

### ***Pantex Cleanup Progress***

Active cleanup continues to address contaminants in perched groundwater from legacy operations dating back to World War II and the Cold War Era. The perched groundwater cleanup action includes four in situ bioremediation systems and two pump and treat systems. The primary goals for treatment are to prevent movement of contaminated perched groundwater to the deeper drinking water aquifer (Ogallala Aquifer). A soil vapor extraction (SVE) system was previously operated to remove solvents from the Burning Ground soils. The SVE system was approved for closure in 2023 as data collected at the system indicate that cleanup goals to prevent movement of solvents in soils to the Ogallala Aquifer have been met. Pantex will continue to monitor the groundwater around the system to evaluate long-term effectiveness.

As part of extensive site stewardship activities, Pantex routinely monitors over 100 perched groundwater wells to evaluate the effectiveness of the groundwater cleanup and 30 Ogallala Aquifer wells (including three newly installed wells) to evaluate the continued protectiveness of remedial actions for the drinking water aquifer. Monitoring results from Ogallala wells continue to indicate that neighboring water supplies and Pantex production wells are safe and protected. You can find results on the Mission page at [pantex.energy.gov](https://www.pantex.energy.gov).

### ***Pantex 2024 Annual Public Meeting***

Pantex provides updates of the cleanup progress at an annual Public Meeting. This year's meeting will be held at 4:00 p.m. on Thursday, November 7, 2024, at the Square House Museum, 501 Elsie Avenue, in Panhandle, TX.

### ***Detection of Legacy High Explosives in Ogallala Monitoring Wells***

Pantex is conducting an active cleanup that is addressing legacy contamination in the perched groundwater beneath the Pantex Plant that dates back to the Cold War era. During the Cold War, industrial wastewater was released to ditches and playas that then leached into one of Pantex's two groundwater systems - the perched aquifer. The perched groundwater is created by water pooling on a thin zone of "tight" clays and silts called the fine-grained zone. The other, deeper water body, called the Ogallala Aquifer, is the region's primary drinking and agricultural water source and also provides drinking water for Pantex. Vertical movement of water between the perched groundwater and the Ogallala Aquifer is limited by the presence of the fine-grained zone, but can occur where the fine-grained zone thins.

The fine-grained zone southeast of Pantex, beneath Texas Tech Property, is known to be thinner, making migration of contaminants more likely. As a result of the thinner fine-grained zone southeast of the plant, past modeling concluded that some leaching of contaminants into the Ogallala would likely occur beneath Texas Tech University property at low concentrations.

#### ***Highlights of Cleanup Actions***

- This past year, Pantex removed 661 lbs of legacy contaminants through remedial actions.

#### ***Totals since start of remedial action :***

- 3.3 billion gallons of perched groundwater treated with 1.8 billion gallons beneficially used
- 17,127 pounds of contaminants removed from perched groundwater
- Bioremediation systems are reducing high explosives, perchlorate, hexavalent chromium, and trichloroethene to safe drinking water levels
- 21,378 pounds of solvents removed from soils through the completed action of the Burning Ground Soil Vapor Extraction System

Pantex maintains an extensive Ogallala well network that monitors for breakthrough of legacy constituents to the Ogallala Aquifer from the overlying perched aquifer. One Ogallala monitoring well (PTX06-1056) continues to demonstrate detections of legacy 4-amino-2,6-dinitrotoluene (DNT4A), a breakdown product of TNT, first detected in April 2014. Further detections of DNT4A and other high explosive compounds, including RDX, prompted Pantex to begin planning expansion of the Ogallala well network to help evaluate potential sources and extent of the contamination. Three new Ogallala monitoring wells (PTX06-1223, PTX06-1224, and PTX06-1229) were installed in 2023 (blue stars on map). The new wells were installed in areas identified in earlier plume modeling for being at risk of vertical contaminant migration from the perched to the Ogallala Aquifer. Initial results from PTX06-1223 indicate DNT4A and RDX at similar concentrations to recent samples from PTX06-1056, though all concentrations were below groundwater protection standards (GWPS). Results from PTX06-1224 indicated no detections of contaminants of concern. However, an unexpected result was received from newly installed Ogallala well PTX06-1229 with concentrations that were higher than predicted. RDX was detected at a concentration of 307 ug/L, above the GWPS of 2 ug/L.

Pantex requested special funding to implement measures to begin evaluating extent of the detections by installing three additional Ogallala monitor wells in 2024 (orange stars on map). Further installations will be evaluated after gaining information from these new wells. Pantex is working closely with the Texas Commission on Environmental Quality and the Environmental Protection Agency, following protocols established in the Pantex Plant Ogallala Aquifer and Perched Groundwater Contingency Plan. Further actions will be determined based on sampling results and in accordance with these protocols.

Wells with detections are located south of the Plant property boundary on Texas Tech property and northwest of the John C. Drummond Center. There is no imminent threat to existing drinking, irrigation, or livestock water wells in the Ogallala Aquifer from these detections based on samples collected in 2023 and 2024 from wells located upgradient of onsite and offsite water supplies (see wells in yellow boxes). Pantex obtains water for plant processes, personnel use, and consumption from Ogallala production wells located in the northeast corner of the Plant property. Pantex has tested the Ogallala monitoring wells in that region and have observed no detections of high explosives. These results indicate there is no danger to Pantex or neighboring water supplies. Results from this well will be further discussed at the upcoming public meeting.

