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# FACT SHEET

Office of the  
Assistant Secretary of Defense (Health Affairs)  
**Deployment Health Support Directorate**

For more information  
(703) 578 - 8500  
(800) 497 - 6261

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Version 10-09-2002

## **Deseret Test Center**

### **Elk Hunt, Phase I**

Shortly after President Kennedy's inauguration in 1961, the Secretary of Defense, Robert McNamara, directed that a total review of the U.S. military be undertaken. The study consisted of 150 separate projects. The chemical and biological warfare review was known as Project 112. As part of the Project 112 review, the Joint Chiefs of Staff convened a working committee that recommended a research, testing, and development program for chemical and biological weapons. To oversee this program, the Deseret Test Center was established at Fort Douglas, Utah, in 1962. Both land-based and ship-based tests were conducted during the period 1962 – 1973. The Deseret Test Center closed in 1973.

The Elk Hunt, Phase I tests were designed to determine the amount of either standard or modified VX nerve agent picked up on the clothing of personnel traversing various types of contaminated terrain. The tests examined the length of time a barrier is effective in producing casualties. Elk Hunt, Phase I also compared pickup of agent when M23 mines filled with standard and modified VX nerve agent were detonated under water and under ground.

In Elk Hunt, Phase I, standard or modified VX nerve agent was disseminated from M23 mines detonated under ground in three types of terrain – shrubbery, wooded, and ground covered in rye grass – and under water. Personnel, assuming various tactical positions, traversed the contaminated test grids at specified times and the amount of VX picked up on their clothing was measured. Personnel wore complete, impermeable, butyl-rubber outfits and M9A1 masks.

Twenty trials were conducted in the vicinity of Fort Greely, Alaska from July 3 through August 15, 1964.

The Department of Defense (DoD) is providing this information, at the request of the Department of Veterans Affairs (VA), to assist the VA in providing healthcare services to qualified veterans and to assist veterans in establishing service connection for disability claims. The Deployment Health Support Directorate (DHSD) collected this information from multiple sources and requested that the military services declassify it to allow its public distribution. The VA accepts this information provided on location, dates, units and/or ships, and substances involved in this exercise, which DHSD extracted from classified DoD records, and will provide it to individual veterans as necessary, but the VA cannot verify its accuracy.

<b>Test Name</b>	Elk Hunt, Phase I (DTC Test 65-14)
<b>Testing Organization</b>	US Army Deseret Test Center
<b>Test Dates</b>	July 3 – August 15, 1964
<b>Test Location</b>	Fort Greely, Alaska
<b>Test Operations</b>	To determine the amount of either standard or modified VX nerve agent picked up on the clothing of personnel traversing various types of contaminated terrain. To determine the length of time a barrier is effective in producing casualties. To compare pickup of agent when M23 mines filled with standard and modified VX are detonated under ground and under water.
<b>Participating Services</b>	US Army, Deseret Test Center personnel
<b>Units and Ships Involved</b>	Selected personnel assigned to HHC, 171st Infantry Brigade, 15th Artillery Battalion, 40th Armor Battalion, 4th Battalion, 9th Infantry, 1st Battalion, 47th Infantry, 538th Ordnance Company (Direct Support)
<b>Dissemination Procedures</b>	Standard or modified VX was disseminated from M23 mines detonated under ground and under water.
<b>Agents, Simulants, Tracers</b>	VX Nerve Agent Modified VX Nerve Agent (one percent polyisobutyl-methacrylate added as thickener)
<b>Ancillary Testing</b>	Not identified
<b>Decontamination</b>	Not identified

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<p><b>Potential Health Risks Associated with Agents, Simulants, Tracers</b></p>	<p><u>VX Nerve Agent</u> – (Synonyms: Phosphonothioic acid, VX)</p> <p>VX nerve agent is extremely lethal. It is an oily liquid that is clear, odorless, and tasteless. Death usually occurs within 10-15 minutes after absorption of a fatal dosage. VX nerve agent is one of the most toxic substances ever synthesized. Symptoms of overexposure may occur within minutes or hours, depending upon the dose. They include: constriction of pupils, headaches, runny nose, salivation, tightness in the chest, nausea, vomiting, anxiety, difficulty in thinking, muscle twitches, tremors, and weakness. With severe exposure, symptoms progress to convulsions and respiratory failure. There is little information available regarding the long-term human health effects of exposure to low doses of VX.</p> <p>(Sources: Centers for Disease Control and Prevention <a href="http://www.bt.cdc.gov/Agent/Nerve/VX/ctc0006.asp">http://www.bt.cdc.gov/Agent/Nerve/VX/ctc0006.asp</a> [as of January 25, 2002] Zajtchuk R (ed.), Textbook of Military Medicine (part 1, Medical Aspects of Chemical and Biological Warfare, 1997), Office of the Army Surgeon General, Washington DC, 1997. SBCCOM Online, Edgewood Chemical Biological Center <a href="http://in1.apgea.army.mil:80/RDA/msds/vx.htm">http://in1.apgea.army.mil:80/RDA/msds/vx.htm</a> [as of April 2, 2002] World Health Organization, Department of Sustainable Development &amp; Environmental Protection, <a href="http://209.61.192.180/phe/factsheet_5.htm">http://209.61.192.180/phe/factsheet_5.htm</a> [as of April 2, 2002] Department of the Army Pamphlet 40-8: Occupational Health Guidelines for the Evaluation and Control of Occupational Exposure to Nerve Agents GA, GB, GD, and VX <a href="http://books.army.mil:80/cgi-bin/bookmgr/BOOKS/P40_8/CONTENTS">http://books.army.mil:80/cgi-bin/bookmgr/BOOKS/P40_8/CONTENTS</a> [as of February 5, 2002])</p>
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Version 10-09-2002

## **Deseret Test Center**

### **Elk Hunt, Phase II**

Shortly after President Kennedy's inauguration in 1961, the Secretary of Defense, Robert McNamara, directed that a total review of the U.S. military be undertaken. The study consisted of 150 separate projects. The chemical and biological warfare review was known as Project 112. As part of the Project 112 review, the Joint Chiefs of Staff convened a working committee that recommended a research, testing, and development program for chemical and biological weapons. To oversee this program, the Deseret Test Center was established at Fort Douglas, Utah, in 1962. Both land-based and ship-based tests were conducted during the period 1962 – 1973. The Deseret Test Center closed in 1973.

