San Gabriel Valley Superfund Sites

U.S. Environmental Protection Agency • Region 9 • San Francisco, California • December 2011

Progress Report on San Gabriel Valley Ground Water Cleanup

Ground Water Cleanup Underway

The United States Environmental Protection Agency (EPA) is working with State agencies, local water agencies, and others to address contamination in the San Gabriel Basin in Southern California. This fact sheet is a progress report on efforts to clean up six regions of ground water contamination at four Superfund sites (San Gabriel Valley Areas 1 to 4) in the 170-square mile San Gabriel Valley. These six regions, referred to as **Operable Units**, underlie significant portions of Alhambra, Arcadia, Azusa, Baldwin Park, City of Industry, Irwindale, El Monte, La Puente, Monrovia, Rosemead, Temple City, South El Monte, West Covina, Whittier Narrows, and unincorporated Los Angeles County.

The San Gabriel Basin **aquifer** is a critical source of drinking water for Southern California. The valley's ground water provides approximately 90 percent of the drinking water used by San Gabriel Valley businesses and residents. The cost of cleaning up ground water in the San Gabriel Basin will run into the hundreds of millions of dollars, mostly paid by **Potentially Responsible Parties (PRPs)**, the EPA Superfund Trust Fund and other federal funds, the State of California, and local assessment fees. Additional information on the history of the San Gabriel Valley Superfund Sites is available in the June 2006 fact sheet *Update on Groundwater Cleanup in the San Gabriel Valley* available at: http://www.epa.gov/region9/SanGabriel.

Since the 2006 fact sheet update, the EPA has made significant progress on ground water treatment projects in the San Gabriel Basin. The following pages describe recent, ongoing and planned activities at each of the six OUs.

Esta es una hoja informative sobre la limpieza del agua subterranea contaminada en el Valle de San Gabriel. Si usted quiere pedir que la información sea traducida al español, liame al número gratuito que se indica a continuación.

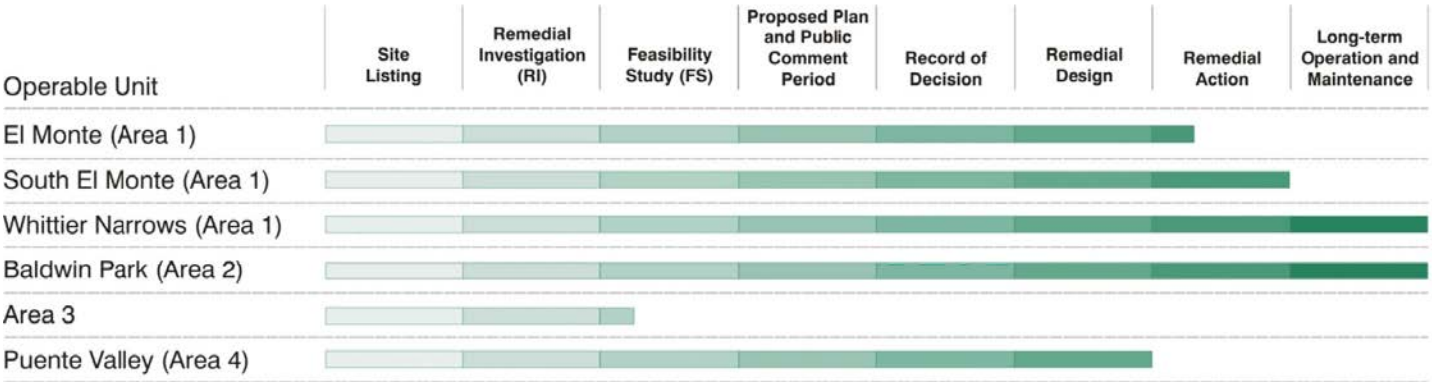
這是有關聖蓋博谷區(San Gabriel Valley)被污染地下水現階段清理情況的說明書。如果您需要繁體中文版本，請撥以下免費電話聯絡以獲取相關資料。

Đây là tờ thông tin về việc làm sạch nước ngầm bị ô nhiễm ở thung lũng San Gabriel. Nếu quý vị muốn yêu cầu dịch thông tin sang tiếng Việt, hãy gọi tới số điện thoại miễn phí được nêu dưới đây.

