



# NORTH AREA OF PHOENIX GOODYEAR AIRPORT SUPERFUND SITE

U.S. Environmental Protection Agency • Region 9 • San Francisco, CA • October 2004

## SITE PROGRESS

Since our last update in August 2003, progress has been made through the following activities:

- Removing more than 650 pounds of contaminants from soils since the soil vapor extraction (SVE) system operation began in May 2004;
- Commencing a source area investigation in the main drywell area to further investigate the extent of soil contamination at the north end of the Unidynamics facility;
- Conducting summer season air sampling at several buildings near the Unidynamics facility in September 2003;
- Continuing to remove more than 36,000 pounds of trichloroethylene (TCE) by use of groundwater pump-and-treat systems (over 36,000 pounds removed since operation began in 1994);
- Removing more than 37 pounds of perchlorate by secondary treatment of groundwater at the City of Goodyear's wastewater treatment plant beginning in 2003;
- Closing seven potential conduit wells properly and continuing work on several others; and
- Investigating and monitoring the extent of perchlorate and TCE contamination in the groundwater.

### SVE SYSTEM RESTARTED

In May 2004, Crane Co. completed a soil vapor extraction (SVE) system pilot study to determine the ability of the SVE system (extraction wells, piping and blower) to recover soil gas from the Site. SVE is a process that extracts soil vapors from the ground through wells using a large blower. The wells are plumbed to a central treatment unit. The treatment unit destroys or contains the soil gas contaminants. At PGA North, the contaminants are treated in a treatment unit containing granulated activated carbon (GAC) which traps the contamination in carbon filters, preventing it from escaping into the air (see Figure 1).

Because the PGA North original SVE system was designed to treat extracted vapors with a thermal oxidation treatment unit, one of the first steps of the pilot study was to replace the old treatment unit with GAC. Other pilot study upgrades included replacing some damaged plastic piping, upgrading the blower system and other engineering improve-

ments. The pilot study results indicated that soil vapors were concentrated in the vicinity of four SVE wells near four main drywells and that the new upgraded SVE system is capable of removing approximately 10 pounds of trichloroethylene (TCE) from the soil gas per day. Since the actual SVE start-up, more than 650 pounds of

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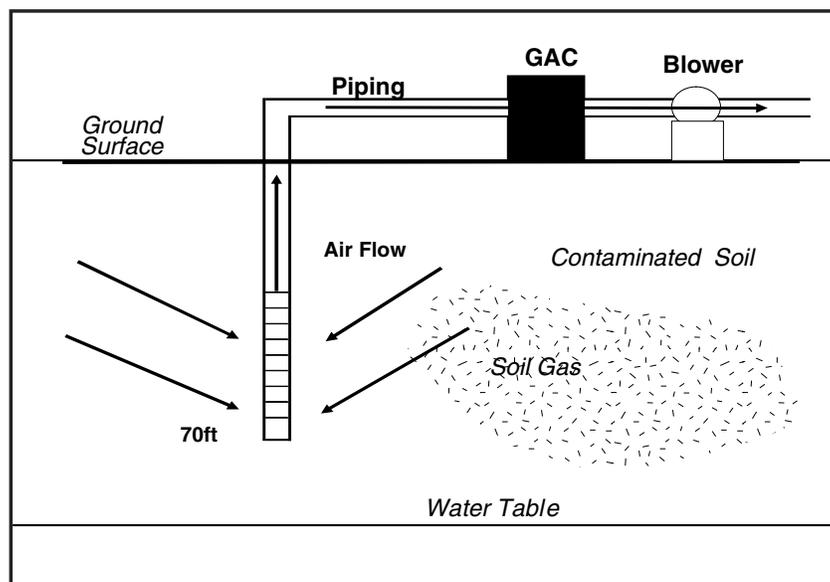


Figure 1. Soil Vapor Extraction System

TCE and other volatile organic compounds (VOCs) have been removed during the four-month period of May to August, 2004 (see Figure 2). For comparison, the 1994-1998 operation of the SVE system with a thermal oxidation treatment unit resulted in approximately 9,700 pounds or more TCE being removed.