The Elk Hunt, Phase II tests were designed to determine the amount of VX nerve agent picked up on the clothing of personnel traversing breached paths through contaminated areas and M23 minefields; the amount of VX nerve agent deposited on the surface of vehicles traversing VX-contaminated areas or under which an M23 mine had been detonated; the amount of VX nerve agent deposited on the clothing of personnel actively or passively contacting contaminated vehicles; vehicle decontamination by wet steam, high-pressure cold water hosing, and wallow pit; and, the amount of VX vapor rising from VX-contaminated areas.

Thirty-five trials were conducted near Fort Greely, Alaska, between June 7 and July 27, 1965. Five trials were conducted by the Canadian government in conjunction with the Deseret Test Center trials. Chemical Research and Development Laboratories, Edgewood Arsenal, Maryland, performed 11 additional vehicle decontamination trials from October 27 to December 17, 1965.

Personnel who participated in Elk Hunt, Phase II wore complete, impermeable butyl-rubber outfits and M9A1 masks.

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<b>Test Name</b>	Elk Hunt, Phase II (DTC Test 65-14)
<b>Testing Organization</b>	US Army Deseret Test Center
<b>Test Dates</b>	June 7 – July 27, 1965 October 27 – December 17, 1965
<b>Test Location</b>	Fort Greely, Alaska Edgewood Arsenal, Maryland Canada
<b>Test Operations</b>	To determine the amount of standard VX nerve agent picked up on the clothing of personnel traversing paths formed by the breaching of minefields and areas contaminated by detonated M23 mines. Tests were made to determine the amount of VX nerve agent picked up by personnel contacting contaminated vehicles.
<b>Participating Services</b>	US Army, Deseret test personnel
<b>Units and Ships Involved</b>	Selected personnel assigned to HHC, 171st Infantry Brigade, 15th Artillery Battalion, 40th Armor Battalion, 4th Battalion, 9th Infantry 1st Battalion, 47th Infantry, 538th Ordnance Company (Direct Support)
<b>Dissemination Procedures</b>	Standard VX was disseminated from M23 mines buried with pressure plates flush with the ground.
<b>Agents, Simulants, Tracers</b>	VX Nerve Agent
<b>Ancillary Testing</b>	Not identified
<b>Decontamination</b>	Wet steam, high-pressure cold water hosing, and wallow pit for decontaminating vehicles

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<p><b>Potential Health Risks Associated with Agents, Simulants, Tracers</b></p>	<p><u>VX Nerve Agent</u> – Lethal Nerve Agent (Synonyms: Phosphonothioic acid, VX):</p> <p>VX nerve agent is extremely lethal. It is an oily liquid that is clear, odorless, and tasteless. Death usually occurs within 10-15 minutes after absorption of a fatal dosage. VX nerve agent is one of the most toxic substances ever synthesized. Symptoms of overexposure may occur within minutes or hours, depending upon the dose. They include: miosis (constriction of pupils) and visual effects, headaches and pressure sensation, runny nose and nasal congestion, salivation, tightness in the chest, nausea, vomiting, giddiness, anxiety, difficulty in thinking, difficulty sleeping, nightmares, muscle twitches, tremors, weakness, abdominal cramps, diarrhea, involuntary urination and defecation. With severe exposure symptoms progress to convulsions and respiratory failure. The permissible airborne exposure concentration for VX nerve agent in any 8-hour work shift can be found in Department of the Army Pamphlet 40-8. To date, however, the Occupational Safety and Health Administration has not promulgated a permissible exposure concentration for VX nerve agent.</p> <p>(Sources: Centers for Disease Control and Prevention <a href="http://www.bt.cdc.gov/Agent/Nerve/VX/ctc0006.asp">http://www.bt.cdc.gov/Agent/Nerve/VX/ctc0006.asp</a> [as of January 25, 2002]. SBCCOM Online, Edgewood Chemical Biological Center <a href="http://inl.apgea.army.mil:80/RDA/msds/vx.htm">http://inl.apgea.army.mil:80/RDA/msds/vx.htm</a> [as of April 2, 2002]. World Health Organization, Department of Sustainable Development &amp; Environmental Protection, <a href="http://209.61.192.180/phe/factsheet_5.htm">http://209.61.192.180/phe/factsheet_5.htm</a> [as of April 2, 2002]. Department of the Army Pamphlet 40-8: Occupational Health Guidelines for the Evaluation and Control of Occupational Exposure to Nerve</p>
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	<p>Agents GA, GB, GD, and VX, <a href="http://books.army.mil:80/cgi-bin/bookmgr/BOOKS/P40_8/CCONTENTS">http://books.army.mil:80/cgi-bin/bookmgr/BOOKS/P40_8/CCONTENTS</a> [as of February 5, 2002]).</p>
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