

Phoenix-Goodyear Airport South [EPA](#) National Priorities List (NPL) Site

Boundaries:

The Phoenix-Goodyear Airport (PGA) Superfund Site (Site) is located approximately 17 miles west of Phoenix in Goodyear, Arizona. The Site is divided into a northern portion called [PGA North](#) (PGAN) and a southern portion called PGA South (PGAS). Contamination from these two areas is not contiguous.

PGAS is in the western part of the Salt River Valley, within the City of Goodyear in Maricopa County. The boundaries are Yuma Road to the north, Litchfield Road to the east, Hwy. 85 to the south, and Reems Road to the west. PGAS is comprised of the [Phoenix-Goodyear Airport](#) (formally owned by the U.S. Navy) and the [Lockheed Martin Corporation](#) (formerly the Goodyear Aerospace Corporation and Loral Defense Systems- Arizona) and any groundwater contamination emanating from these areas. The plume boundary varies and may extend beyond the site boundary, but remains part of the Superfund site in its entirety. The property where Lockheed Martin Corporation continues their operation was sold and they are now one of several tenants on the property.



Goodyear Aerospace Corporation, a former subsidiary of GTRC, began operation at the airport in 1942. In 1968, the Navy transferred ownership of the facility to the City of Phoenix, and the facility became the Phoenix-Litchfield Municipal Airport. The airport was renamed the Phoenix-Goodyear Municipal Airport in 1986.

Waste from aircraft preservation and routine aircraft maintenance from cleaning and degreasing was discharged into the main drainage ditch, which eventually drained into a marsh area south of the airport. The discharged waste streams contained oil, grease, battery acids, and miscellaneous degreasing solvents. This practice continued until 1952, when the on-site sewage treatment plant was constructed.

The majority of the waste streams generated were attributed to metal treatment processes such as anodizing, degreasing, and etching. These waste streams included waste solvents, [trichloroethene](#) (TCE), [chromium](#) sludge, and processed wastewater. Prior to 1980, much of the waste generated from anodizing, metal etching, and plastics polishing was disposed of in three on-site sludge drying beds located at the southern portion of the plant.

In 1981, the [Arizona Department of Health Services \(ADHS\)](#) discovered that the groundwater underlying the PGA area was impacted by industrial solvents and chromium. In 1982 and 1983, ADHS and the USEPA identified eighteen wells that were contaminated with TCE. The Site was formally listed on the [National Priorities List \(NPL\)](#) on September 8, 1983, as the Litchfield Airport Superfund Site, since renamed PGA Superfund Site.

Site Status Update:

Contaminated groundwater at PGAS continues to be monitored and a [pump and treat](#) system continues to address its occurrence in the Subunit A and the Subunit C plumes. To further delineate the source of contamination, new groundwater [monitor wells](#) have been installed to investigate sites within the PGA. Wells used to inject treated groundwater as a hydraulic containment measure were rehabilitated at PGAS.

Contamination in groundwater is monitored through a network of wells that record groundwater flow patterns and incidence of TCE and chromium, the two major chemicals of concern at PGAS. Drinking water wells for the city of Goodyear that are closest to PGAS are monitored on a monthly basis to ensure that contaminants are not impacting this vital resource. To date, the two wells being closely monitored, COG No. 11 and COG No. 20, have not exceeded contaminate levels considered to be a threat to health.

The level of TCE in groundwater in Subunit C below the airport (southern Subunit C Plume) has undergone a “pulse pumping evaluation” over the last year. With the exception of one well, TCE contamination in groundwater appears to be below [Maximum Contaminant Level](#) (MCL) which is considered no longer a threat to health.

A [Five-Year Review](#) (FYR) report that combined both the PGAN and PGAS sites was completed in 2010. This report is required by Superfund or [CERCLA](#) process when hazardous substances remain on site above levels which permit unrestricted use and unlimited exposure. FYRs provide an opportunity to evaluate the implementation and performance of a remedy to determine whether it remains protective of human health and the environment. Generally, reviews are performed five years following the initiation of a CERCLA response action, and are repeated every succeeding five years so long as future uses remain restricted.

Community Involvement Activities:

A [community advisory group](#) (CAG) was formed in January 2001, in conjunction with [PGAN](#) and the [Western Avenue WQARF Site](#). CAG members are selected from [applications](#) received. Meeting [agendas](#) and minutes for 2010 and 2011 can be viewed at the Arizona Department of Environmental Quality (ADEQ) Web site and the meetings are open to the public. EPA publishes [fact sheets](#) that are sent to the community involvement area regarding site progress, and the latest [fact sheet](#) can be viewed on the ADEQ Web site.