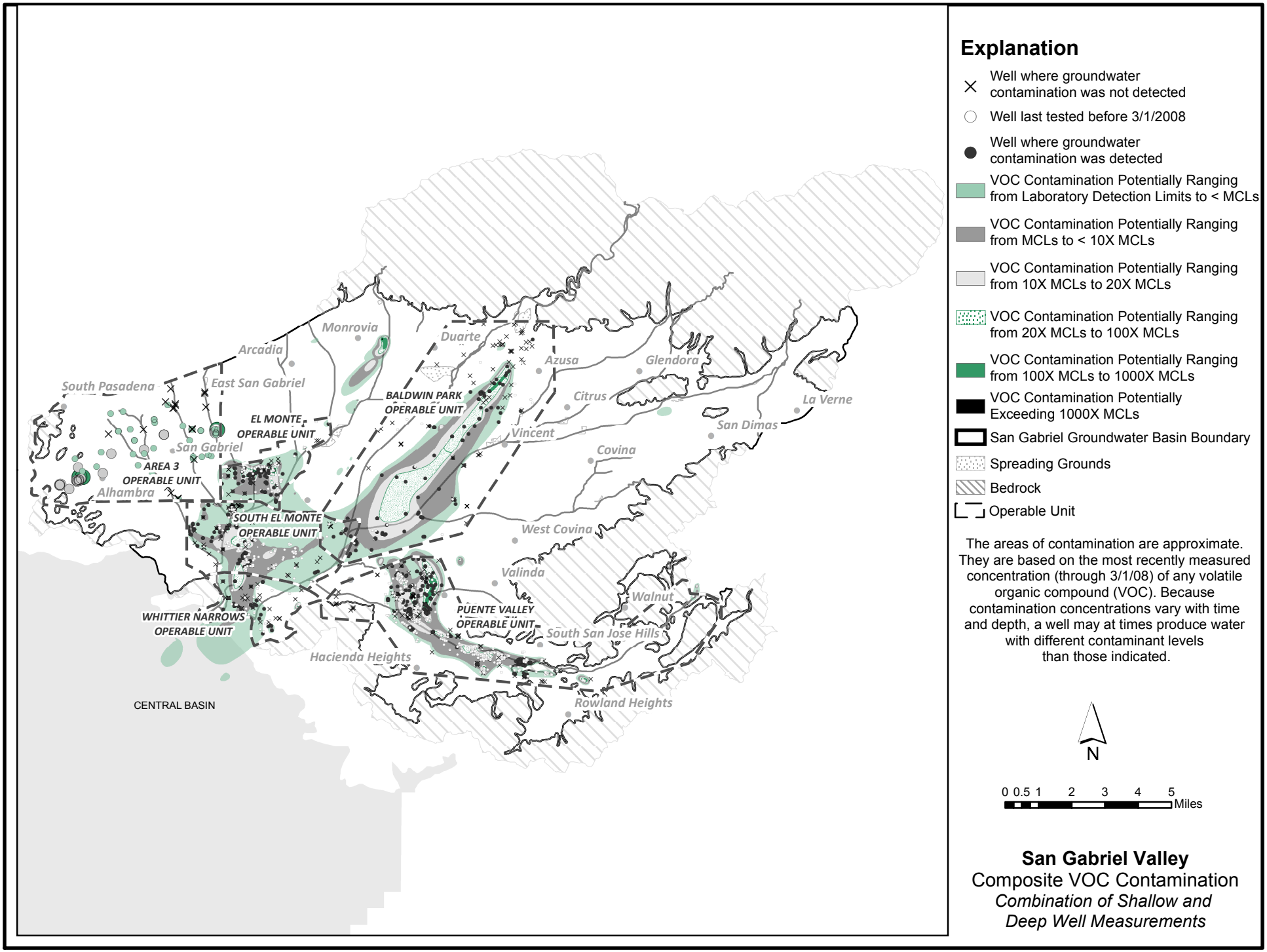
Toll Free Message Line: (800) 231-3075

San Gabriel Valley Superfund Sites Status

Superfund is EPA's program to identify, investigate, and clean up abandoned or uncontrolled hazardous waste sites throughout the nation.



