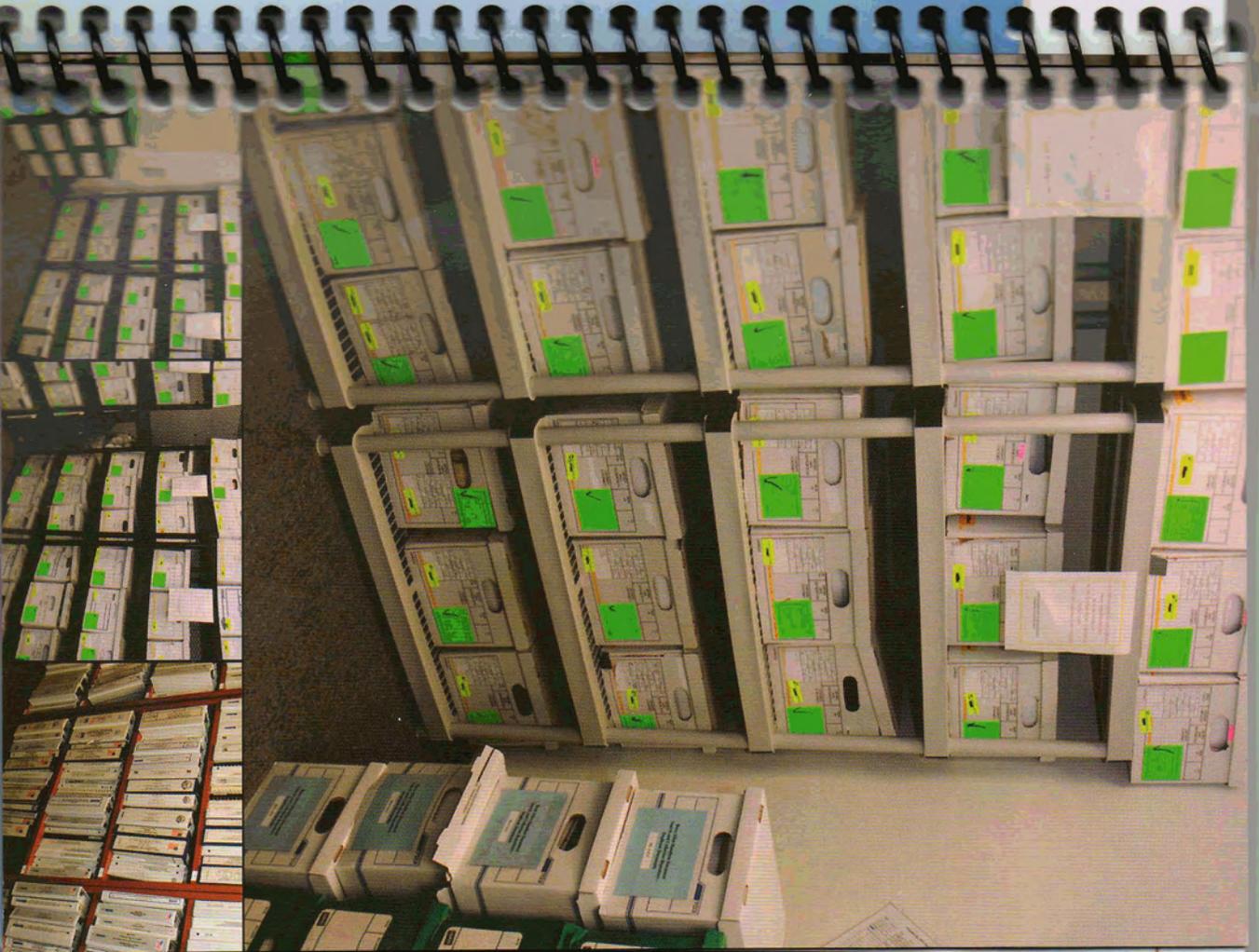
Question: Has the Marine Corps intentionally withheld information from ATSDR in order to delay their studies?

Answer: No. The Marine Corps has made extraordinary efforts to provide ATSDR access to any potentially relevant information we control. We recognize that this issue deals with complex science, and we have been working with ATSDR to get our former residents the answers they deserve in a timely manner.