## INVESTIGATION IN SOURCE AREA

As a follow-up to EPA's August 2003 soil gas investigation at the northern end of the Unidynamics facility (which extended into the rear parking lot of several buildings located at the corner of Litchfield Road and Van Buren Avenue), Crane Co. plans to continue investigation in the vicinity of the former main drywell area in Fall 2004. (This area is also

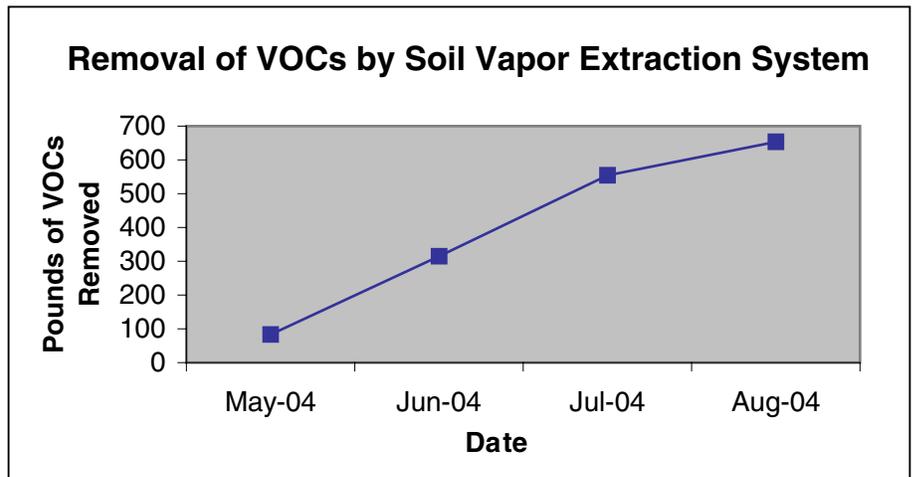


Figure 2: Removal of Volatile Organic Compounds by Soil Vapor Extraction System

referred to as Solid Waste Management Unit (SWMU) #1 Drywell Area.) Fourteen soil borings will be installed to a total depth of approximately 160 feet below ground surface to collect soil, soil gas and groundwater samples (see Figure 3). An additional groundwater monitor well will also be installed to further monitor the activity in this area. The data will be evaluated to determine the relationship of soil vapor that may be generated by contaminants bound up in the soils versus soil vapor that is generated by off-gassing from contaminants in the groundwater. Based on the analysis of the data, Crane Co. will submit recommendations to EPA on possible design changes to the SVE system and other cleanup technologies that may help speed up soil, soil vapor and groundwater cleanup.

## RESULTS OF INDOOR AIR SAMPLING

Because EPA detected significant levels of subsurface soil gas contamination north of the Unidynamics facility property line underneath the rear parking lot of three nearby buildings, Crane Co. collected indoor and outdoor air samples from these buildings in September 2003. The 2003 sample results did not detect any concentrations of Site contaminants in the indoor air at any levels of concern. However, because the samples were collected during a hot summer season, Crane Co. also plans to conduct a follow-up event in January 2005 to collect samples during a cooler winter season to evaluate any potential seasonal differences. Should any Site-related contaminants be detected at levels of concern in these buildings, Crane Co. will be