Terms in **bold** are defined in the Glossary on page 6



Explanation

- Well where groundwater contamination was not detected
- Well last tested before 3/1/2008
- Well where groundwater contamination was detected
- VOC Contamination Potentially Ranging from Laboratory Detection Limits to < MCLs
- VOC Contamination Potentially Ranging from MCLs to < 10X MCLs
- VOC Contamination Potentially Ranging from 10X MCLs to 20X MCLs
- VOC Contamination Potentially Ranging from 20X MCLs to 100X MCLs
- VOC Contamination Potentially Ranging from 100X MCLs to 1000X MCLs
- VOC Contamination Potentially Exceeding 1000X MCLs
- San Gabriel Groundwater Basin Boundary
- Spreading Grounds
- Bedrock
- Operable Unit

The areas of contamination are approximate. They are based on the most recently measured concentration (through 3/1/08) of any volatile organic compound (VOC). Because contamination concentrations vary with time and depth, a well may at times produce water with different contaminant levels than those indicated.

N

0 0.5 1 2 3 4 5 Miles

San Gabriel Valley
Composite VOC Contamination
Combination of Shallow and Deep Well Measurements

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El Monte Operable Unit (Area 1)

Where is it?

The El Monte OU is approximately 10 square miles of ground water contamination underlying portions of the cities of El Monte, Rosemead, and Temple City (see map on page 2). The cleanup is divided into the East Side and West Side subprojects. Contamination is in both the **shallow ground water zone** (to about 150 feet **below ground surface** [bgs]) and the **deep ground water zone** (about 150 feet bgs to 400 feet bgs).

What are the contaminants of concern?

The primary contaminants are two chlorinated industrial solvents – tetrachloroethene (PCE) and trichloroethene (TCE). Other less widespread contaminants include 1,4-dioxane, perchlorate, and hexavalent chromium (Cr+6).

What is being done to address the contamination?

EPA will be overseeing construction of 11 **extraction** and **injection** wells, four sections of pipelines, and three ground water treatment plants to supplement eight existing extraction wells and an existing treatment plant. When completed, there will be four cleanup systems to remove and treat contamination from the Eastern Shallow Zone, Southern Deep Zone, Western Shallow Zone, and Northwestern Deep Zone. Treated deep ground water will be used as drinking water and treated shallow ground water will be discharged to surface water or re-injected back into the aquifer.

Who is paying for cleanup?

EPA is overseeing the work of two PRPs that are required to complete the ground water cleanup. The East Side Performing Settling Defendants will complete ground water cleanup of the Eastern Shallow Zone and Southern Deep Zone. The West Side Performing Settling Defendant will complete ground water cleanup of the Western Shallow Zone and the Northwestern Deep Zone. The total project cost is estimated to be $44 million.

What is planned in the near future?

Construction to complete the cleanup systems began in mid-2011 and is ongoing. Operations are expected to start in spring 2012.

South El Monte Operable Unit (Area 1)

Where is it?

The South El Monte OU is approximately 8 square miles of ground water contamination underlying portions of the cities of South El Monte, El Monte, and Rosemead (see map on page 2). Contamination is found in the shallow ground water zone (to about 100 feet bgs) and the **intermediate ground water zone** (from about 100–400 feet bgs).

What are the contaminants of concern?

The primary contaminants in ground water are TCE and PCE, which have both been detected above drinking standards in the shallow and intermediate aquifers. In addition, 1,4-dioxane and low levels of perchlorate have been detected.

What is being done to address the contamination?

Contaminated ground water from the intermediate ground water zone is being extracted and treated to remove **volatile organic compounds (VOCs)** as well as to prevent the contaminated ground water from spreading further. Treatment for perchlorate was required in the past but is currently not necessary. EPA has a Cooperative Agreement with the San Gabriel Water Quality Authority to work with three local water utilities to implement the remedy using eight of their wells. These wells and their treatment systems have the capacity to treat over 14 million gallons per day (mgd), enough water to supply approximately 56,000 homes.

