



Water for Weapons Destruction: Source, Quantity, Groundwater Protection

The [Program Executive Office, Assembled Chemical Weapons Alternatives \(PEO ACWA\)](#), the [U.S. Army Pueblo Chemical Depot](#) and the surrounding communities worked together to select [neutralization followed by biotreatment](#) to destroy the chemical weapons stored at the depot. The [Pueblo Chemical Agent-Destruction Pilot Plant](#), or PCAPP, has safely finished destroying the weapons. PEO ACWA was responsible for completing stockpile destruction operations by the [Chemical Weapons Convention](#) treaty commitment of Sept. 30, 2023. U.S. public law mandated stockpile destruction by Dec. 31, 2023.

Prior to destruction operations, the chemical weapons stockpile at PCD comprised 2,613 U.S. tons of weaponized [mustard](#) agent in three types of munitions: 105mm and 155mm projectiles and 4.2-inch mortar rounds. Technology known as [neutralization followed by biotreatment](#) was used to destroy the [mustard agent](#) contained within the mortar rounds.

Where does PCD get water? How much is available for use at PCAPP?

A series of wells located on PCD property gives the depot an annual capacity of 177 million gallons of water. The depot pumps approximately 97 million gallons of that capacity each year, leaving a balance of 80 million gallons.

Of this amount, about 50 million gallons per year is available for use by PCAPP and is nearly twice the amount needed to meet the plant's needs. The rest is available for other depot activities.

How much water is the PCAPP facility using during operations?

PCAPP uses water for several purposes, such as neutralizing the mustard agent, aiding the biological treatment and cooling the processing equipment. Water that is part of the process is treated and reused, making the plant a near-zero discharge facility. The plant has used up to 50,000 gallons of water per day from the well sources to make up for evaporative losses within the treatment equipment.

How is groundwater at PCAPP protected?

The plant was designed to protect groundwater. The [Colorado Department of Public Health and Environment](#) (CDPHE) reviews and approves the design and operating procedures that protect groundwater. Measures to prevent groundwater contamination were built into the facility and CDPHE monitors plant operations to ensure permit requirements are met.

What is currently known about groundwater and soil conditions at the PCAPP site?

Soil and groundwater samples have been taken from more than 80 locations at the PCAPP site. Data from this sampling will be compared to samples taken after the plant closes to verify there is no contamination from plant operations.

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Water for Weapons Destruction (continued)



Soil and water samples were taken from 43 locations within the plant footprint in 2004, and five groundwater monitoring wells were installed up gradient and down gradient from the plant site. Analysis of those samples did not find any metals or organic compounds above naturally occurring levels.

Samples were taken from an additional 41 locations in 2006 after the footprint of the plant changed during a redesign. Analysis of these samples confirms the previous finding of no metals or organic compounds above naturally occurring levels.

No records or other data exist to indicate the area PCAPP is constructed on was used for hazardous materials management, or subject to spills or chemical releases.