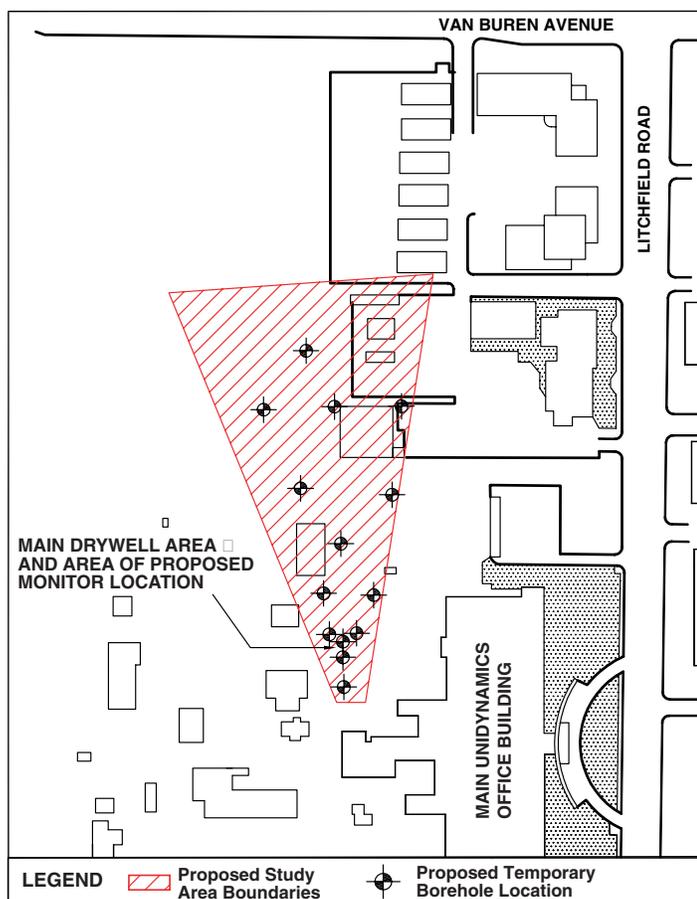


Figure 3: Main Drywell Investigation Study Area

required to implement any necessary measures to control releases of vapors to the atmosphere.

## ON-GOING GROUNDWATER TREATMENT

Groundwater treatment continues to remove TCE and perchlorate, the two primary groundwater contaminants of concern.

Perchlorate treatment, beginning with pilot testing in September 2002, has been underway at the City of Goodyear's wastewater treatment plant for more than two years. To date, the treatment continues to be

successful and an estimated 37 pounds of perchlorate have been removed during the period from January 2003 to August 2004. Since the beginning of groundwater treatment in 1994, more than 36,000 pounds of TCE have been removed by the use of the Unidynamics treatment facility (referred to as Phase I and Phase 2/3), the second treatment facility near the northern end of the plume (referred to as Wellhead 33A), and a third well-head treatment facility (33C) that operated until 1998 (see Figure 4).

## CLOSURE OF POTENTIAL CONDUIT WELLS

During 2004, work has continued on investigating and properly closing potential conduit wells. Seven potential conduit wells have been closed (often referred to as abandonment) according to Arizona Department of Water Resources (ADWR) requirements and work continues on several other potential conduit wells. As shown in Figure 5, a potential conduit well may allow contaminants to migrate from the upper aquifer to deeper drinking water zones along the outside of the well's casing. Therefore, closure of these wells is a high priority.

## GROUNDWATER MONITORING AND INVESTIGATION

Further evaluation of the existing groundwater monitoring system and analysis of quarterly groundwater monitoring data has continued during 2004. A current plume map depicting the extent of TCE and perchlorate contamination in the upper zones, 100-200 feet below ground surface (bgs), shows that the plume continues to expand, most recently at the

## TCE & Perchlorate Removal from Groundwater Treatment Systems

Reporting Period	Mass of TCE Removed (lbs)	Mass of Perchlorate Removed (lbs)
1994-2002	34,413	*
2003	1,179	20.5
Jan-Aug 2004	<u>778</u>	<u>16.4</u>
<b>Total Mass Removed</b>	<b>36,370</b>	<b>36.9</b>