Who is paying for cleanup?

The **remedy** currently is funded by PRPs, EPA and the California Department of Toxic Substances Control (DTSC). The total project cost is estimated to be $75 million, with approximately $38 million spent so far. EPA has negotiated settlements with many PRPs and is currently in negotiations with others.

What is planned in the near future?

EPA is installing new **monitoring wells** to determine if the extraction system is meeting the goals of the Interim **Record of Decision (ROD)**. EPA is also beginning a supplemental **remedial investigation and feasibility study (RI/FS)** for a better understanding of the contamination and to evaluate additional cleanup options. These options will be discussed with the public and formalized in a final ROD.

Whittier Narrows Operable Unit (Area 1)

Where is it?

The Whittier Narrows OU is approximately 4 square miles of ground water contamination in the southernmost part of the San Gabriel Valley, where ground water and surface water flow from the San Gabriel Basin to the Central Basin (see map on page 2). Contamination is in the shallow ground water zone (to about 100 feet bgs) and intermediate ground water zone (from about 100 to >400 feet bgs).

What are the contaminants of concern?

The primary contaminants are TCE and PCE. In addition, low levels of 1,4-dioxane, N-nitrosodimethylamine (NDMA), and perchlorate are present.

What is being done to address the contamination?

EPA completed construction of the Whittier Narrows Ground Water Extraction and Treatment Facility in 2002. From 2002 to 2010, more than 17 billion gallons of water were treated. The facility consists of seven ground water extraction wells, conveyance pipelines, and 20 pairs of **granular activated carbon** (GAC) **filter** vessels to remove VOCs.

EPA has entered into an agreement with the City of Whittier (City) to operate and maintain the treatment facility. The system is designed to pump and treat 16 mgd of contaminated water. In 2005, the City began providing clean treated water from the intermediate zone potable water supply. The treated water from the shallow zone is discharged into Legg Lakes.

Who is paying for cleanup?

EPA and the California DTSC are currently funding the cleanup. The total project cost is estimated to be $46 million. $22 million has been spent to date.

What is planned in the near future?

EPA currently is implementing recommendations for improvements to the interim remedy that were identified by reviews conducted in 2006 and 2008. EPA completed a second **Five-Year Review** of the remedy in September 2011. EPA will transfer the Whittier Narrows OU remedy to the California DTSC in May 2013 to continue operations and maintenance of the remedy.

Baldwin Park Operable Unit (Area 2)

Where is it?

The Baldwin Park OU addresses ground water contamination underlying portions of the cities of Azusa, Irwindale, Baldwin Park, West Covina, La Puente, and City of Industry (see map on page 2). The area of contamination is more than 8 miles long, 1 mile wide, and in places extends to more than 1,000 feet deep.

What are the contaminants of concern?

The primary contaminants are TCE, PCE, carbon tetrachloride, perchlorate, NDMA, 1,2,3-trichloropropane (1,2,3-TCP), and 1,4-dioxane.

What is being done to address the contamination?

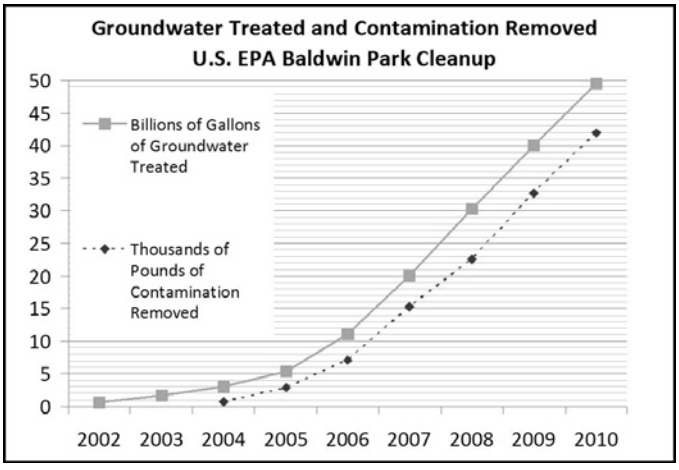
Four large ground water extraction and treatment projects were completed between 2000 and 2006. Each system is owned and operated by a local water supplier, and the projects provide clean treated water to local homes and businesses. Designed as joint cleanup and water supply projects, the systems consist of ground water extraction wells, monitoring wells, pipelines, and multiple water treatment processes for removal of contaminants. The projects have a combined treatment capacity of 37 mgd, capable of supplying water to approximately 150,000 homes. From 2002 to 2010, more than 49 billion gallons of water were treated and 42,000 pounds of contamination removed from the ground water.

