

Payson PCE

Water Quality Assurance Revolving Fund ([WQARF](#)) Site

Boundaries:

The Payson PCE WQARF Site (Site) is located in Payson, Arizona and is bounded approximately by Frontier Street to the north, Beeline Highway (State Route 87) to the east, Cedar Lane to the south and McLane Road to the west.

The plume boundaries depicted on the [site map](#) represent the Arizona Department of Environmental Quality's (ADEQ) interpretation of data available at the time the map was constructed. The map is intended to provide the public with basic information as to the estimated extent of known contamination as of the date of map production. The actual extent of contamination may be different. Therefore, the plume may change in the future as new information becomes available.

Site Status Update:

The Town of Payson (TOP) continues to operate and fund the groundwater treatment system. Groundwater is treated through carbon vessels and is distributed to a holding tank at the Site. To ensure compliance with drinking water standards, the TOP collects water samples on a monthly basis from the system prior to discharging the treated water to the municipal drinking water system.

The Site is currently in the [operations and maintenance](#) phase of the [Record of Decision](#) (ROD). It is anticipated that the existing groundwater cleanup system will operate until approximately 2033 or until the [tetrachloroethene](#) (PCE) concentrations in groundwater are consistently below the 5.0 micrograms per liter ($\mu\text{g/l}$) [Aquifer Water Quality Standard](#) (AWQS).

Community Involvement Activities:

A [community advisory board](#) (CAB) was formed for the Site in conjunction with the [Tonto and Cherry Site](#). The CAB's final meeting was held Nov. 18, 2008 where ADEQ presented the final Record of Decision (ROD) for the Tonto and Cherry Site. The most recent [fact sheet](#) can be found on the ADEQ Web site.

Site History:

1990: The Town collected samples from four future production wells (TOP-4, TOP-5, TOP-19, and TOP-20). [Tetrachloroethene](#) (PCE) was detected in two of the production wells (TOP-4 and TOP-5) at 13,600 $\mu\text{g/l}$ and 542 $\mu\text{g/l}$, respectively. The Site was identified as a potential WQARF site in 1990.

1993: ADEQ conducted a preliminary assessment/site inspection which identified the Old Payson Dry Cleaners, located at 904-906 S. Beeline Highway, as a potential source of

contamination. The Old Payson Dry Cleaners operated at the 904-906 S. Beeline Highway location from 1976 to 1984.

1995: In June, ADEQ removed the septic tank system and surrounding soils as an [early response action](#) under WQARF.

1996: In September, the Interim Groundwater Treatment System (IGTS) was constructed to remediate groundwater at the source area. From 1996 to 1998, ADEQ installed groundwater [monitor wells](#) to define the extent of groundwater contamination.

1997: In August, the EGTS construction began to remediate groundwater [downgradient](#) of the source area. In December, a 90-day operational test was conducted using the completed IGTS.

1998: In March, a [wellhead](#) treatment system was constructed at the Town production well. The Site was added to the [WQARF Registry](#) on April 28, with an eligibility and evaluation score of 63 out of a possible 120. In October, the IGTS and EGTS became operational and began treating and delivering water to the Town.

1999: In September, three abandoned [underground storage tanks](#) located at the source area were removed. Soil sampling and [soil vapor](#) sampling were conducted, and three nested vapor monitor wells were constructed and sampled.



Carbon Chamber at EGTS

2001-2002: In 2001, two additional groundwater extraction wells, EX-1 and EX-2, were drilled and constructed to provide additional capture of the plume. A [soil vapor extraction](#) (SVE) system was constructed to remediate contaminated soils in the source area in 2001 and was operated until October 2002. In June 2002, the [Remedial Investigation](#) (RI) report was finalized.

2003: In January, the IGTS was turned off and the SVE system was decommissioned. The [Feasibility Study](#) (FS) was completed in May. The [Proposed Remedial Action Plan](#) (PRAP) was completed and ADEQ responded to comments.