As the Marine Corps has reviewed thousands of documents, representing decades of information, our understanding of the issue has grown. With greater understanding, and in close cooperation with the scientific experts at ATSDR, we have been better able to identify and provide pertinent information. We remain committed to those efforts today. Throughout the years, we have invited ATSDR to come to Camp Lejeune and look through all of our documents themselves. It is important to note that the information is mostly documents and scanned files — not computer discs — consistent with how information was collected at the time. The Marine Corps does not benefit in any way from delays to ATSDR's work. The people who were exposed are our family members and fellow Marines. We, as much as anyone, want to be able to give them accurate answers in a timely manner.

Question: Did ATSDR only learn about fuel/benzene contamination at the Hadnot Point Fuel Farm in 2009?

Answer: No. Information related to fuel contamination, including benzene, at Camp Lejeune has been documented and reported on since the early 1980s and is cited in numerous documents in the publicly accessible Administrative Record, ATSDR's draft and 1997 final Public Health Assessment (PHA) included references to benzene, as did ATSDR's 1998 Adverse Pregnancy Outcomes study.



Outreach

The Marine Corps has conducted notification and outreach on this important issue since the impacted wells were discovered in 1984 – 1985. This effort began with a press conference in December of 1984, and spans our outreach campaign in 2000 – 2001 to solicit participants for ATSDR’s current study, to our recent robust advertising efforts and drinking water notification registry that now includes over 160,000 individuals. Our outreach efforts have also evolved over time as more information became available and as technological advances further enabled our ability to conduct notification. The creation of the Internet, e-mail and the growth of cable news channels exponentially increased the speed and ease with which we can reach former residents. The Marine Corps is committed to using all available methods to notify as many former residents and workers as possible.

Currently, the Marine Corps uses various electronic and print media to reach our former Base residents and workers. Overall, the Marine Corps has invested more than \$3 million in a coordinated media outreach campaign. Some of our outreach venues include:

- **Military Community** — 19 outlets, including Veterans Affairs agencies, Military magazines, websites, Base newspapers and retirement organizations.
- **General Print Media** — advertisements in 11 magazines, such as Time, Newsweek, Good Housekeeping and Sports Illustrated.
- **Online Media** — advertisements with more than ten popular websites, such as Yahoo, Google, NFL.com, WebMD.com and Weather.com.
- **Social Media** — Facebook page and registration website.



Questions and Answers

Question: Has the Marine Corps attempted to notify all former Camp Lejeune residents and workers?

Answer: The Marine Corps is actively reaching out to former Camp Lejeune residents and workers who are now located around the world. The Marine Corps has used records from the Defense Manpower Data Center, the IRS Computerized Letter Forwarding Program, and various electronic and print media communication venues, such as newspapers and magazines, radio spots, posters and websites to locate former residents and provide information.

Question: Are Camp Lejeune families only finding out about the water contamination because the Congress and the media are involved?