Who is paying for cleanup?

PRPs are funding a majority of the work in compliance with a June 2000 **Unilateral Administrative Order** (a document issued by EPA to try to compel potentially responsible parties to investigate or clean up contamination pursuant to the Superfund law). More than $205 million has been spent on the four cleanup projects to date, with this year's and future operation and maintenance costs estimated at $12 million per year. Federal and state grants have contributed more than $38 million to the cleanup. The estimated total project cost is $500 million.

What is planned in the near future?

EPA is overseeing upgrades to some of the water treatment systems, and directing and overseeing a comprehensive performance evaluation program to ensure that the remedy meets EPA's cleanup goals. Performance evaluation reports are published on an annual basis.



Area 3 Operable Unit

Where is it?

The Area 3 investigation area comprises 19 square miles containing regions of ground water contamination in Los Angeles County, California. Cities within Area 3 include Alhambra, Rosemead, San Gabriel, San Marino, South Pasadena, and Temple City (see map on page 2). Ground water contamination is localized and is found in the shallow ground water zone (to about 200 feet bgs) and the intermediate ground water zone (from about 200–400 feet bgs).

What are the contaminants of concern?

TCE and PCE are the most prevalent contaminants in Area 3 ground water, having been detected at relatively higher concentrations than other contaminants tested. In addition, cis-1,2-dichloroethene, 1,2,3-trichloropropane, carbon tetrachloride, perchlorate, and nitrates are present at low concentrations.

What is being done to address the contamination?

EPA conducted a RI to investigate potential sources of contamination and a human health risk assessment to evaluate the potential for harm from possible exposure to contaminants. Completed in 2009, the RI included installation of eight new ground water monitoring wells and testing of more than 70 wells for over 300 contaminants. EPA currently is performing a FS to evaluate cleanup options.

Who is paying for cleanup?

EPA is working with the California Regional Water Quality Control Board, Los Angeles Region; and the California DTSC to identify PRPs. EPA has paid for all ground water investigation activities to date. The FS will include estimated costs for cleanup.

What is planned in the near future?

EPA plans to complete the FS by 2012 and issue a proposed plan that identifies the preferred cleanup option and summarizes all alternatives considered. EPA will hold a public meeting to take comments and hear community concerns on the proposed plan.

Puente Valley Operable Unit (Area 4)

Where is it?

The Puente Valley Operable Unit of the San Gabriel Valley Superfund Site is located in eastern Los Angeles County, California (see map on page 2). The Puente Valley OU is an approximately 23-square mile sub-basin of the Main San Gabriel Basin, located primarily within the City of Industry; in the City of La Puente; and in unincorporated areas of Los Angeles County. Groudwater contamination occurs primarily in the shallow and intermediate groundwater zones of the aquifer, with most of the contaminant mass found in the shallow groundwater zone. VOCs concentrations exceed drinking water standards in both the shallow and intermediate zones.

What are the contaminants of concern?

VOCs are the primary contaminants, with PCE, TCE, 1,1-dichloroethene (1,1-DCE), and 1,4-dioxane comprising the most commonly detected contaminants.

What is being done to address the contamination?

Three ground water extraction and treatment systems are planned as part of the interim remedy to protect the water supply in the “mouth of the valley” portion of the Puente Valley and prevent further contaminant movement. Sixteen extraction wells in the shallow and intermediate ground water zones were installed in 2006 and 2007; additional components were completed in 2009. To address environmental concerns, completion of the systems has been delayed to identify and evaluate additional options for discharge and conservation of treated water.

