

# CITY OF PERRYTON WELL #2 (OCHILTREE COUNTY) PERRYTON, TEXAS



**EPA REGION 6**  
**CONGRESSIONAL**  
**DISTRICT 13**

**EPA ID# TX0001399435**  
**Site ID: 0605015**

**Contact: Vincent Malott**  
**214-665-8313**

**Updated: January 2012**

## Background

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The Site is located within the City of Perryton in the extreme northern most part of the Texas panhandle in Ochiltree County. The City of Perryton has a population of approximately 7,758 people. Well No. 2 is located on a 1.7 acre maintenance yard used by the City of Perryton Utility Department. The maintenance yard is located near the northwest corner of Amherst Street and Santa Fe Ave. Well No.2 is a public drinking water supply well contaminated by carbon tetrachloride. The well was taken out of service in June 1989 when the Texas Department of Health originally documented the contamination.

The Ogallala aquifer is the principal source of drinking water for the City of Perryton. The public water supply system consists of 11 or more wells completed in the Ogallala aquifer. Well No. 2 has a total depth of 420 feet and a static water level of 290 feet. Within the Site, the Ogallala has been divided into an upper and lower flow zones. The principal production zone for the City of Perryton is the lower flow zone, while the upper flow zone produces a minimal amount of water and is isolated from the lower zone. Ground water flow in the lower zone is to the south-southeast.

The selected remedy was a ground water pump and treat (P&T) system composed of two extraction wells and an air stripper treatment plant (ASTP) to remove the CTC from the extracted ground water. EPA conducted a shut-down of the ground water pump and treat system to evaluate potential contaminant rebound in the extraction wells after the July 2007 sample results confirmed that ground water in the lower zone had been cleaned up. The first rebound sampling event occurred on October 29, 2007 and the 2<sup>nd</sup> event was completed on November 28, 2007. The October 29<sup>th</sup> sample results indicated no change in extraction well MW-17EX, but Well #2 rebounded back to concentrations similar to pre-cleanup conditions. Following the November 28<sup>th</sup> sampling, Well #2 was re-started to ensure that the lower zone does not become contaminated again. The results for Well #2 indicated that contamination from the upper zone of the Ogallala was migrating downward along the gravel packed annulus of Well #2 and contaminating the lower zone. Continued operation of Well #2 after 2007 was necessary to prevent recontamination of the lower zone. The two extraction wells were sampled again during the week of January 7, 2008, and well MW-17EX contained 1 µg/L of carbon tetrachloride (CTC) and Well #2 contained 3.6 µg/L of CTC.

Two additional extraction wells were completed adjacent to City Well #2, targeting two separate intervals in the upper 90 feet of the Ogallala aquifer. Well drilling, construction, and initial development were completed in December 2006 followed by additional development of each well in January 2007. The two new wells did not produce a sufficient quantity of water to operate as extraction wells and will be used instead as ground water monitoring wells.

## Current Status

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The site is in the 8<sup>th</sup> year of the 10-year long-term remedial action and has achieved cleanup of a carbon tetrachloride plume in the main production zone in the Ogallala aquifer. The ground water pump and treat system is currently shut-down. The upper zone in the Ogallala aquifer, which is not considered to be a

productive zone for water supply, has not been cleaned up. EPA signed a Record of Decision Amendment in September 2011 that includes a technical impracticability (TI) waiver for the carbon tetrachloride and nitrate cleanup standards in the upper zone of the Ogallala aquifer. The surface boundary of the TI Zone is presented in the figure below. A quarterly ground water sampling event was completed in November 2011, and the next event is planned for February 2012.

A vertical pathway for contaminant migration from the upper perched zone to the lower production zone in the Ogallala aquifer was present along the Well #2 annulus. EPA completed the plugging and abandonment of Well #2 in January 2011. Successful abandonment of Well #2 will prevent recontamination of the lower zone and allow decommissioning of the ground water treatment plant. A site-wide ground water sampling event was completed in August 2011, and no changes were detected in the carbon tetrachloride (CTC) concentrations since the last site-wide sampling events in April 2008 and July 2007. The lower zone wells all remained below the cleanup goal of 5 micrograms per liter ( $\mu\text{g/L}$  or ppb).

