



Indian Bend Wash Superfund Site



U.S. Environmental Protection Agency • Region 9 • San Francisco, CA • April 2013

Upper Aquifer Cleanup Success

EPA Update - April 2013

The U.S. Environmental Protection Agency (EPA) is pleased to announce that groundwater cleanup in the upper aquifer of the Indian Bend Wash (IBW) Superfund Site in Scottsdale and Tempe is nearing completion.

The IBW site was placed on the Superfund list in 1983. From the very beginning, remediation has focused on cleaning up the source areas where releases of organic solvents such as trichloroethene (TCE) and tetrachloroethene (PCE) impacted the underlying groundwater.

South IBW Upper Aquifer Restored

In South IBW (Tempe), groundwater in the upper aquifer has been restored throughout the Site which was comprised of three discontinuous groundwater solvent plumes (Western, Central and Eastern plumes) encompassing approximately three square miles (see figures on next page).

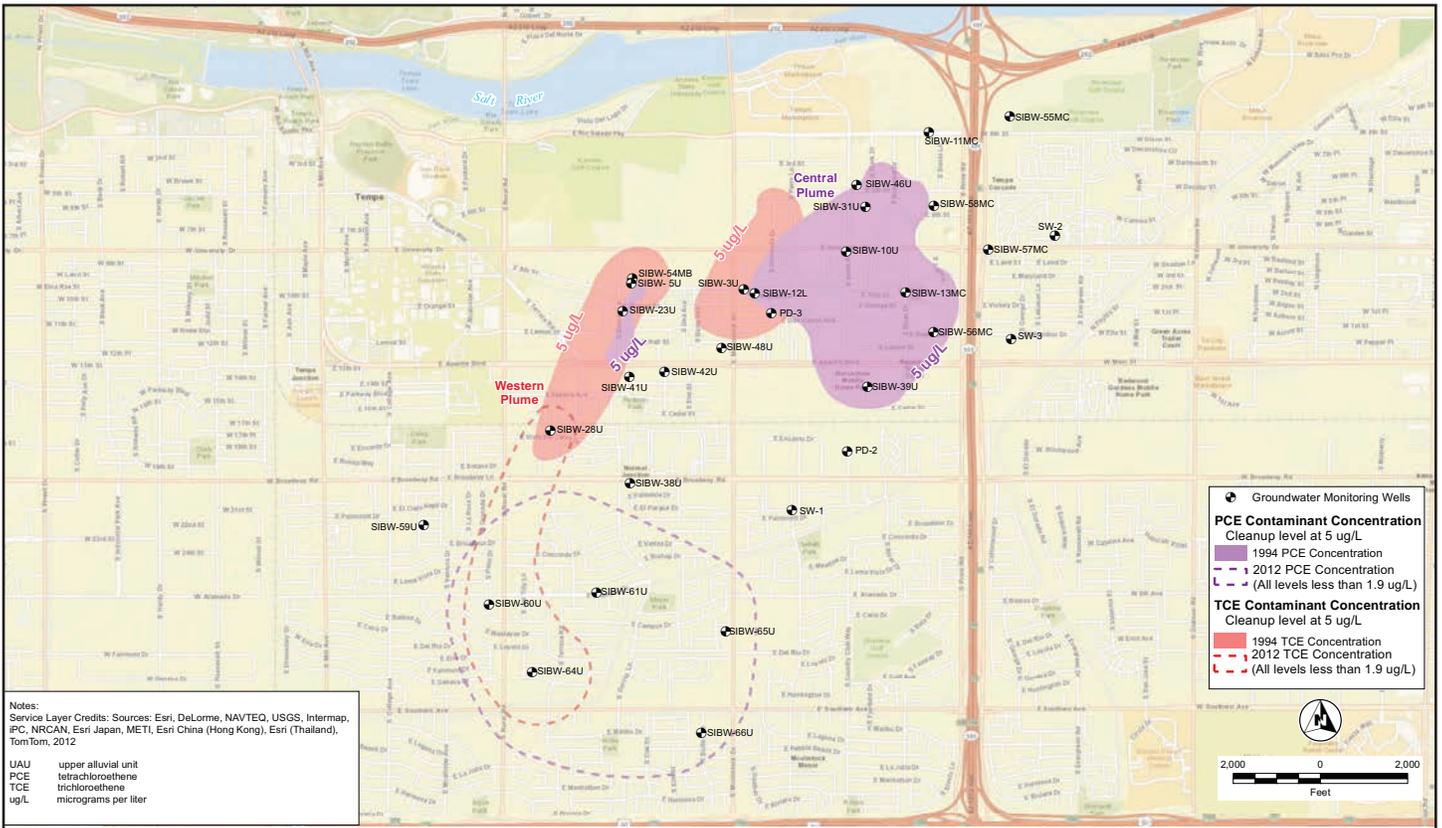
The groundwater in the Western and Central plumes has been restored. In the Eastern plume, only three wells in the middle aquifer need to be cleaned up before groundwater in the SIBW Superfund site is completely restored. These three wells indicate low levels of TCE or PCE ranging from 5.6 parts per billion (ppb) to 8.0 ppb, as compared to the cleanup level of 5.0 ppb.

