

# Phoenix-Goodyear Airport

## Superfund Site

### Q & A Session

Estrella Mountain Ranch HOA Meeting  
June 6, 2012

## General Information

**Can we obtain copies of presentations and figures?**

A: EPA: EPA will upload all of the presentations and figures to the EPA website listed here: [www.epa.gov/region09/phoenix-goodyearairport](http://www.epa.gov/region09/phoenix-goodyearairport)

Additional Response: EPA's Community Involvement Coordinator, Viola Cooper, will develop a summary of the questions and answers (Q&A) for posting to the above website along with a copy of EPA's presentations for community meetings. Further, EPA will email the link to the website where we post project documents to all who provide an email address during the public meetings held the week ending June 8, 2012.

**Can the names of the people asking questions be identified and documented so they can be contacted in the event that a response has some additional information or clarification that can be provided later?**

A: EPA: Yes. [Note: Names are not provided on this FAQ document to protect the privacy of those individuals asking the questions.]

**Can contaminant contours be shown on all maps?**

A: EPA: This will be evaluated.

Additional Response: EPA can work on developing maps which combine more of the contaminant contours on the same maps. Revised maps were prepared for the PebbleCreek HOA meeting to show the contaminant plumes for Subunit A on a single map and the contaminant plumes for Subunit C on a single map.

**How many Superfund Sites are there in the U.S.? If you Google "Superfund" and "groundwater," you would be amazed at the number of Sites that are just like this Site. It was the era where they just dumped materials.**

A: EPA: There are nearly 1600 Sites across the U.S.

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**How do we get this (3D Animation) for the PGA South Site?**

A: EPA: EPA will discuss this with The Goodyear Tire & Rubber Co (GTRC). In the past, GTRC has prepared several maps that show the progress of the cleanup of the TCE plume. These can be posted on the EPA website along with the copy of tonight's presentation.

## Monitoring Well Information

**How many monitoring wells do you [PGA-South] have?**

A: EPA: Over 100 monitoring wells are associated with the PGA South Site.

**How many extraction wells do you [PGA-South] have?**

A: EPA: Over 17 extraction wells are associated with the PGA South Site.

## Plume Size & Control Information

**Can you show what the PGA South plume looked like 5 years ago and now?**

A: EPA: Yes. The GTRC prepared a figure to show how the plume reduced in size over time—all on the same figure. This figure will be posted on EPA's website:  
[www.epa.gov/region09/phoenix-goodyearairport](http://www.epa.gov/region09/phoenix-goodyearairport).

**Are the injection wells (along Dysart) a line of defense?**

A: Crane: Mostly.

EPA: Also, when the cities increase production, EPA requires that the frequency of groundwater sampling is also increased to bimonthly for the production wells and sentinel wells.

**Are we treating where we have clean sand and gravel? Is the plume shrinking?**

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A: Crane: Originally, the (PGA-North) plume was headed toward the Globe Wells. These wells were shut off so they were no longer pulling the plume toward the northwest. As the area to the east developed, water demand increased in the City of Avondale. Most of the cities' production wells are in the vicinity of the Agua Fria River because water quality there is good. However, as these wells pumped more to meet the increased water demand, the ground water plume was pulled eastward. We now have a network of extraction and injection wells in place to prevent the production wells in this area from being contaminated by the plume.

## Drinking Water Concerns

**When the City of Goodyear has wells in this area, where is the water coming from?**

A: EPA/COG: In the past, contamination did reach some of the COG wells, and these were closed. COG wells which were abandoned include the following: COG-02, COG-04, and COG-10. COG-05 is no longer used by the COG for production; however, it is used for sampling to get data about water levels and contamination in the vicinity of COG-05.

**Can the City of Goodyear ever bring the abandoned City Production Wells back on-line?**

A: COG: No. Once a well is abandoned, there is no opportunity to go back to that well. Monitoring wells give us information regarding the extent of the plume. Injection wells put water under pressure to help keep the plume in place. It would cost the City of Goodyear \$1–2 million to drill a new well. We are trying to prevent any further production wells from being abandoned. One COG well is very close (at risk). The City of Goodyear is very concerned, and we are aggressively pushing those responsible for the cleanup.

**For COG-03, does this water come from the same unit where the contaminant plume is located?**

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A: Crane: Yes, but groundwater flow in Subunit C is away from COG-03. We also have 4-5 sentinel wells in Subunits A and C in the vicinity of COG-03 to evaluate contaminant concentrations before they get to COG-03. They serve as an early warning system.