Who is paying for cleanup?

Over 60 PRPs have contributed to pay for the interim remedy, which will be carried out by two PRP work parties. Carrier Corporation will implement groundwater cleanup actions for the shallow zone north of Puente Creek, while the Northrop Grumman Corporation will implement groundwater cleanup actions for the intermediate zone and the shallow zone south of Puente Creek. The total cost of the interim remedy is estimated to be $80 million, with $20 million spent to date.

What is planned in the near future?

EPA is currently re-evaluating the Remedial Design for the Puente Valley OU to include additional discharge options for treated water. Carrier and Northrop Grumman are required to implement the shallow zone cleanup north of Puente Creek, and the intermediate zone clean up, respectively, under **consent decrees** and will submit revised design documents in 2013. Northrop Grumman will be conducting the shallow zone cleanup south of Puente Creek under a Unilateral Administrative Order issued in 2011 and will also submit design documents in 2013. Upon EPA approval, construction to complete all three cleanup systems is expected to take approximately one year and conclude in the 2014-15 timeframe.

Glossary

Aquifer is an underground geological formation, or group of formations, containing water. Aquifers are sources of ground water for wells and springs.

Below ground surface (bgs) is used to describe the depth to ground water.

Consent decree is a legal document often used for agreements negotiated between EPA and one or more potentially responsible parties, and is subject to approval by a federal court.

Extraction wells are used to pump ground water to the surface for cleanup or water supply purposes.

Five-year reviews provide an opportunity to evaluate the implementation and performance of a cleanup.

Granular Activated Carbon filters are used to purify air, water and waste water.

Ground water is the water found beneath the earth's surface that supplies wells and springs.

Injection wells are used to pump clean treated ground water back into the aquifer.

Long-term Operation and Maintenance is cleanup by remediation system.

Maximum contaminant level (MCL) is a federal or state standard for the maximum permissible level of a contaminant in water delivered to any user of a public drinking water system.

Monitoring wells are ground water wells used to measure water levels and collect samples to evaluate the amounts, types, and distribution of contaminants in a ground water aquifer.

Operable Unit (OU) is a project or project area at an EPA Superfund site.

Potentially Responsible Parties (PRPs) are individuals or companies responsible for conducting or paying for cleanup at a Superfund site pursuant to the Superfund law.

Record of Decision (ROD) is a document issued by EPA to formally adopt a cleanup plan at a Superfund site. Most of the San Gabriel Valley ground water cleanup projects are "interim" remedies, indicating that EPA will formally consider modifying the remedies at a future date.

Remedial Action is implementation of the selected cleanup option or "remedy".

Remedial Design is the development of detailed design for the selected cleanup option.

Remedial Investigation and Feasibility Study (RI/FS) is a process in which information is obtained on the sources, nature, extent, and risks posed by contamination. Cleanup options are identified and evaluated in the FS.

Shallow ground water zone, intermediate ground water zone, and deep ground water zone are terms used to describe the relative depth of water-bearing zones in portions of the San Gabriel Valley aquifer.

Site Listing refers to placement of a Site, or Operating Unit, on the National Priorities List (NPL). Sites on the NPL are eligible for federal funding to implement clean up under Superfund.

Volatile organic compounds (VOCs) include solvents used in dry cleaning, machinery degreasing, and metal plating industries.

What about drinking water?

Ground water underlying the San Gabriel Basin is used for local water supplies. Water suppliers ensure that water delivered to the public meets federal and state drinking water standards. No untreated ground water in the San Gabriel Basin is supplied for drinking water.

