A generation of indiscriminate dumping

Here are some of the chemical weapons of mass destruction the Army dumped into U.S. oceans from 1944 to 1970:

**X** Unknown location

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**ALASKA**
- On April 19, 1958, the S.S. William Keating was packed with 301,100 155-pound bombs filled with mustard agent, as well as almost 1,500 1-ton containers of Lewisite. The ship was taken to an estimated 1.5 miles off San Francisco and scuttled in 115 feet of water.
- The dump zone had been used since the 1940s for surplus conventional high-explosive ordnance, as well as an estimated 47,800 tons of low-level radioactive waste not known to be of military origin.

**Florida**
- Somewhere roughly 300 miles off the Atlantic coast of Florida are the remains of the S.S. Joshua Knealon, sunk in December 1940 with a good chunk of the Army’s East Coast stockpile of the chemical agent Lewisite.
- More than 3,700 tons of Lewisite and Lewisite-filled munitions have been laid down in the ocean off the southeastern tip of Florida. The event was code-named Operation Geranium because Lewisite smells vaguely like geraniums. The Army cannot determine in the size of the container, a guess, or a more precise location for the wreck.

**New Jersey**
- About 16,000 100-pound mustard bomb dums were estimated five miles off Dalu sometime during 1944. The Army doesn’t know where, but determined that the munitions were stored in the Upper Kipapa and Ala Moana areas before disposal.
- A huge chemical ordnance dumpsite was created during three weeks in October and November 1940 somehow off Hawaii. The Army can’t say where or any more specifics. The materials were transferred to Waianae to avoid moving the munitions through densely populated areas.
- On June 19, 1968, the S.S. Mormactern was packed with 3,100 120-pound cyanogen chloride bombs; 20,000 155-pound bombs of hydrogen cyanide; 15,000 110-pound mustard agent bombs; 3,000 1-ton filled mortar rounds, and more than 1,000 1-ton containers of mustard agent, and 192 1-ton containers of Lewisite.

**New Mexico**
- A month later, chemical munitions that couldn’t fit in the Ralston were loaded onto the side of the USS Diamond Head in March 1969. The Army has no other information on this site.
- In 1958, 1,507 1-ton containers of Lewisite and 631 1-ton containers of mustard gas were dumped somewhere off New Jersey. It’s unclear whether a dumpsite was created for this shipment or whether a previously known dumpsite was used. The chemicals originated at Pine Bluff Arsenal in Arkansas and were loaded into an unidentified ship at Sunny Point, N.C.

**South Carolina**
- In 1967, the Army began filling old Liberty-class ships with mustard gas and ordnance and scuttling them off New Jersey. In small doses, but not all of it, the nerve gas was enacated in concrete. The first of these CHASE operations, short for Container Holding And Strategy Emplacement, was dubbed CHASE III. It was conducted June 15, 1976, in the Atlantic Ocean near the mouth of the Chesapeake Bay. The Army said the ship was off the side of the USS Merrill and scuttled in 268 feet of water near Off Agenda City.
- On July 7, 1968, the S.S. Richardson was scuttled with its hold filled with 3,100 one-ton containers of mustard agent mixed with water and an unknown quantity of conventional, high-explosive ordnance. Army officials hypothesize that water pressure set off one piece, triggering a chain reaction.

**Virginia**
- In 1962, more than 200 tons of radioactive waste was dumped off Hampton Roads in Virginia Beach, Va.
- In 1996, the Army dumped 313 tons of undeflagrated radioactive waste and 1,600 1-ton containers of Lewisite in deep water off Chincoteague.
- In 1964, the Army used the same location to dump 600 55-gallon drums of some kind of radioactive waste, along with 74-ton containers of mustard agent and 1,700 mustard-filled artillery shells.

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**Known dumpsites in the Pacific**

**Hawaii**
- In 1964, the Army dumped an estimated 4,220 tons of ordnance filled with hydrochloric cyanide somewhere off Pearl Harbor, but the Army doesn’t know exactly where.

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**California**
- In 1944, the Army dumped an estimated 124 German phosgene bombs were dumped off Horn Island, Miss., on July 27, 1944. The bombs were probably thrown into the water off the side of the S.S. Benjamin in an undetermined depth. The bottom is now a popular national park.
- On July 13, 1944, more than 30 German mustard gas bombs were shipped by barge from Theodore Naval Magazine in Mississippi to the international port of Wilmington, N.C., and dumped 20 miles off the coast, at a depth of about 200 feet of water. The bombs fired haphazardly. By today’s standards, that is not considered deep water.
- An unknown number of mustard gas filled bottles were loaded out of New London, Conn. on March 10, 1944; aboard the USA-Lusitania and dumped somewhere off the Gulf in the gulf.
- Two unspecified chemical filled bombs accidentally sank quickly in the dumping channel of the Missei Reiver about three miles south of Braithwaite, La., and were never recovered.
- In an unspecified dumping operation, one or two barges of unspecified “toxic” munitions were loaded at Theodore Naval Magazine, Alabama. One or two barges of dropped munitions are remains unknown, and the Army has no further information on the site.

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**Yellowstone**
- Seventeen ships of chemical munitions were thrown into the sea near the Virginia-Maryland border off the Eastern Shore during one week in September 1945. Dumped were 75,852 mortar shells filled with mustard gas and 924 white phosphorus-filled bombs, which could contain as many as 60 smaller munitions each. More than 1,000 55-gallon drums of arsine of an unknown chemical agent — which in small doses damages the nervous system and can cause nerve damage or mutations — were also dumped, as were an estimated 23,000 chemical smoke shells.
- The Coast Guard cutter Genten and several amphibious landing ships did the dumping.
- On Nov. 13 and 14, 1947, the USS Johnston County loaded 48 tons of Lewisite off Colts Neck Naval Park in N.J., and dumped it at a coastal shelf in 12,000 feet of water off Virginia Beach.
- In 1969, the Army dumped 313 tons of undeflagrated radioactive waste and 1,600 1-ton containers of Lewisite in deep water off Chincoteague.
- In 1964, the Army used the same location to dump 600 55-gallon drums of some kind of radioactive waste, along with 74-ton containers of mustard agent and 1,700 mustard-filled artillery shells.
- In 1962, more than 200 tons of radioactive waste in steel drums was dumped within a few miles of the 1960 dump zone, along with thousands of artillery shells and 2,515 white phosphorous munitions.
- An unspecified type and quantity of chemical munitions might have been dumped somewhere offshore of Norfolk or Virginia Beach during World War II.
- The only known surviving record of the sites dumped chemical weapons was said to be “Nanseman depot,” which was the Narramund Ordnance Depot in Suffolk. The unconfirmed dumpsite was said to be “in the Atlantic Ocean” near the mouth of the Chesapeake Bay.