



# **FACT SHEET**

## **ON THE USE OF WATER FROM THE WHITTIER NARROWS WATER TREATMENT FACILITY AS A DRINKING WATER SOURCE**

This Fact Sheet provides information on the City of Whittier's (hereinafter City) operation of the Whittier Narrows Water Treatment Facility (hereinafter Water Treatment Facility) built by the United States Environmental Agency (hereinafter USEPA) and use of the water treated at the Water Treatment Facility as a drinking water source for distribution to the City's customers. This Fact Sheet also provides information on the public comment period and public hearing.

### **BRIEF BACKGROUND**

The City's Public Works Department delivers potable water to approximately 48,000 City residents. Historically, the source of water has consisted of local groundwater pumped from the San Gabriel and Central Groundwater Basins, with most of the water coming from the City's wellfield in the Whittier Narrows area of the San Gabriel Basin.

In the early 1980s, widespread contamination by volatile organic compounds (hereinafter VOCs) associated with past industry practices was discovered in the San Gabriel Basin. This contamination has resulted in several drinking water production wells being contaminated and several water treatment facilities being constructed throughout the San Gabriel Valley to pump and treat contaminated groundwater prior to its use as drinking water. In the late 1990s, groundwater contaminated with VOCs at concentrations below the established Federal and State Maximum Contaminant Levels (hereinafter MCLs) was found to have reached the City's production wells, which adversely impacted the City's ability to produce potable water from its Whittier Narrows wellfield. The City's production wells are located in the known leading edge of the contaminated groundwater plume of the Whittier Narrows Operable Unit (hereinafter WNOU), and as such, the concentration of VOCs detected at the City's production wells are low. The drinking water supplied by the City to its customers continues to meet Federal and State MCLs.

The USEPA built seven extraction wells, as part of the Water Treatment Facility, in almost the same area where the City's production wells are located, in the known leading edge of the contaminated groundwater plume of WNOU. As such, the concentrations of VOCs detected at the USEPA extraction wells are also low. VOCs are the major contaminants of concern in the known plume of the WNOU. Tetrachloroethylene (hereinafter PCE) and trichloroethylene (hereinafter TCE) are the most frequently detected VOCs and have higher concentrations than the other VOCs detected. During a sampling event when the Water Treatment Facility was operating and discharging to waste, the PCE and TCE concentrations detected in the USEPA extraction wells ranged from 11 micrograms per Liter (hereinafter  $\mu\text{g/L}$ ) to 130  $\mu\text{g/L}$  for the PCE, and from 1  $\mu\text{g/L}$  to 18  $\mu\text{g/L}$  for the TCE. The MCL for both of these VOCs is 5  $\mu\text{g/L}$ . One  $\mu\text{g/L}$  is considered to be approximately one small grain of sand in an

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Olympic-size swimming pool.

The Water Treatment Facility removes low concentration VOCs, and thereby protects from further VOC contamination, the drinking water production wells in Whittier Narrows and the Central Basin. The extracted groundwater pumped from the USEPA extraction wells is treated at the Groundwater Treatment Facility to below the MCLs and Action Levels (hereinafter ALs) before distribution to the City's residents.

### **APPLICATION TO AMEND THE CITY'S EXISTING WATER SUPPLY PERMIT**

The City submitted a permit application to the California Department of Public Health, Drinking Water Field Operations Branch, Hollywood District (hereinafter CDPH) to (1) operate the Water Treatment Facility, and (2) receive the treated water that meets all drinking water standards for distribution to the City's customers as potable water. The CDPH amended the City's existing Water Supply Permit to allow the use of the treated water from the Water Treatment Facility as part of the City's drinking water supply. The Department will make a determination on the City's permit application after the public comment period and the public hearing.

To ensure that the treated water from the Water Treatment Facility is safe, wholesome and potable as a drinking water source, the CDPH has implemented stringent permitting requirements on the City's permit application pursuant to CDPH Policy 97-005, including multi-barrier treatment, reliability of the selected treatment technology, full characterization of raw water quality, source water assessment, source water protection, comprehensive and stringent water quality monitoring, evaluation of risks associated with treatment failure, California Environmental Quality Act documents submittal, a public comment period, and a public hearing.