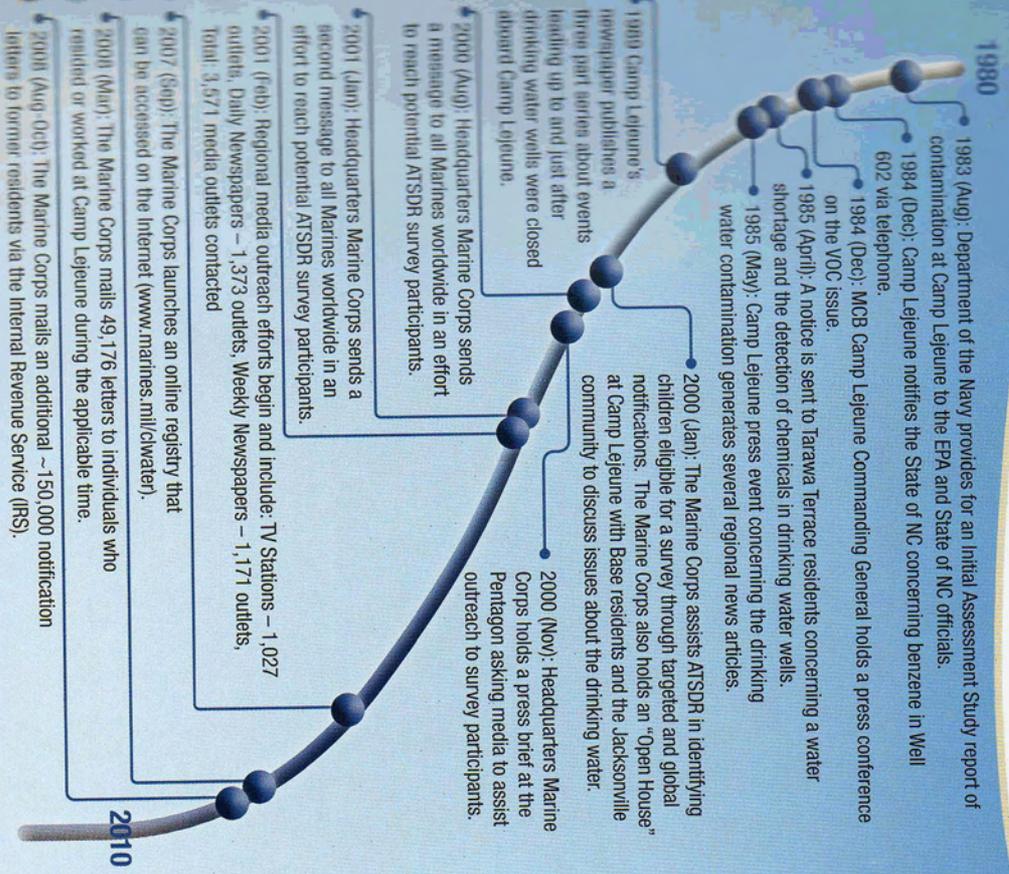
Answer: No. The Marine Corps has been working to “get the word out” about the issue since it was first discovered because it is the right thing to do for our former residents and workers. Since former Camp Lejeune residents are now spread across the world, working with the media on stories about the contamination is one of the most effective ways of informing them and encouraging them to sign up with the Camp Lejeune Water registry. As part of our continued effort to provide information, we have a website that has a wealth of information to help people learn about this issue and recently established a Facebook page.

Question: Has the Marine Corps been trying to cover up the water contamination for decades?

Answer: No. The Marine Corps began informing Camp Lejeune residents about the contamination beginning in 1984. Camp Lejeune issued a press release, ran a story in the Base newspaper, and did interviews with local and regional media in 1984 and 1985. Although this type of notification is now a requirement under



NOTIFICATION AND OUTREACH TIMELINE



the Safe Drinking Water Act, it was not required at the time. In the late 1990s, the Marine Corps began using the media to reach out to former residents and inform them of the ATSDR studies – and we continue that outreach today using advances in technology like the Internet and social networking. The EPA Criminal Investigation Division (CID) found no violations of enforceable regulations had occurred and that there was no evidence of conspiracy.

Question: Are claims being denied because the Marine Corps is not telling the Veterans Administration (VA) about the contamination?

Answer: The Marine Corps does not control, nor is it involved with, the Veterans Administration claims process. However, we have been regularly communicating with the Veterans Administration about Camp Lejeune water contamination since 2007 to provide them with information and to use their assistance to encourage former residents to register for updates on future studies.



Environmental Programs and Cleanup

Safe Drinking Water

The Marine Corps is committed to protecting the health of our Marines and their families and the environment. We have invested millions of dollars across the Marine Corps to ensure our environmental management programs are sound, and we continually look for ways to innovate and improve.

Providing safe and reliable water to our troops and residents is vital to our mission readiness. Camp Lejeune's Environmental Management Division takes great pride in preserving and protecting water resources and ensuring that the water provided to the Base population continues to meet the requirements of the Safe Drinking Water Act (SDWA). Technological and scientific advances have dramatically improved the ability of Camp Lejeune to monitor, test, evaluate, and treat the Base's water supplies over the last 30 years.