## Benefits

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The pump and treat system has cleaned up the main production zone of the Ogallala aquifer. Successful abandonment of Well #2 will allow unrestricted use of the aquifer, the source of drinking water for the City of Perryton.

## National Priorities Listing (NPL) History

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NPL Inclusion Proposal Date:	September 29, 1998
NPL Inclusion Final Date:	January 19, 1999
HRS Site Score:	50

## Wastes and Volumes

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The cleanup goal for carbon tetrachloride in the ground water is 5 ppb. The cleanup goal has been achieved for the lower zone in the Ogallala aquifer. The upper flow zone still has contamination above the cleanup goal but behaves as a perched zone and not a part of the primary water production zone in the Ogallala. The Ogallala aquifer supplies drinking water to private residences and municipalities as well as water for irrigation across West Texas. The properties located above the contaminant plume are not affected by the ground water contamination.

## Health Considerations

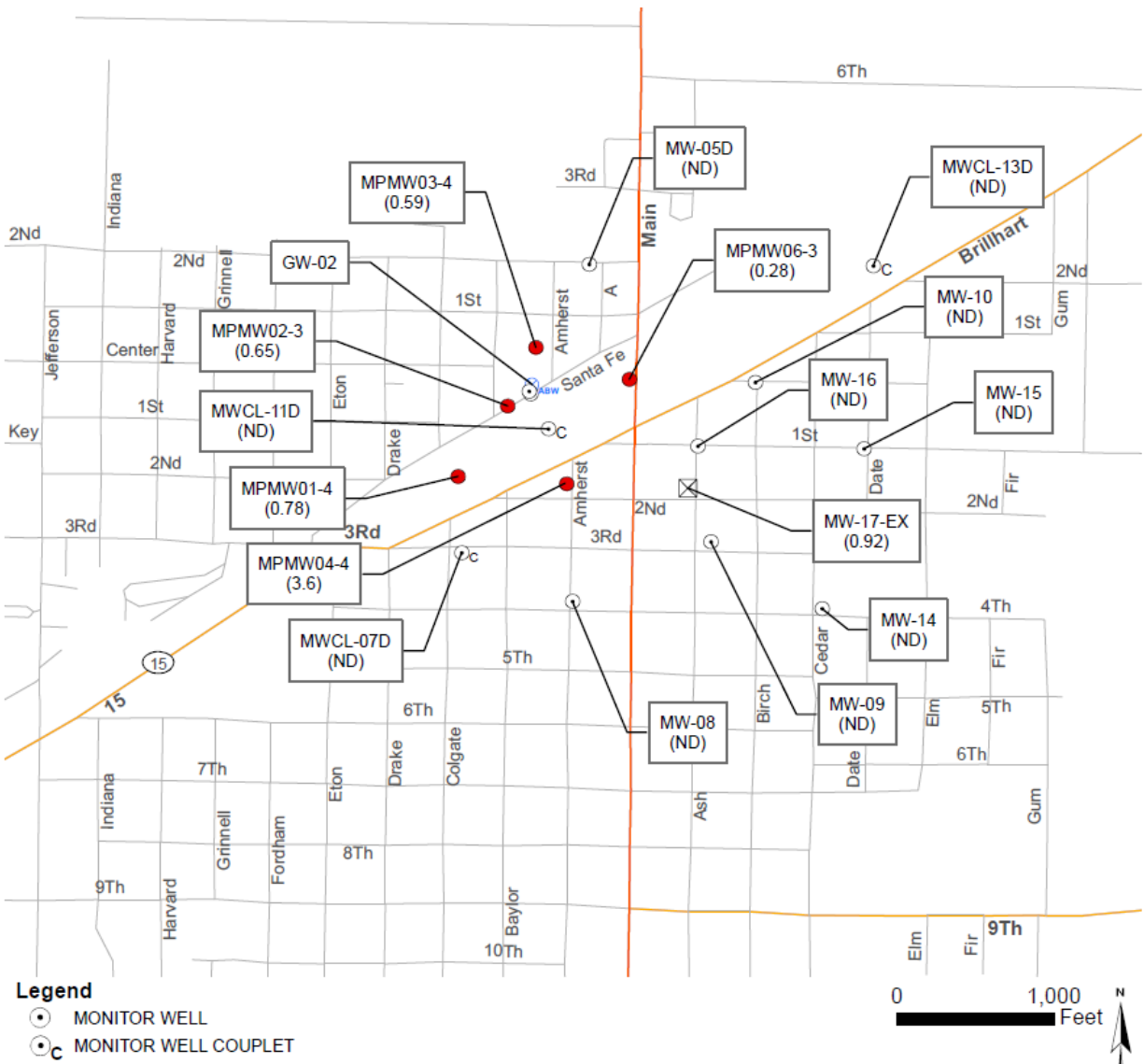
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The treatment system removed the carbon tetrachloride from the extracted ground water to concentrations below the detection limit of the analyses performed on the water samples. The remaining city water supply wells are not threatened by the contaminant plume and are routinely monitored as part of the requirements of the Federal Safe Drinking Water Act.