### **DHS' DRAFT PERMIT AMENDMENT PROVISIONS**

The provisions in the CDPH' draft Permit Amendment included the following:

- Water quality criteria that include treatment of the water to non-detectable levels for VOCs, which are very much below the MCLs and ALs.
- Comprehensive and stringent water quality monitoring that includes the following: (a) USEPA extraction wells, (b) upgradient early warning monitoring wells to detect emerging chemicals and trending of chemicals being monitored, (c) GAC tanks, and (d) groundwater treatment plant effluent. The draft Permit Amendment also requires the submittal of all water quality monitoring results collected by the USEPA to monitor the WNOU and other areas upgradient of the USEPA extraction wells.
- Requirements for State-certified operators, which include special trainings and additional certification to operate the Water Treatment Facility.
- Limitations on the operation of the extraction wells and treatment plant; there are conditions requiring shutdown.
- Operation, monitoring, and maintenance of the Water Treatment Facility including the GAC tanks

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and the USEPA extraction wells.

- Requirement for the use of State-certified water testing laboratories.
- Detailed monthly reports on operations and results.
- Inspections (daily), maintenance and alarms.
- Annual review and reporting of the Water Treatment Facility operations, including on detection of emerging and new chemicals and trending of chemicals being monitored.

### **WHITTIER NARROWS WATER TREATMENT FACILITY**

The Water Treatment Facility includes seven extraction wells and a groundwater treatment plant. The groundwater treatment plant has two sections or treatment trains: the potable and the non-potable. The water in the potable water treatment train is completely physically isolated from the non-potable water treatment train. Groundwater treated in the non-potable section is discharged to the local lakes and other surface water bodies in the Whittier Narrows area.

The potable water treatment portion of the Water Treatment Facility consists of three USEPA extraction wells pumping an average total of 6,000 gallons per minute (hereinafter gpm) of groundwater, a groundwater treatment plant, and a conveyance pipeline system.

The Water Treatment Facility will use adsorption by Granular Activated Carbon (hereinafter GAC) treatment technology, which is the Best Available Technology (BAT) for VOCs removal as required in the State of California regulations. The conveyance pipeline system transports the groundwater extracted from the three USEPA wells to the treatment plant and through fourteen pairs of large GAC tanks. These fourteen pairs of GAC tanks are arranged in lead-lag configuration and are solely dedicated to treatment of extracted groundwater for potable use. Each pair of GAC tanks is arranged in two-stage series configuration, which includes a primary GAC tank that has the capability to remove all of the VOCs present in the groundwater and a secondary or “polishing” GAC tank that serves as a redundant treatment unit to provide an extra margin of safety. Sodium hypochlorite is added to the treated water for disinfection purposes prior to pumping of the treated water to the City’s water system. The treated water from the Water Treatment Facility is closely and stringently monitored and tested to ensure that water delivered to the public complies with the Permit Amendment requirements and the drinking water standards.

After the water has gone through the treatment process described above, it is pumped to a 660,000-gallon storage reservoir at the City’s Pumping Plant II, where it blends with any water the City is pumping from its own production wells. From its Pumping Plant II, the water is pumped directly into the City’s storage and distribution system.

The Water Treatment Facility has been constructed and tested and is now operational. The three USEPA wells are located near the southeast intersection of Rosemead Boulevard and Durfee Road in the unincorporated area of the County of Los Angeles. The groundwater treatment plant is also located on Durfee Road in Whittier Narrows. The wells and treatment plant are located on the property owned by the United States Army Corps of Engineers.

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The Water Treatment Facility is providing nearly 100 percent of the water used in the City, reducing dependence on impacted production wells in the City's wellfield. The COPH has required major study and the implementation of a stringent permit process as mentioned above to further ensure that this treated drinking water supply is safe. This study is contained in a Technical Report, which was submitted to COPH as part of the supporting documentation for the City's permit application. The public may view and/or review this Technical Report. This study, along with a comprehensive evaluation of the components of the Water Treatment Facility, the stringent monitoring requirements for all the pre-treated and treated water, the closely supervised operation and maintenance of the Water Treatment Facility, and the stringent requirements for the Department-certified treatment operators will ensure that the Water Treatment Facility provides a source of clean, safe, wholesome, and potable water to the public that meets the requirements of the Permit Amendment and drinking water standards.