To expedite cleanup at these three wells, we plan to implement a pilot study by injecting a chemical oxidant into each well to reduce the levels of TCE or PCE to meet the cleanup level. This process is called In-Situ Chemical Oxidation (ISCO). The ISCO pilot study is scheduled to begin this Spring/Summer followed by regular groundwater monitoring to track its effectiveness.

Historically, 82 groundwater monitoring wells were used to monitor the cleanup progress at SIBW. Because the groundwater is mostly restored, we are able to reduce groundwater monitoring to only 18 wells in the vicinity of the Eastern plume where the ISCO pilot study will be conducted. Of the 82 monitoring wells, 34 were formally closed in prior years leaving 48 wells to be formally closed. We plan to close 25 wells this Spring/Summer and the remaining 23 wells this Fall/Winter.

Previous site cleanup actions at three industrial locations were conducted using soil vapor extraction. These treatment systems were decommissioned when each cleanup was completed.

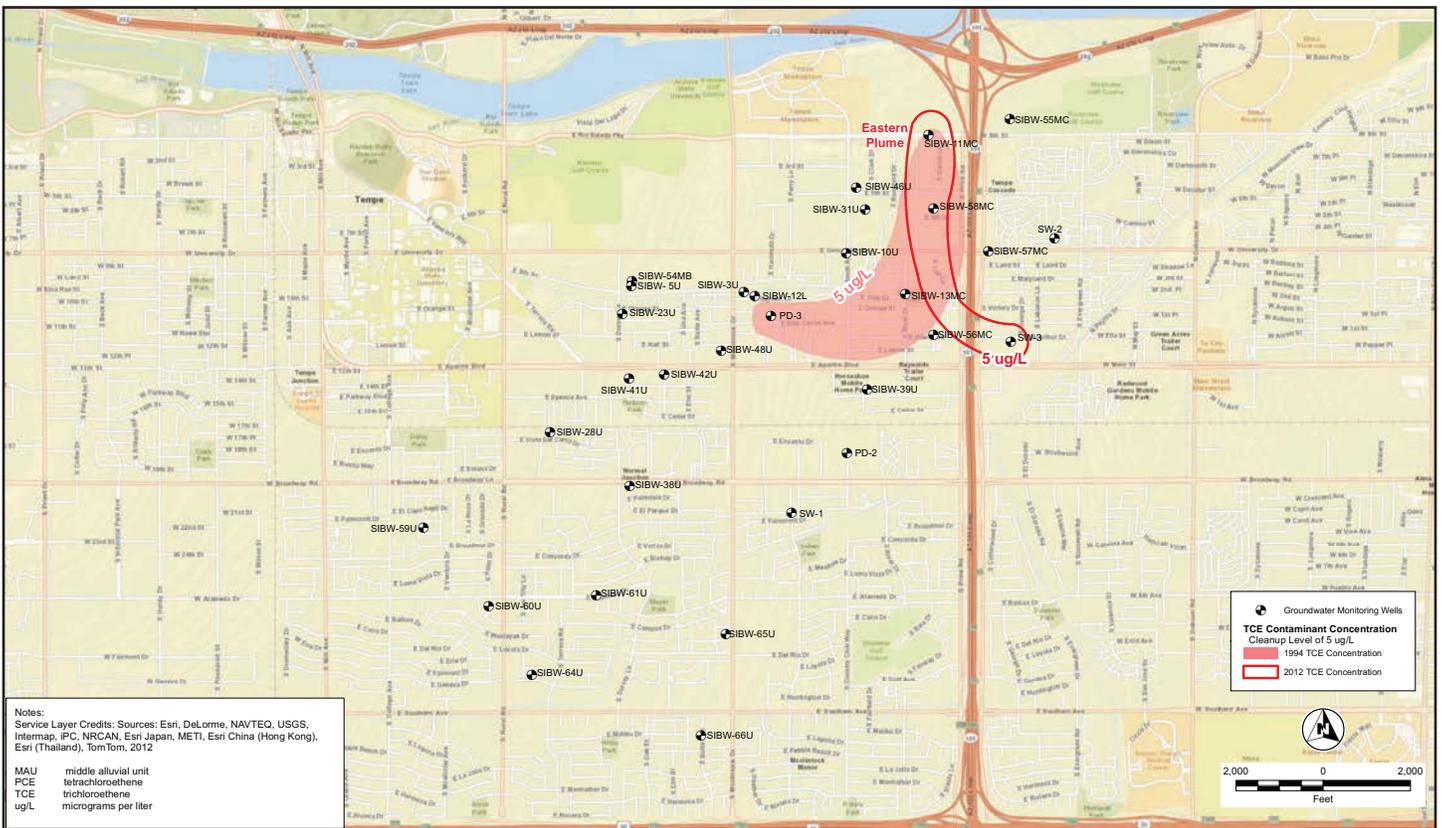
In SIBW, groundwater is used primarily for irrigation purposes and surface water is used primarily for potable supply.