\* = No perchlorate treatment until 2003

Figure 4. TCE and Perchlorate Removed by Groundwater Treatment Systems

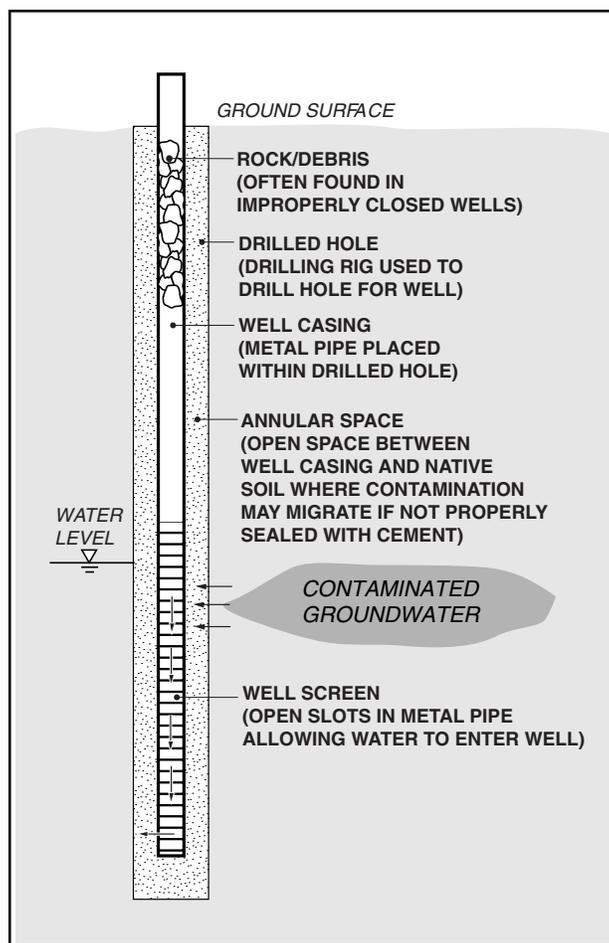


Figure 5. Diagram of Potential Conduit Well

northeast end of the plume (Figure 6). The extent of contamination in the deeper zones (greater than 200 feet bgs) that are used for drinking water purposes is still not defined. However, based on available data a preliminary map depicting the extent of potential TCE and perchlorate in the deeper aquifer is shown on Figure 7. An updated groundwater model is also under development to assist in selecting locations for additional monitor wells as well as extraction wells to control plume migration and remove contamination from both the upper and deeper aquifers.

## PROTECTION OF DRINKING WATER SUPPLIES

EPA and Crane Co. continue to monitor all drinking water supply wells to ensure that Site contaminants do not exceed EPA's cleanup levels and State and Federal drinking water standards. Crane Co. continues to sample key drinking water supply wells, as directed by EPA, and continues to sample groundwater monitor wells quarterly.