CAG Members Tour a Groundwater Treatment System

Site History:

1942-1946: PGA served as the Litchfield Park Naval Air Facility since 1942. [Goodyear Tire and Rubber Company](#) began operating Goodyear Aerospace at the airport, modifying and repairing aircraft, which were then transferred to the adjoining Naval Air Facility from 1940 to 1945. In 1946, the Naval Air Facility was placed in modified maintenance status. Its primary function became the preservation and activation of military aircraft.

1968: The Navy transferred ownership of the property to the [City of Phoenix](#).

1974: Goodyear Aerospace discontinued using TCE at PGAS.

1981-1983: [ADHS](#) discovered the groundwater contamination in 1981. EPA added the Site to the [National Priorities List](#) (NPL) on [September 8, 1983](#).

1984: EPA began a [remedial investigation](#) (RI) of the Litchfield Airport Area (presently known as the Phoenix-Goodyear Airport) to characterize the site, discover the extent of the contamination, and identify possible sources. From this study, the site was divided at Yuma Road into a north and a south portion.

1987: An [Operable Unit](#) (OU) [Record of Decision](#) (ROD) for PGAS was signed for the Section 16 OU. This OU addresses groundwater contamination in the upper [alluvial](#) unit only in Section 16. Groundwater contaminant concentrations in Section 16 were at least 100 times greater than those of [downgradient](#) levels. Therefore, it was essential to quickly address this area to mitigate further contamination to the Subunit A and Subunit B/C.

1989: The RI/[feasibility study](#) (FS) for the Site was completed in June, and a comprehensive Final Remedy ROD was signed in September for PGAN and PGAS.

1991: A [consent decree](#) (CD) for the final remedy was lodged on May 7 and entered in November, with EPA, the State, Goodyear Tire and Rubber Company, and [Loral Defense Systems](#) as signatories. This document binds Goodyear Tire to remediate the Subunit B/C aquifer and contaminated soils.

1992: Goodyear Tire conducted a removal action of metal contaminated soils located at the [sludge](#) drying beds. The soils containing [chromium](#) and cadmium above the [Health Based Guideline Levels](#) were stabilized, thereby eliminating the risk of exposure by ingestion and inhalation and preventing further migration to groundwater.

1993: [Tetrachloroethene](#) (PCE) was detected in PGAS Subunit A groundwater wells coming from the Western Avenue PCE WQARF (dry cleaning) Site due east and upgradient of the PGAS plume.

1994: There are two plumes within Subunit C associated with the Site, caused by conduit wells, which were promptly abandoned. Groundwater extraction and treatment of these two plumes began using [granular activated carbon](#).

1998: In April, ADEQ approved the closure and decommissioning of the [soil vapor extraction](#) (SVE) system. The [Vadose Zone](#) Leaching Model was used to determine that the residual threat to the groundwater was below the maximum contaminant level. The Goodyear Tire Company has thereby satisfied the requirements under the 1991 consent decree for closure of soils.

2004: An [extraction well](#) (E-102) for the northern portion (head) of the northern sub-unit C plume was installed and up and running in November.

2005: The [FYR](#) report was prepared and finalized by the EPA in September. This was an essential step in evaluating the status of the groundwater remedy and the need for improvement. EPA identified several issues to be addressed by the [potential responsible party](#) (PRP)

2006: Issues brought up during the FYR were addressed and work plans for a new extraction well (E-18) were approved.

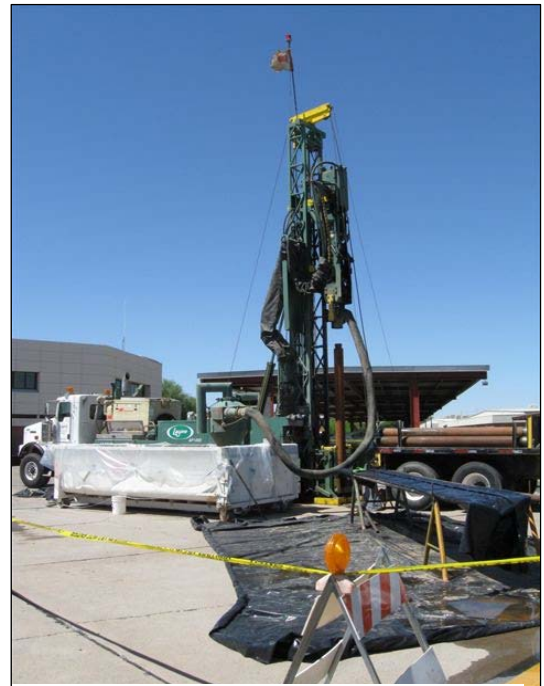
2007: Due to age, Goodyear Tire and Rubber Company conducted maintenance on many components of the treatment systems. Groundwater monitoring and [operation and maintenance](#) (O&M) activities of the groundwater treatment systems continued.