ITSI Gilbane

South Indian Bend Wash Superfund Site, US EPA Region 9
 Tempe, Arizona

FIGURE
 1994 and 2012 Contaminant
 Concentration Plumes in the
 Upper Alluvial Unit



ITSI Gilbane

South Indian Bend Wash Superfund Site, US EPA Region 9
 Tempe, Arizona

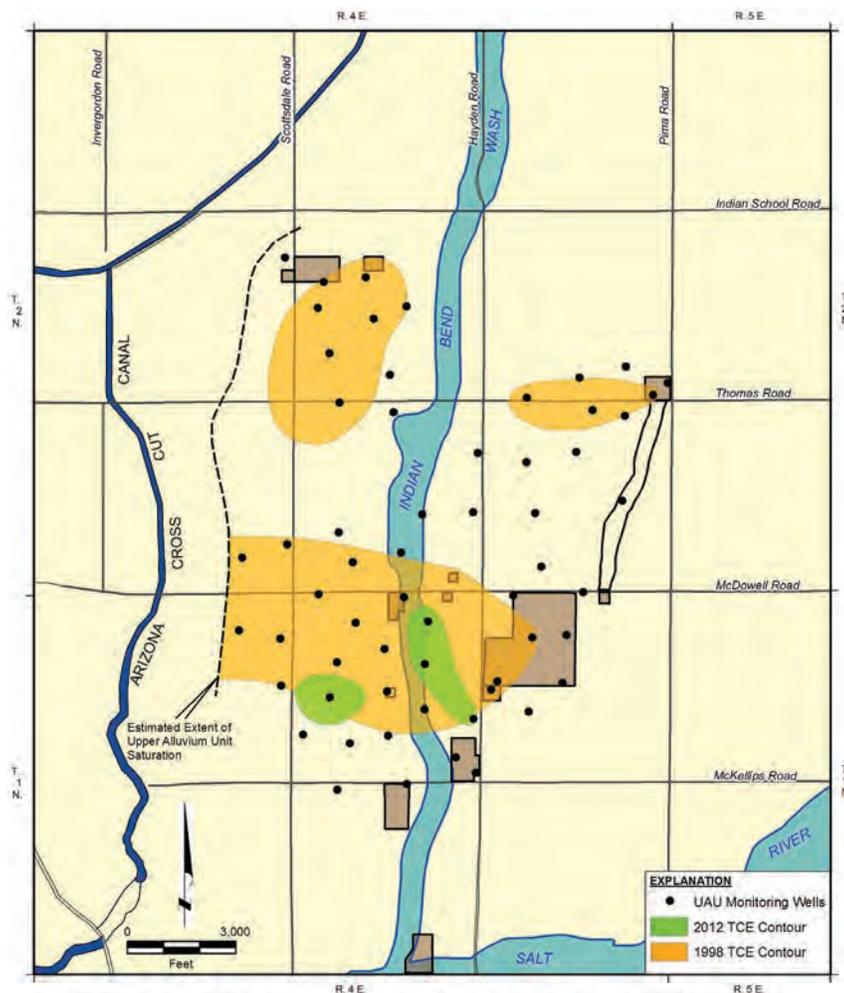
FIGURE
 1994 and 2012 Contaminant
 Concentration Plumes in the
 Middle Alluvial Unit