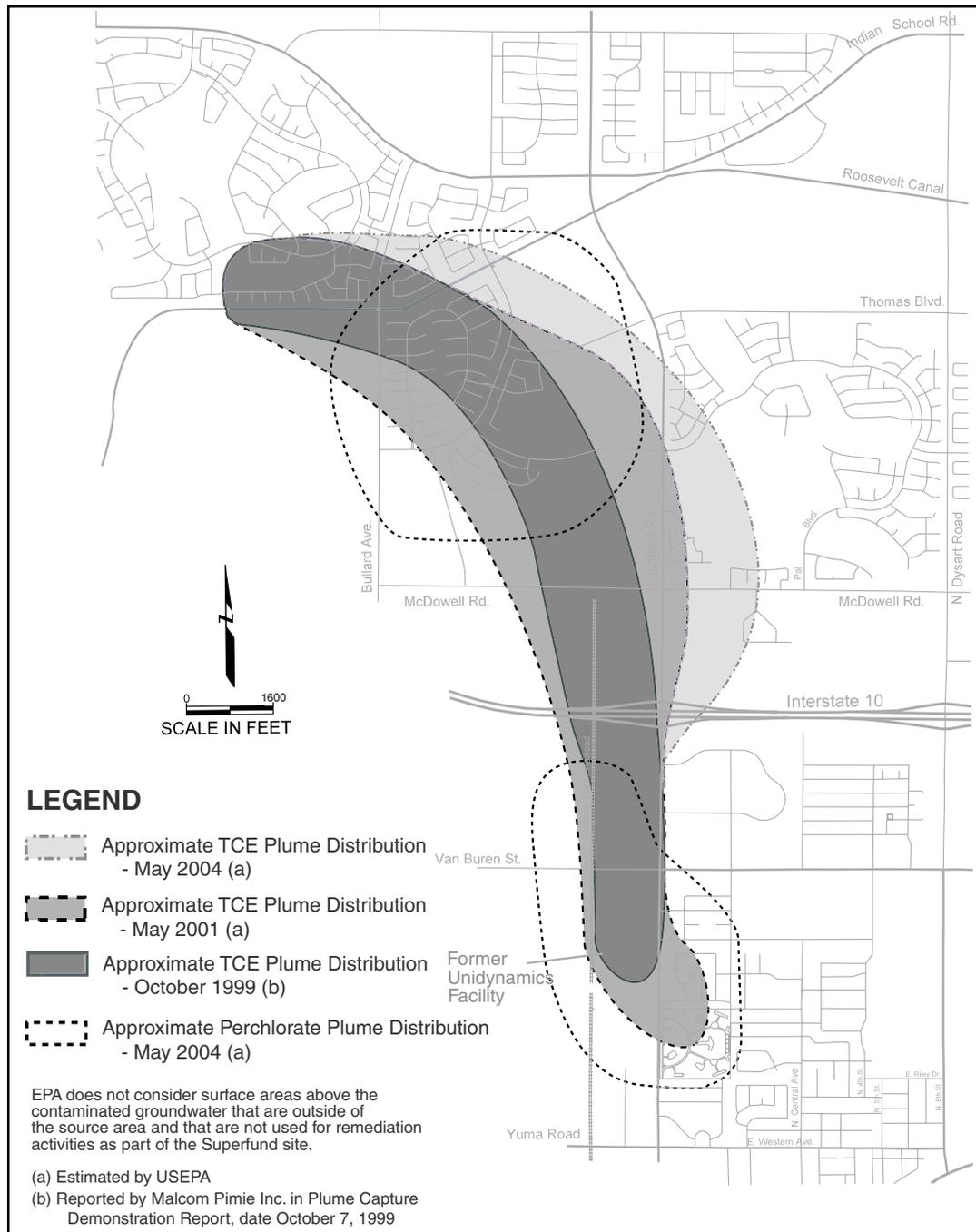


Figure 6. Changes in Shallow Aquifer Plumes over time

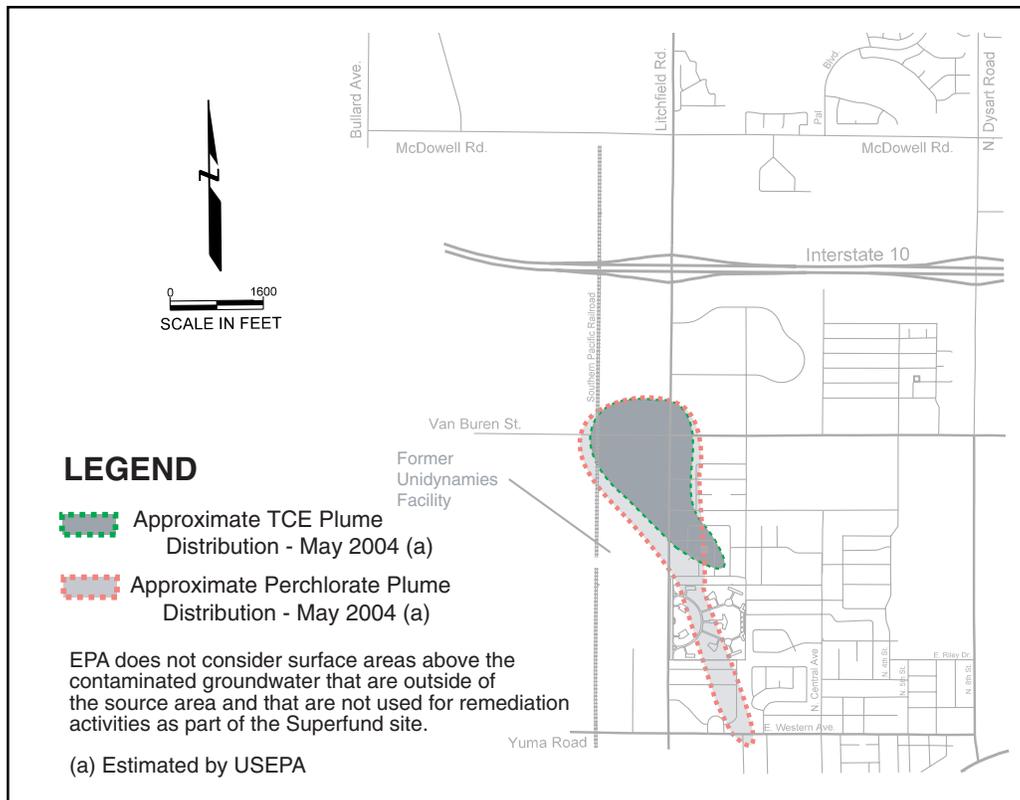


Figure 7. TCE and Perchlorate Plumes in Deep Aquifer

## TECHNICAL ASSISTANCE GRANT PROGRAM

EPA values your input and wants to help you understand the technical information relating to the cleanup of Superfund sites in your community so that you can make informed decisions. Under the Superfund law, EPA may award a Technical Assistance Grant (TAG) of up to \$50,000 per site. TAGs allow communities to hire independent experts to help you understand technical data and become more knowledgeable about the different technologies that are being used at the site. You can obtain more information about the TAG program by calling Viola Cooper, EPA's Community Involvement Coordinator (see contact information on last page).

## COMMUNITY INVOLVEMENT AND OUTREACH

EPA and the Arizona Department of Environmental Quality (ADEQ) will continue to update residents about the PGA North site through fact sheets, public meetings, and regularly scheduled community advisory group (CAG) meetings. Please feel free to call or write EPA or ADEQ using the contact information found on the back of this mailing. Also, if you have an interest in becoming a potential CAG member please contact one of the Agency community involvement contacts. The CAG meetings are open to the public and meet on a quarterly basis to collect information about site cleanup activities and serve as a focal point for the exchange of information among the local community. Meeting agendas and their corresponding minutes may be accessed through ADEQ's web site at: [www.adeq.state.az.us/enviro/sps/reg.html](http://www.adeq.state.az.us/enviro/sps/reg.html).