**It was stated that it was important to note that most of the contamination is in Subunit A, and the drinking water is pulled from Subunit C.**

A: Crane: Paul Jeffers, AMEC E & I, representing Crane Co., compared the three Subunits to a three-layered dessert. Subunit A, the top layer, is high in nitrates and high in total dissolved solids (TDS). Subunit B is a thick layer with clay and silts. Subunit B is not completely impermeable but it retards flow of water and contaminants from Subunit A to Subunit C. Subunit C is the prime drinking water aquifer and is composed of silty sands and clayey sands. Most of the production wells are screened only in the Middle Alluvial Unit below Subunit C. Very few production wells (e.g., COA-18) have a screen which starts in Subunit A.

**If Subunit A and Subunit C get clean, but it takes decades for contamination to get through Subunit B, how do you know if there still isn't contamination in Subunit B waiting to come through?**

A: EPA: The Site will undergo a long term monitoring program.

Crane: Subunit B will retard the flow of contaminants, but some of the contamination will "stick" in Subunit B. Some of this contamination will go back into Subunit A through a method called "back diffusion." There are currently two monitoring wells located in Subunit B (in PGA-North), but more Subunit B wells are planned (at PGA-North).

## Chemicals/Contaminants/Concerns

**The Superfund Site was listed in 1983, yet perchlorate was not tested for until 2003 and treatment was not begun until 2005. Why?**

A: During the initial investigation of the Site, EPA analyzed soil and groundwater for a long list of possible contaminants, including those used at the Site and identified those

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which were found in concentrations above health standards as Contaminants of Concern (COCs).

Additional Response: Since 1998, when laboratory analytical methods were developed which could detect perchlorate at low levels, perchlorate has been investigated in groundwater throughout the country. At PGA-North, after perchlorate was detected in groundwater, EPA developed the Engineering Evaluation and Cost Analysis (EE/CA) report as the first step in a non-time-critical removal action to address perchlorate contamination in extracted groundwater at the Site. Full characterization of perchlorate contamination in the aquifer and selection of an in-situ remedy is being done now as part of the Source-Area Focused Feasibility Study. From 1998 to 2003, Subunit A groundwater extracted for treatment of trichloroethene (TCE) at the Main Treatment System (MTS), still contained perchlorate when it was re-injected back into the Subunit A aquifer because there was no remedy identified for perchlorate at this Site at the time. In 2003, Crane Co. ceased reinjection of the perchlorate-contaminated water and began sending the VOC-treated groundwater to the City of Goodyear Wastewater Treatment Plant (WWTP) for nitrate treatment as part of a 2-year treatability study. In 2005, the WWTP treatability study ended, and a second treatability study using ion exchange for the treatment of perchlorate was added to the MTS. Since April 2005, when the ion exchange system was brought online, the treated groundwater again has been re-injected into the Subunit A aquifer with the TCE concentrations and perchlorate concentrations both meeting the approved discharge limits.

Currently, no national drinking water standard exists for perchlorate, although EPA has adopted a reference dose with a drinking water equivalent of 24.5 micrograms per liter ( $\mu\text{g/L}$ ), and the state has established guidance levels. Arizona has a Health-Based Guidance Level (HBGL) for perchlorate of 14  $\mu\text{g/L}$  published by the Arizona Department of Health Services (ADHS).

#### **What about other chemicals which might be identified in the future?**

A: EPA: Drinking water providers test for an extensive list of chemicals. During the initial investigation stages, soil and groundwater samples are analyzed for an extensive list of chemicals—not just what is thought to be present at the Site. Over time, as the data is evaluated, the list of analytes focuses more and more on what has been detected until a final sampling program is agreed upon by EPA, ADEQ, and Crane Co.

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#### **What is EPA doing to be proactive with respect to identifying other chemicals?**

A: EPA: EPA samples for all types of unknowns when a Site is first being investigated, looking at broad categories of chemicals during the initial phase of cleanup. Particular attention is paid to those chemicals which are known or suspected COCs based on what is known about activities at the Site. The primary COCs for PGA-South are TCE and chromium. The primary COCs for PGA-North are TCE and perchlorate. For both PGA-North and PGA-South, the groundwater samples are analyzed for other volatile organic compounds (VOCs). If new information regarding chemicals used at the Site was uncovered and those chemicals were not already analyzed for in the initial remedial investigation, EPA could order that additional sampling be conducted.

