NEWPORT NEWS, Va. — The Army secretly dumped 64 million pounds of nerve and mustard agents into the ocean, along with 400,000 chemical-filled bombs, land mines and rockets — either tossed overboard or packed into the holds of scuttled vessels, according to an investigation by The (Newport News, Va.) Daily Press.

"We do not claim to know where they all are," said William Brankowitz, a deputy project manager in the Army Chemical Materials Agency and a leading authority on the Army's chemical weapons dumping. "We don't want to be cavalier at all and say this stuff was exposed to water and is OK. It can last for a very, very long time."

The weapons of mass destruction may still be deadly, and were dumped along with more than 500 tons of radioactive waste from World War II until 1970, after which Congress and international treaty banned the practice.

The newspaper's investigation also found:

- The chemical weapons were dumped in at least 26 locations off the coast of 11 states — six East Coast states, two on the Gulf Coast, California, Hawaii and Alaska. Few, if any, state officials have been informed of their existence. Five dumpsites are off the coast of Virginia.

- The Army dumped much of its overseas World War II stockpiles off the coast of 16 other countries. Hundreds of fishermen have been injured over the years from them.

- The ocean-dumped chemical agents could pose hazards for generations. The Army has examined only a few of its dump zones and none in the past 30 years.

- The Army can't say exactly where all the weapons were dumped off the U.S. coast because records are sketchy, missing or were destroyed. Several dumpsites are within...
sight of land.

- More dump sites likely exist. The Army hasn't reviewed World War I-era records, when ocean dumping of chemical weapons was common.

A drop of nerve agent can kill within a minute. When released in the ocean, it lasts up to six weeks, killing every organism it touches before breaking down into its non-lethal chemical components.

Mustard gas can be fatal. When exposed to seawater, it forms a concentrated, encrusted gel that lasts for at least five years, rolling around on the ocean floor, killing or contaminating sea life.

The sea-dumped chemical weapons might be slowly leaking from decades of saltwater corrosion, resulting in a time-delayed release of deadly chemicals over the next 100 years and an unforeseeable environmental effect. Steel corrodes at different rates, depending on the water depth, ocean temperature and thickness of the shells.

That was the conclusion of Norwegian scientists who in 2002 examined chemical weapons dumped off Norway after World War II by the U.S. and British militaries.

"It's a disaster looming — a time bomb, say," said Gert Harigel, a well-respected physicist in Geneva who's been active in international chemical weapons issues. "The scientific community knows very little about it. It scares me a lot."

While it seems unlikely that the weapons will begin to wash up on the U.S. shore, a clam trawler off New Jersey pulled up a mustard-gas-filled artillery shell last summer. Three bomb disposal experts from Dover Air Force Base, Del., were injured dismantling it, and one was hospitalized with large, pus-filled blisters.

The shell was discovered in a residential driveway in Delaware, having survived intact being dredged up and put through a crusher to create cheap clamshell driveway fill sold throughout the Delmarva Peninsula.

"The perception at the time was the ocean is vast — it would absorb it," said Craig Williams, director of the Chemical Weapons Working Group in Kentucky, a grass-roots citizens group. "Certainly, it is insane in retrospect they would do it. It would be inevitable, I assume, all of this will be released into the ocean at some point or another."

Boaters, divers, fishermen and commercial seafood trawlers have no way to steer clear of the dumpsites because the Army has put only one of its 26 known chemical weapons dumps on nautical charts.

And the federal agency in charge of undersea cable-laying operations, as well as gas and oil ventures, has only a vague idea of where chemical weapons were thrown into the ocean, said spokesman Gary Strasburg.

That agency, the Minerals Management Service, knows only what the Army has revealed to that agency: that chemical weapons were dumped at sea and that some are in the Gulf of Mexico and off South Carolina, agency records show.

One marine mammal specialist thinks "it is a very good possibility" that leaking chemical weapons killed hundreds of dolphins in 1987.

"You'd see the photos and you'd say, 'Man, this animal was burned by something,' " said Bob Schoelkopf, director of the Marine Mammal Stranding Center in Brigantine, N.J. "It'd be nice to see the Army go down there and investigate, but nobody wants to open that book, it seems."