# SITE PROGRESS AT NORTH AREA OF PHOENIX GOODYEAR AIRPORT SUPERFUND SITE

## FOR MORE INFORMATION

Interested parties can review site information at the information repository located at the Avondale Public Library, 328 West Western Avenue, Avondale, (623) 932-9415, or at the U.S. EPA Records Center, 95 Hawthorne Street, Suite 403S, San Francisco, California 94105, (415) 536-2000. You can also visit EPA's website at <http://www.epa.gov/region09/waste>.

If you would like to be included on the mailing list for the PGA North Superfund Site, you may send your name and address (please indicate PGA North) via e-mail to or send a fax to Viola Cooper at (415) 947-3528. You may also call EPA's toll-free message line, (800) 231-3075 and leave your mailing information.

### U.S. EPA

75 Hawthorne Street, San Francisco, CA 94105

Remedial Project Manager:

**Mary Aycock** (SFD-8-2), 415-972-3289

Community Involvement Coordinator:

**Viola Cooper** (SFD-3), (415) 972-3243 or

Toll Free: (800) 231-3075

### ADEQ

1110 W. Washington Street, Phoenix, AZ 85007

Remedial Project Manager:

**Cathy O'Connell**, (602) 771-4260 or

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Community Involvement Coordinator:

**Monica Mascareno**, (602) 771-4710 or

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