1999-2006: PCE concentrations were detected at approximately 760 µg/l in December 1999 from a monitor well close to the source area. The concentration decreased to approximately 50 µg/l in September 2006.

2007: Semi-annual groundwater sampling was conducted in March and September. The highest PCE concentration detected during the September sampling event was 41 and 40 µg/l, respectively, in one well (DMW-1) in the Fractured Granite/Competent Granit Unit. In the Alluvial Unit, PCE concentrations ranged from non-detect to 21 µg/l. The ROD for this Site was signed in June.

2008: Groundwater samples were collected and water level measurements taken in March, June, September and December. The highest PCE concentration (32 µg/l) was detected in

monitor Well DMW-1C. This well is located southeast of the groundwater treatment system and near the source area. PCE concentrations exceeding the AWQS were present in nine other monitor wells in the immediate vicinity.

2009: ADEQ continued to fund the operation of the ETGS. Between October and December, 18,015,400 gallons of water were treated and 0.41 pounds of PCE were removed. As of Dec. 31, the EGTS removed a cumulative total of 497.56 pounds of PCE. A cumulative total of 832,781,500 gallons of water were treated.

2010: In late September and early October, groundwater samples were collected from 42 monitor wells at the Payson PCE WQARF Site. PCE results ranged from non-detect (ND) to 16.3 micrograms per liter ($\mu\text{g/l}$). Samples from 5 wells in the Payson PCE WQARF area contained PCE concentrations that exceeded the AWQS.

Contaminants:

The current contaminant of concern in groundwater is [tetrachloroethene](#) (PCE). [Methyl tertiary butyl ether](#) (MTBE), a previous contaminant of concern, has not been detected during recent groundwater sampling events, and is therefore no longer a contaminant of concern. Contaminants of concern at the Site may change as new data become available.

Public Health Impact:

ADEQ and the Town have taken precautions to prevent public exposure to the contamination. The contaminated municipal wells have not been put into production for public supply without adequate treatment. The [Arizona Department of Health Services](#) has developed a [“Statement of Risk”](#) to address the risks associated with consumption of water from contaminated private wells in the area. Even though most of the private wells that were found to be contaminated contained PCE concentrations below the AWQS of less than 5.0 $\mu\text{g/l}$, the owners of these wells have been advised that continued use of the water is not recommended.

In March 1997, the Site boundaries were expanded to include additional private domestic wells located to the north and south of the Site. Several of these wells were found to be contaminated with PCE above the AWQS. ADEQ informed the owners that drinking the well water could be unhealthy, and that ADEQ would provide a temporary supply of bottled water for the owners' use until they could secure an alternative supply. Currently all domestic wells are either below AWQS, dry due to a decline in groundwater elevation, or are no longer in use as the owners have connected to the Town water system.

Site Hydrogeology:

The [aquifer](#) at the Site is in the Payson Granite. The hydrogeology of the Payson area has been defined through the development of the Site Hydrogeologic Conceptual Model (HCM) based on drilling and testing activities.

The HCM identified three primary hydrologic units in descending order in the Payson Granite: 1) Alluvium/Colluvium, 2) Decomposed Granite/Fractured Granite, and 3) Variably Fractured Granite/Competent Granite. The groundwater flow direction is west.

Contacts:

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Information Repository:

Interested parties can review select Site documents at the [Payson Public Library](#) located at 328 N. McLane Road, (928) 474-9260.

The complete official Site file can be reviewed at the ADEQ Main Office located at 1110 W. Washington Street, in Phoenix. Please contact (602) 771-4380 or (800) 234-5677 to schedule an appointment with 24-hour notice to review these documents. Once all documents requested have been collected, you will be contacted for a review Monday through Friday from 8:30 a.m. to 4:30 p.m. at the ADEQ Records Management Center, 1110 W. Washington Street in Phoenix, AZ.