Camp Lejeune currently operates five drinking water plants that provide

safe drinking water to more than 60,000 people on-base. Our clean water program enlists proactive control measures through monitoring, long-range studies, conservation and a proactive Environmental Restoration program, as well as many other water quality programs. Camp Lejeune works very closely with federal and state regulators to ensure our drinking water meets their rigorous standards. The Base routinely monitors for more than 150 chemicals, to include additional sampling not required by the EPA or North Carolina. This additional sampling includes monthly drinking water system sampling for VOCs and other organic compounds, such as pesticides, herbicides, as well as regular sampling for other unregulated chemicals. Camp Lejeune does this as part of a commitment to providing the safest, most reliable drinking water possible to the Base population.



Environmental Restoration Program

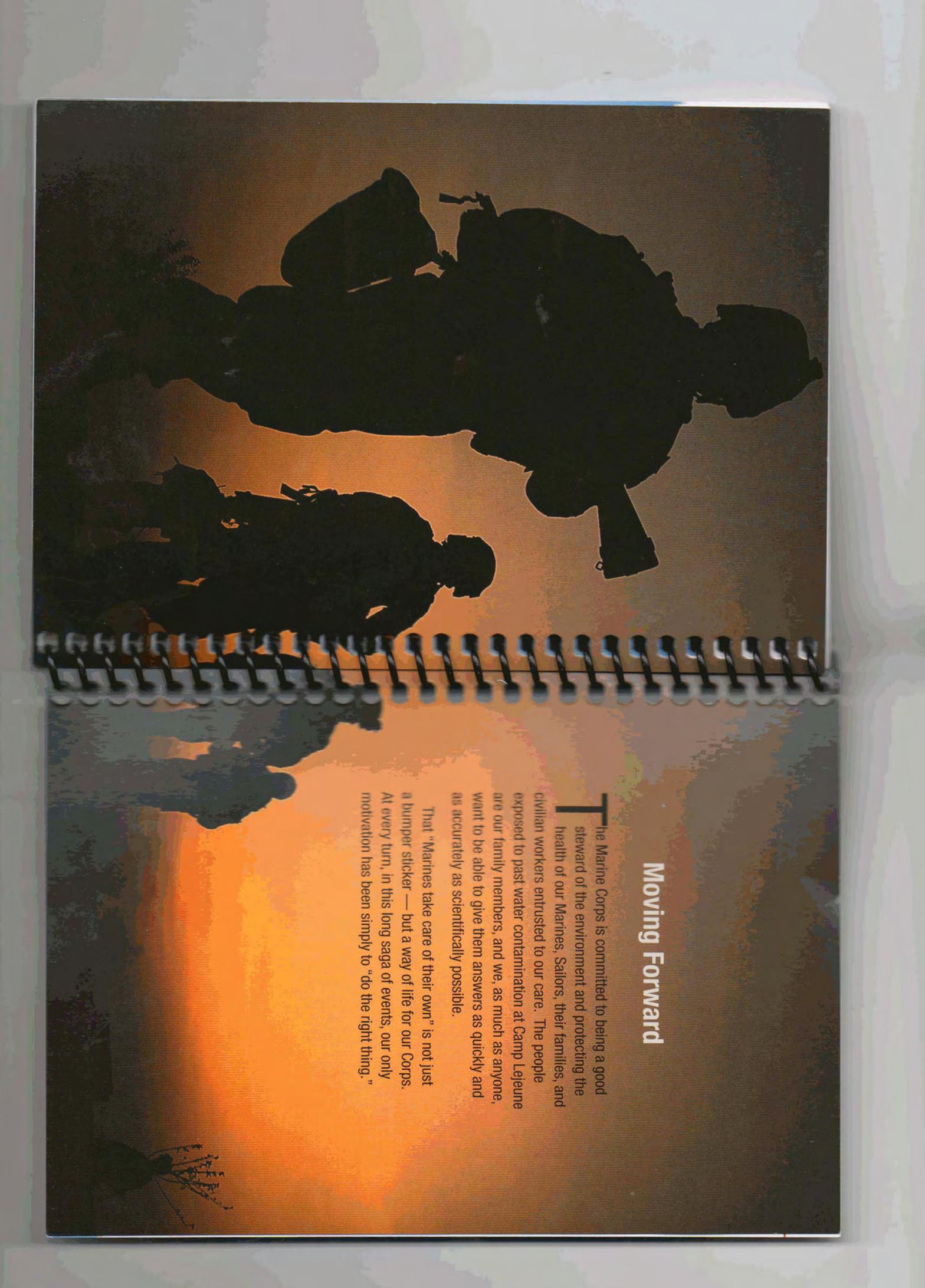
Camp Lejeune is a multiple-time recipient of the Secretary of the Navy and Secretary of the Defense Awards for Environmental Restoration. The Base continues to be a leading DoD facility, operating at the forefront of environmental restoration programs and maintaining outstanding relationships with regulatory agencies and the local community.