North IBW Upper Aquifer Mostly Restored

Similarly, groundwater within the upper aquifer is almost completely restored at North IBW in Scottsdale (see figure below). Under EPA and ADEQ oversight, steps taken to clean up soils at four industrial sites where VOC releases occurred has resulted in removal of over 10,000 pounds of TCE and prevented any further impact to the underlying groundwater.

The TCE concentrations have declined to the point where only four of the original 65 upper aquifer groundwater monitoring wells in NIBW indicate low levels of TCE. These levels are at or below 10 ppb, as compared to the cleanup level of 5 ppb.

The upper aquifer plume has decreased in size by 84%, and the total mass of contaminants in the upper aquifer groundwater has decreased by over 97%. Because the upper aquifer is nearing restoration, formal closure of 30 NIBW upper aquifer monitoring wells is planned for this Summer/Fall.



Reduction in Extent of TCE in Upper Alluvial Unit Groundwater Over Time

North Indian Bend Wash Superfund Site

NIBW Treatment Systems

In NIBW, four groundwater treatment plants are currently operating at the site to remove TCE and PCE from the middle and lower aquifers to levels safely below the EPA drinking water standard of 5 parts per billion. In almost all cases, TCE concentrations are cleaned up to non-detect levels in the groundwater. The treated groundwater is then blended into drinking water supply systems, discharged to the Salt River Project canal system, or re-injected back into the aquifer. Treated water from the NIBW remedy serves approximately 82,000 households.

Update on New Remedy for Well PCX-1

In 2012, EPA approved the final design for the long-term remedy for NIBW extraction well PCX-1 using Liquid Phase Granular Activated Carbon (GAC) treatment. Construction of the NIBW GAC Treatment Facility (NGTF) for well PCX-1 began in late 2012 and is ongoing. Well PCX-1 withdraws groundwater from the lower aquifer.

Construction of the NGTF has created approximately 20 full-time positions with Arizona-based companies and is estimated to cost \$4 to \$5 million dollars. Testing of the NGTF is expected to begin this Spring/Summer.

The future pipeline construction project to connect the NGTF to the City of Scottsdale Chaparral Water Treatment Plant is being developed. This work includes pipeline design and routing which is considered a separate construction project.

Summary

Overall, the upper aquifer IBW cleanup in Scottsdale and Tempe has been very successful. The shallow groundwater system throughout the Indian Bend Wash Superfund Site has been largely cleaned up.

United States Environmental Protection Agency, Region 9
75 Hawthorne Street (SFD-6-3)
San Francisco, CA 94105
Attn: Vicki Rosen (IBW 4/13)

FIRST-CLASS MAIL
POSTAGE & FEES
PAID
U.S. EPA
Permit No. G-35

Official Business
Penalty for Private Use, \$300

Address Service Requested



www.epa.gov/region9/indianbendwash
www.epa.gov/region9/northindianbendwash
www.epa.gov/region9/southindianbendwash

EPA Websites

NIBW Scottsdale Civic Center Library 3839 N. Drinkwater Blvd. (480) 312-2320	SIBW Tempe Public Library 3500 Rural Road (480) 350-5511	EPA Superfund Records Center 1110 W Washington Phoenix AZ 85007 (602) 771-4380	EPA Superfund Records Center 95 Hawthorne St., 4 th Fl. San Francisco, CA 94105 (415) 820-4700
---	--	--	---

Please contact any of the EPA or ADEQ staff listed below if you have questions or concerns about the IBW site.

Rachel Loftin EPA Remedial Project Manager (415) 972-3253 loftin.rachel@epa.gov	Vicki Rosen EPA Community Involvement Coordinator (415) 972-3244 rosen.vicki@epa.gov
Travis Barnum ADEQ Project Manager (602) 771-4196 barnum.travis@azdeq.gov	Wendy Flood ADEQ Community Involvement Coordinator (602) 771-4410 flood.wendy@azdeq.gov

Information Repositories

For More Information



Indian Bend Wash
Superfund Site