Key Contaminants in Ground Water in the San Gabriel Basin

Contaminant	Common Uses / Sources
carbon tetrachloride	Cleaning fluid
1,1-dichloroethene (1,1-DCE)	Adhesives, food packaging, semiconductor manufacture
cis-1,2-dichloroethene	Solvent, component in medicine and perfumes
1,4-dioxane	Stabilizer in solvents
hexavalent chromium (Cr^{+6})	Occurs naturally, used in chrome plating and other industries
nitrate	Component in agricultural fertilizers
N-nitrosodimethylamine (NDMA)	Liquid-fuel rockets, byproduct of wastewater treatment
perchlorate	Solid-fuel rockets, highway flares
perchloroethylene (PCE)	Dry cleaning solution, degreaser
trichloroethylene (TCE)	Industrial solvent, degreaser
1,2,3-trichloropropane (TCP)	Solvent, soil fumigant, sealant

FOR MORE INFORMATION

Contact, Document Repository*, and Website Information

EPA Community Involvement Office

EPA Community Involvement Coordinator
Alejandro Diaz (415) 972-3242
diaz.alejandro@epa.gov

You can also leave a message on EPA's Community Involvement Office line toll-free at (800) 231-3075 and someone will return your call.

EPA Operable Unit Project Managers

EL MONTE (Area 1) Project Manager: Bella Dizon (415) 972-3190 Dizon.bella@epa.gov	BALDWIN PARK (Area 2) Project Manager: Wayne Praskins (415) 972-3181 Praskins.wayne@epa.gov
SOUTH EL MONTE (Area 1) Project Manager: Rachelle Thompson (415) 972-3962 Thompson.rachelle@epa.gov	AREA 3 Project Manager: Lisa Hanusiak (415) 972-3152 Hanusiak.lisa@epa.gov
WHITTIER NARROWS (Area 1) Project Manager: Bella Dizon (415) 972-3190 Dizon.bella@epa.gov	PUENTE VALLEY (Area 4) Project Manager: Raymond Chavira (415) 947-4218 Chavira.raymond@epa.gov

EPA Region 9 Superfund Records Center *

EPA Region 9 Superfund Records Center
95 Hawthorne Street, Room 403 (SFD-7C)
San Francisco, CA 94105
(415) 820-4700

Local Public Library Information Repositories*

Alhambra Public Library 101 South First Street Alhambra, CA 91801 (626) 570-5008	Rosemead Public Library 8800 Valley Boulevard Rosemead, CA 91770-1788 (626) 573-5220	West Covina Public Library 1601 West Covina Parkway West Covina, CA 91790-2786 (626) 962-3541

EPA Websites

Documents and web pages are available in English, and are sometimes translated into other languages.

San Gabriel Valley Superfund Site (All Areas):	http://www.epa.gov/region9/SanGabrielAll
El Monte OU, South El Monte OU, Whittier Narrows OU (Area 1):	http://www.epa.gov/region9/SanGabrielElMonte
Baldwin Park OU (Area 2):	http://www.epa.gov/region9/SanGabrielBaldwinPark
Area 3 OU:	http://www.epa.gov/region9/SanGabrielArea3
Puente Valley OU (Area 4):	http://www.epa.gov/region9/SanGabrielPuenteValley

* Local library information repositories may maintain limited document collections. A comprehensive collection of site documents is maintained at the EPA Region 9 Superfund Records Center.

San Gabriel Valley Superfund Sites:
2011 Progress Report Now Available

Cleanup and investigation of contaminated ground water continues in six regions in the San Gabriel Valley (SGV) under the U.S. Environmental Protection Agency's Superfund Cleanup Program. Ground water in the San Gabriel basin is an important source for local drinking water. Water suppliers make sure water delivered to the public meets drinking water standards.

Whittier Narrows Operable Unit (OU)
Completed second review of the remedy in 2011

El Monte OU
Completing the installation of treatment systems in 2012

South El Monte OU
Installing new monitoring wells to evaluate performance of the cleanup

Baldwin Park OU
Upgrading some of the systems & conducting performance reviews

Area 3 (Western SGV) OU
Evaluation of cleanup alternatives underway as part of a feasibility study

Puente Valley OU
Re-design of treatment systems continues; construction set for 2014-15

Progress Report Also Available Online at EPA's Website:

www.epa.gov/region9/SanGabriel

Scan Quick Response Code to Web Address

SGV Site Mailing List to be reduced in 2012

To receive a paper copy of the progress report by mail in the future, please sign up at EPA's website listed above. Also for more information, please contact Alejandro Díaz, Community Involvement Coordinator, 415-972-3242, *diaz.alejandro@epa.gov*

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