Crane: In the 1980s, 1990s, and again in 2003-2004, the site was sampled for VOCs, semi volatile organic compounds (SVOCs), PCBs, pesticides, radionuclides, and metals. Unknowns may come about at any time. For example, pharmaceuticals in groundwater are just becoming an issue since many of these get flushed into the system but no one was looking for these previously. Pharmaceuticals are not associated with the PGA North Site.

## **TCE Concentrations**

#### **Is the contaminant concentration of TCE in any area indicative of all wells?**

A: EPA: At PGA-North and PGA-South, we have historically seen higher contaminant concentrations in the source areas than we see in wells in other parts of the plumes. For PGA-North, the main drywells area on the former UPI Property was the source area. For PGA-South, the source of the contamination was surface contamination which flowed off the property and down through the soil and in some instances to Subunit C through conduit well action at existing irrigation wells. The chromium sludge drying beds at PGA-South were also sources of contamination. The drying beds area was remediated in 1993, and a confirmation investigation was conducted in 2008 which formally closed the source area.

#### **Are you mostly concerned about contamination in Subunit A and Subunit C?**

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A: Crane: Yes, but the contamination in Subunits A and C is much greater than that in Subunit B.

**Isn't there some threshold of 5 ug/L? When do you take action (for TCE concentrations in COG-03)?**

A: Crane: There is a COG-03 Plan which states that if the TCE concentration in COG-03 hits 3 ug/L, Crane will build an on-site treatment system. If the TCE concentrations reach 5 ug/L, then Crane will operate this on-site treatment system to clean up the TCE contamination.

**When were these thresholds set? By whom?**

A: EPA: EPA sets a maximum contaminant level for each contaminant, which is based on a risk over a 70-year exposure period that would result in a 1 in a million chance of an adverse health effect. EPA recently revised the TCE risk threshold downward. There is a very good chance that the TCE maximum contaminant level (MCL) will also be reduced. This could complicate the remedy.

Additional Response: The Revised Final Wellhead Treatment Plan for COG-03 is dated July 18, 2008. It was prepared after verbal direction by EPA on behalf of the City of Goodyear to fulfill Task 4.0 of the CD Statement of Work to protect drinking water in the event that the water supply at Well COG-03 is adversely affected by TCE contamination from the PGA North Superfund Site.

**Aren't there two types of risks – Cancer and Non-Cancer? Is it non-cancer effects that are driving the TCE risk downward?**

A: EPA: Yes. Risk is evaluated for both cancer and non-cancer endpoints. Both were revised by EPA last fall. EPA did not previously have a non-cancer risk number and now we do. Cancer risk number is lower than that for non-cancer.

**Will you treat to zero ug/L or to less than 5 ug/L?**

A: Crane: The treatment technology (for TCE) treats the current contamination to non-detect levels, which is less than the MCL.

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EPA: Laboratories report the results of environmental sampling to a detection limit which is based on the analytical method being used. Approved laboratories don't report a concentration of "zero ug/L" they report "non-detect" to the detection limit of their method. This reported amount means that the contaminant was not detected above the concentration that the lab is able to detect it.

## Clean-Up

**How long will a Site be monitored after it has been declared clean?**

A: EPA: Monitoring typically starts out as monthly monitoring in the beginning, then it moves to quarterly monitoring, and then annually for a much longer period. Eventually, after a long term monitoring program has been conducted, the monitoring would be stopped if EPA was convinced that all contamination was removed to the level of the cleanup standards.

**Does this never get cleaned up?**

A: EPA: No. There is a defined clean up goal. In the case of PGA, we will not be done until we have reached aquifer restoration. The GTRC just met with EPA a couple weeks ago and stated that they are looking to compress the cleanup schedule for PGA South.

Crane: After the groundwater model is fully up and running, we will be able to predict the cleanup timeframe.

## Costs

**Are we winning the battle from the Project Management perspective? What about the cost and risk level?**

A: COG: Yes. Cost is passed on to the responsible parties (RP). Crane Co. is the RP for PGA-North and in the past, they were sued and taken to court to make this cleanup happen; the last 4 years they have been a much better participant. The GTRC is the RP for PGA-South. They are a good partner and have been remediating for over 20 years.

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**When a production well has to be shut down and a new well drilled in a new area, is this part of the remedy or does the COG pay?**

A: Crane: If a well is contaminated, no money is incurred by the City of Goodyear; Crane would be responsible for a lost well.

EPA: The legal mechanism for detailing how a well would be replaced is found in the Consent Decree (CD) for the Site.