2008: The O&M Manuals were updated and metals sampling rounds were conducted. Groundwater monitoring and O&M activities of the groundwater treatment systems continued. ADEQ and EPA continued to meet with the Goodyear Tire and Rubber Company to have groundwater wells installed to further delineate the Subunit C plume north of Yuma Road.

2009: Goodyear Tire and Rubber Company recommended pulsed pumping to overcome hydraulic stagnation and to address the residual contaminant mass in Southern Subunit C groundwater. A Work plan submitted to install two additional wells (GMW-21UC and GMW-22UC) to monitor TCE concentration in production well GAC-04 was submitted.

2010: Groundwater monitoring continued to track contamination at PGAS. Goodyear Tire and Rubber Company completed a pulsed pumping evaluation of the Southern Subunit C plume. Well rehabilitation was completed on three Subunit A wells (E-12, E-7, and NE-5) and on Subunit C wells I-201 and I-203. Two new Subunit C monitoring wells were installed in an effort to understand contamination in wells GAC-04 GMW 21C and 22C.

ADEQ and EPA completed the [FYR for PGAS](#). A protectiveness determination of the remedy was not made in the report, but was deferred until further information is obtained. While the TCE plume at PGAS has been mostly delineated with COC concentrations in the plume being stable or decreasing over



Installation of GMW-22C

the last five years, the northwestern edge of the northern plume is not completely defined. Further information will need to be obtained by conducting a groundwater investigation of northern TCE plume in Subunit C. Several issues that affect long term protectiveness have also been identified: The source and extent of the TCE contamination in and around GAC-04 has not been determined and the continued occurrence of elevated chromium in the northern Subunit A plume has not been fully understood.

Contaminants:

The current contaminants of concern in groundwater include [trichloroethene](#) (TCE), [tetrachloroethene](#) (PCE), and [chromium](#). Contaminants of concern at PGAS may change as new data becomes available.

Public Health Impact:

Potential health risks may exist for individuals who ingest the contaminated groundwater. There are no known drinking water supply wells at PGAS. The [City of Goodyear](#) regularly monitors their drinking water supply wells, as required by law.

Site Hydrogeology:



Extraction Well E-102

PGAS lies within the Basin and Range physiographic province, consisting of alluvial basins and mountain ranges. The alluvial deposits of the western Salt River Valley consist of the Upper Alluvial Unit (UAU), the Middle Fine-grained Unit, or Middle Alluvial Unit and the Lower Conglomerate Unit, or Lower Alluvial Unit.

In the vicinity of PGAS, the UAU is approximately 350 feet thick and is further divided into three subunits: Subunit A, Subunit B, and Subunit C. Subunits A, B, and C are hydraulically connected. Subunit A is composed of silty sand and gravel and extends to a depth of approximately 120 feet below ground surface (bgs). The lower half of Subunit A is saturated and is considered an aquifer. Subunit B is also comprised fluvial sedimentation consisting of sand, sandy-silt, and clay, possibly representing ancient stream deposits. Locally this horizon is thought to act as an [aquitard](#) which impedes the vertical flow of groundwater from Subunit A to C. Subunit B generally occurs at depths between 120 and 190 feet below grade surface (bgs). Subunit C consists of silt, sand, and gravel and occurs typically from 190 to 350 feet bgs. Groundwater contained within Subunit C is pumped for drinking water and agricultural purposes.

Groundwater flow direction within both aquifers is largely influenced by pumping as there are multiple domestic, municipal, irrigation, and remediation (extraction and [injection](#)) wells in the vicinity of PGAS. A groundwater divide occurs within Subunit A in the vicinity of Yuma Road, separating PGAN from PGAS. Subunit A within PGAS typically flows to the southwest and groundwater within Subunit C is to the west. Depth to groundwater within Subunit A is 60 to 80 feet bgs and approximately at 200 feet bgs within Subunit C.

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*In Arizona, but outside the Phoenix area, call toll-free at (800) 234-5677.

**Call EPA’s toll-free message line at (800) 231-3075.

Information Repository:

Interested parties can review select Site documents at the [Sam Garcia Western Avenue Library](#) located at 495 E. Western Avenue in Avondale, (623) 333-2665.

Site files are also located at the ADEQ Main Office located at 1110 W. Washington Street, 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.

The complete official Site file can be reviewed at the EPA Region IX, [Records Center](#), Mail Stop SFD-7C, 95 Hawthorne Street, Room 403, San Francisco, CA 94105, (415) 536-2000.