Much of the Environmental Restoration program's success is attributable to the Camp Lejeune Environmental Restoration Partnering Team. The Partnering Team was formed in the early 1990s following the Base's listing on the EPA's National Priorities List and consists of representatives from the Base, U.S. Navy, EPA, North Carolina Department of Environment and Natural Resources, and environmental consulting firms.

Camp Lejeune also maintains a very active Restoration Advisory Board (RAB). The RAB was created in 1995 and is made up of members of the community, civic and business organizations, and civilian employees. The RAB meets quarterly and provides tours, on-site demonstrations of new technologies and informative presentations.

The Base, together with the partnering team and RAB, successfully manages over 90 active sites encompassing almost 5,000 acres under four different environmental programs including: the Installation Restoration (IR) Program, Military Munitions Response (MMR) Program, Solid Waste Management Unit (SWMU) Program and the Underground Storage Tank (UST) Program. The IR Program hosts a public website where information is posted for the public.



The image shows two Marines in silhouette, standing against a bright sunset. They are wearing full combat gear, including helmets and carrying large backpacks. The Marine on the left is holding a rifle. The background is a gradient of orange and yellow, suggesting a low sun. The entire scene is framed within a spiral-bound notebook, with the metal binding visible in the center.

Moving Forward

The Marine Corps is committed to being a good steward of the environment and protecting the health of our Marines, Sailors, their families, and civilian workers entrusted to our care. The people exposed to past water contamination at Camp Lejeune are our family members, and we, as much as anyone, want to be able to give them answers as quickly and as accurately as scientifically possible.

That "Marines take care of their own" is not just a bumper sticker — but a way of life for our Corps. At every turn, in this long saga of events, our only motivation has been simply to "do the right thing."

Acronyms



ATSDR	Agency for Toxic Substances and Disease Registry	NACIP	Naval Assessment and Control of Installation Pollutants
BUMED	Navy Bureau of Medicine and Surgery	NCDENR	North Carolina Department of Environment and Natural Resources
CID	Criminal Investigative Division	NPL	National Priorities List
DMDC	Defense Manpower Data Center	NRC	National Research Council
DoD	Department of Defense	PCE	Perchloroethylene (a dry cleaning solvent)
DoJ	Department of Justice	PHA	Public Health Assessment
EMD	Environmental Management Division	RAB	Restoration Advisory Board
EPA	Environmental Protection Agency	SDWA	Safe Drinking Water Act
FMF	Fleet Marine Force units	SWMU	Solid Waste Management Unit
GAO	Government Accountability Office	TCE	Trichloroethylene (a metal degreaser)
HQMC	Headquarters Marine Corps	TTHM	Total trihalomethanes
IR	Installation Restoration	UST	Underground Storage Tank
IRS	Internal Revenue Service	VA	Veterans Administration
MCB CL	Marine Corps Base Camp Lejeune	VOC	Volatile organic compounds
MMR	Military Munitions Response		

Links

USMC Camp Lejeune Historic Drinking Water website
www.marines.mil/clwater

Agency for Toxic Substances and Disease Registry (ATSDR)
www.atsdr.cdc.gov/sites/lejeune

Camp Lejeune Environmental Management Division
www.lejeune.usmc.mil/emd

National Academies' National Research Council report on Camp Lejeune
<http://www.nationalacademies.org/morenews/20090613.html>

GAO Report on Camp Lejeune
<http://www.gao.gov/new.items/d07276.pdf>

For complete details and more frequently asked questions regarding the Camp Lejeune Historic Drinking Water Registry, on-going studies, and other information, please visit our website at www.marines.mil/clwater. You can also call our toll-free information line at (877) 261-9782 to speak to a representative who can assist you with questions and concerns.