EPA completed the five-year review process on September 9, 2008. The report is posted on the EPA Region 6 website and a copy is available at the local repository in Perryton. The five-year review determined that the remedy is currently protective of human health and the environment. The remedy will attain long-term protectiveness after the issues and recommendations identified in the First Five-Year Review Report have been addressed. The issues are related to the presence of contamination in an upper perched zone of the aquifer beneath the source area and the actions needed to prevent future site exposure. The Second Five-Year Review is scheduled for completion by September 2013.

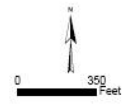
## Site Map

The site map below illustrates the site-wide monitoring well network that was used to define the extent of the carbon tetrachloride plume in the Ogallala aquifer. The next two maps labeled figures 9 and 10 illustrate the boundaries of the technical impracticability zone for the upper zone and lower unit 2 of the Ogallala aquifer, the extent of the remaining carbon tetrachloride contamination in the two zones





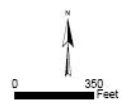
- Legend**
- MONITOR WELL
  - ⊗ MONITOR WELL COUPLET
  - MULTI-PORT MONITOR WELL
  - HORIZONTAL BOUNDARY OF TI ZONE
  - 5 µg/L CARBON TETRACHLORIDE CONCENTRATION CONTOUR IN UPPER ZONE



**FIGURE 9**  
MONITOR WELLS TO BE USED TO MONITOR THE TI ZONE IN THE UPPER ZONE  
CITY OF PERRYTOWN WELL NO. 2 SUPERFUND SITE  
PERRYTON, TEXAS



- Legend**
- MONITOR WELL
  - ⊗ MONITOR WELL COUPLET
  - MULTI-PORT MONITOR WELL
  - HORIZONTAL BOUNDARY OF TI ZONE
  - 5 µg/L CARBON TETRACHLORIDE CONCENTRATION CONTOUR IN LOWER UNIT 2



**FIGURE 10**  
MONITOR WELLS TO BE USED TO MONITOR THE TI ZONE IN LOWER UNIT 2  
CITY OF PERRYTOWN WELL NO. 2 SUPERFUND SITE  
PERRYTON, TEXAS

## **Record of Decision (ROD)**

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An Interim Record of Decision was signed on September 29, 1999 and a final Record of Decision was signed on September 26, 2002. An amendment to the Record of Decision was signed on September 29, 2011.

## **Community Involvement**

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EPA completed the five-year review process on September 9, 2008, and a public announcement was posted in the Amarillo and Perryton newspapers on September 12<sup>th</sup> and 14<sup>th</sup>, respectively.

**Information Repository:** Perry Memorial Library, 22 S.E. 5th Street, Perryton, TX 7900-3112

## **Site Contacts**

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