

Los Reales Landfill

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

Boundaries:

The Los Reales Landfill Site (Site) is located on the southeast side of Tucson, Arizona south of Interstate 10 at Craycroft Road (Craycroft turns into Los Reales Road going south from Interstate 10). The Site includes an active municipal sanitary landfill located at 5300 East Los Reales Road consisting of approximately 380 acres. The [City of Tucson](#) (the City) owns and operates the landfill and manages Site cleanup activities with oversight from the Arizona Department of Environmental Quality (ADEQ).

The plume geographic boundaries depicted on the [Site map](#) represent ADEQ's 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 City has determined the full extent of contamination, and the [pump and treat](#) groundwater treatment system (GWTS) has been expanded accordingly. Since the initial startup of the system in 2000, approximately 173 million gallons of groundwater have been treated, and approximately 14 pounds of non-Freon [volatile organic compounds](#) (VOCs) have been removed.



Landfill Gas Piped to Tucson Electric Power

The City plans to connect three new [extraction wells](#) (installed in late 2008) to the treatment system in 2009. Also, the City will be evaluating the feasibility of connecting to the treatment system an existing deeper groundwater well where contamination has been found.

Since 1999, a landfill gas recovery system has been delivering enough [methane](#) to Tucson Electric Power to supply energy for about 4,000 homes.

Community Involvement Activities:

The City involved the community throughout the [remedial investigation/feasibility study](#) (RI/FS) process. However, if the [Proposed Remedial Action Plan](#) is significantly modified; additional public comment will be solicited. The most recent [fact sheet](#) can be found on the ADEQ Web site.

Site History:

1967: The Los Reales Landfill opened and accepted municipal waste.

1977-1980: Low level hazardous waste was deposited in an approximately four acre area of the southwestern portion of the landfill called the Southwest Disposal Area (SWDA). This area and the main landfill cell area were unlined.

1988: In August, VOCs were first detected in two [monitor wells](#) along Los Reales Road (the northern boundary of the landfill).

1991: In October, the RI Report from the City revealed a plume of VOC-contaminated groundwater extending northwest approximately one-half mile from the northwest corner of the landfill. The main unlined landfill cell appeared to be the primary source of groundwater contamination.



The Pump and Treat System at the Los Reales Landfill

1994: In September, the FS was submitted to ADEQ analyzing potential remedial strategies for the groundwater contamination.

1995-1997: In April 1995, a letter of determination approved the final remedial action plan which provided for a pump and treat reinjection system. In September 1997, ADEQ approved the conceptual design plan for installation of the treatment system. One year later, the City began construction.

1999: In March, the pump and treat facility began operation. Groundwater was pumped from ten extraction wells, treated by [air stripping](#), and contaminants in the air-stripper exhaust were captured by a carbon filter. A portion of the treated water was reinjected into the [aquifer](#) by two [injection wells](#) and the other portion was used for dust control at the landfill. The system was designed to handle up to 90 gallons per minute.

The Site was placed on the [WQARF Registry](#) in April with a score of 32 out of a possible 120. Also in April, the City identified additional contamination while replacing a monitor well for new cell construction to the east of the original remedial system wells. The City addressed the additional contamination by expanding the existing pump and treat system. In August, landfill gas began to be piped to [Tucson Electric Power](#) as an alternative fuel source. The landfill produces enough methane energy to power 4,000 homes.



The Soil Vapor Extraction System at the Southwest Disposal Area

2000: In February, the City identified further contamination south of the existing plume while closing out the SWDA.

2003: In May, the City began operating a [soil vapor extraction](#) system to address high soil gas concentrations. On July 25, 2003, the SWDA was accepted into the [Voluntary Remediation Program](#) (VRP) of ADEQ. Due to co-mingling plumes, this general area is currently regulated

under two ADEQ programs. All SWDA soil issues will be reviewed and handled by VRP while all groundwater issues are regulated by WQARF.

2005: In August, the City installed six new groundwater monitor wells to further characterize the extent of groundwater contamination.

2006: In October, the City made modifications to three existing wells (WR-048A, WR-049A and WR-175A) to seal off the lower water bearing zone and prevent contamination from migrating from the upper water bearing zone through these wells into the lower water bearing zone.

2007: To improve contamination capture and containment, the City contracted a consultant to design upgrades to the existing GWTS and incorporate an additional seven extraction wells and one injection well. The [upgraded system](#) became fully operational in December.

2008: The upgraded pump and treat system continued to operate. In 2008, the City replaced three poorly performing extraction wells to increase plume containment. Also in December 2008, the City installed three new extraction wells along the western property boundary of the landfill to provide better containment in that area.

Contaminants:

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

Public Health Impact:

In March 1994, the risk assessment for the Site was finalized by [Arizona Department of Health Services](#). Results from the assessment indicate that because contaminated water from the area is not currently being used for drinking water, there are no significant health risks associated with this Site; however, if you are drinking water from a private well within the boundaries of the Site, please contact the ADEQ Project Manager.

Site Hydrogeology:

The Site is located within the Tucson Basin, a northwest trending [alluvial](#) valley covering an area of about 750 square miles in the Santa Cruz River drainage basin of southeastern Arizona. The subsurface lithology generally consists of alluvial deposits of sand, silt, clay, and some gravel. The upper portion of the aquifer consists of sandy silt or sand with gravel and silt, and the lower portion of the aquifer begins 190-205 feet below ground surface (bgs) with a silty clay or a sandy clay. Depth to the regional aquifer occurs at 190 to 210 feet bgs. The groundwater flow direction is to the northwest.

Contacts:

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*In Arizona, but outside the Tucson area, call toll free (888) 271-9302.

Information Repository:

The complete official Site file is located in Phoenix at the ADEQ Central Office at 1110 W. Washington Street; however, select documents are also available in Tucson at the [Southern Regional Office](#) at 400 W. Congress, Suite 433. Files are available for review Monday through Friday from 8:30 a.m. to 4:30 p.m. To arrange for a time to review the Site file at the main ADEQ office, please call the ADEQ Records Management Center with 24-hour notice at (602) 771-4380 or (800) 234-5677 (Arizona toll-free). Please call (520) 628-6715 to arrange a file review appointment at the Southern Regional Office.