A total of seven extraction wells were installed by USEPA. At this time, only three extraction wells are included in the Permit Amendment. The COPH may consider the permitting and use of the other four wells as sources of potable water in a separate Permit Amendment after the City and USEPA's completion of the water quality monitoring for the other four wells, and submittal of such data to the DHS.

### **BRIEF SITE HISTORY OF THE SAN GABRIEL VALLEY SUPERFUND SITE**

The San Gabriel Valley has been the subject of environmental investigations since 1979. Subsequent investigations by USEPA and other agencies and entities revealed the extent of groundwater contamination in the aquifers of the San Gabriel Valley (the San Gabriel Valley groundwater system is known as the San Gabriel Basin). In May 1984, four areas of contamination within the San Gabriel Basin were listed as San Gabriel Valley Areas 1 through 4 on USEPA's National Priorities List of Superfund sites. USEPA subsequently divided the basin into eight project areas or operable units (hereinafter OUs) to facilitate the investigation and cleanup of the groundwater. Six of the OUs are still active.

The groundwater contamination in the San Gabriel Basin results from the historic use and improper handling and disposal of chemical compounds, mainly VOCs such as PCE and TCE. These compounds were used in large quantities at industrial facilities across much of the San Gabriel Valley as early as the 1940s, and by hundreds of businesses in the 1960s, 1970s and 1980s for degreasing, metal cleaning, and other purposes. The chemicals were probably released to the ground by a combination of disposal, improper handling, leaking tanks and pipes, and other means.

In the last several years, contaminated groundwater from upgradient areas has been migrating into the western side of Whittier Narrows causing increases in contaminant concentrations in that area. The groundwater in Whittier Narrows and the Central Basin provides drinking water for millions of local residents and, without contamination containment, significant contamination will move beyond the Whittier Narrows and into the Central Basin. This threat prompted USEPA to initiate additional data collection and evaluate various options, leading to the signing of the cleanup plan titled *Interim Record*

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*of Decision Amendment dated November 1999 for the Whittier Narrows Operable Unit.* This document specified a project to contain the groundwater contamination, that included installation of groundwater extraction wells, pumping and treating the groundwater to remove contamination, and monitoring the contamination.

## **PUBLIC COMMENT PERIOD AND PUBLIC HEARING**

The public comment period for the City's permit application proposal was held on **July 21, 2002**. All comments were submitted in writing to the address below or faxed to **CDPH Fax No. (213) 580-5711** by **Monday, August 25, 2003 by 5:00 p.m.**

**Joseph E. Crisologo, P.E., R.E.A., District Engineer, or  
Ric M. Roda, P.E., Project Engineer  
Hollywood District  
Drinking Water Field Operations Branch  
State of California Department of Health Services  
1449 W. Temple Street, Room 202  
Los Angeles, CA 90026**

A public hearing was held to discuss the City's Permit Amendment proposal at the schedule and place below. The public hearing provided the public the opportunity to present testimony and discuss the City's proposal.

**Date: Thursday, August 21, 2003  
Time: 6:30 p.m. – 8:30 p.m.  
Location: Whittier City Council Chambers  
13230 Penn Street  
Whittier, CA 90602**

For individuals with disabilities, COPH provided assistive services such as sign-language interpretation, real-time captioning, notetakers, reading or writing assistance, training/meeting materials in Braille, large print, audiocassette, or computer disk. To obtain these services or copies in one of these alternate formats, please contact within ten (10) working days prior to the public hearing:

**Ms. Judy Castelan  
California Department of Health Services  
Division of Drinking Water and Environmental Management  
601 No. 7<sup>th</sup> Street, MS 216  
Sacramento, CA 95814  
Phone No. – (916) 322-2308; (866) 600-7165 (TTY)**

Copies of all reports regarding this project may be viewed at the Whittier Central Library at 7344 Washington Avenue, Whittier, and at the City of Whittier Public Works Department located at 13230 Penn Street, Whittier (telephone no. (562) 464-3510). The proposed permit provisions are posted on

