

California Regional Water Quality Control Board  
Santa Ana Region

September 26, 2001

ITEM: 18

SUBJECT: Update on Status of Concerto Well Investigation, Anaheim / Yorba Linda

DISCUSSION:

The Southern California Water Company (Water Company) owns and operates Concerto Wells No. 1 and 2 and the Ballad well. These wells are located in a residential neighborhood just north of Orangethorpe Avenue and east of Imperial Highway in easternmost Anaheim and are used as domestic supply wells. Concerto #2 serves approximately 6000 customers in the Yorba Linda area and the other two wells are currently inactive. Concerto #2 is considered a sole source domestic supply well as there are currently no other sources of water supply for these customers. However, a potential emergency tie-in is available, although at a much higher cost.

These wells are monitored on a regular basis for a wide array of potential pollutants. Since 1997, these wells have had detectable levels of methyl tertiary butyl ether (MtBE), a fuel additive. The MtBE levels in Concerto #2 have fluctuated between 2 and 4 parts per billion between 1997 and 2000. The secondary maximum contaminant level (MCL) for MtBE is 5 ppb. (A secondary MCL is a drinking water standard that is not based on adverse health effects. The secondary MCL for MtBE is based on the taste and odor problems it creates.) In June of 1999, Concerto #2 was modified by the lowering of the pump in the well casing from approximately 180 feet below ground surface (bgs) to approximately 400 feet bgs. Since that modification, the MtBE concentrations in this well have been stable at or below approximately 1.5 ppb during numerous sampling events. The two inactive wells (Concerto #1 and Ballad) are screened across a relatively shallow interval and have recorded MtBE concentrations ranging from 15 to 50 ppb.

Currently, the source of the MtBE is unknown. There are three gasoline service stations situated upgradient of the Concerto well field. These three stations are located between 2500 and 3000 feet from Concerto #2. A map showing the locations of the wells and the stations is included as Attachment A. Additionally, there are other non-retail underground storage tanks (USTs) in the local area.

A Texaco station is located at 5650 La Palma Avenue, at the southwestern corner of La Palma and Imperial Highway. A release at this site was identified in mid-1989. Groundwater sampling beneath and downgradient of this active gas station has detected low levels of MtBE. Texaco is also investigating the area between their site and the Concerto #2 well.

An ARCO station, #3086, is located at 5700 La Palma, at the southeastern corner of La Palma Avenue and Imperial Highway. A release at this site was identified in mid-1992. Presently, this active gas station site is detecting only trace levels amounts of contaminants in the groundwater beneath the site. ARCO is working with Texaco to investigate the area between their sites and Concerto #2.

The third gas station is a presently inactive Tosco station, #5372, which formerly operated as a Unocal station, and is located at 18951 Esperanza in Yorba Linda. This station is located to the east of the affected well along Orangethorpe Avenue. A release at this site was identified in mid-1998. While the investigation of this site has detected relatively high MtBE concentrations, the mapping of the plume suggests a rapid decline in concentrations with increasing distances from the station. The plume of affected groundwater at this site has been mapped to extend to the south beyond the railroad tracks.

Several other sites in the area that had USTs were required to install a single shallow-depth monitoring well in order to determine if any groundwater impacts had occurred at those sites. This investigative effort did not result in any additional findings of contamination.

Regional Board staff is coordinating an effort to identify the source(s) of contaminants at the Concerto wellfield and to remediate the problem. On August 24, 2000, a meeting was held between the representatives of the three oil companies, Regional Board staff, Orange County Water District, Orange County Health Care Agency, and Southern Calif. Water Company. At this meeting, the three oil companies (ARCO, Equiva [Shell/Texaco] and Tosco) agreed to pursue a hydrogeologic investigation of the aquifer from their sites toward the affected wells, and beyond as necessary, to identify the source and to define the plumes from each of their sites. Each of the oil companies has an environmental consultant assigned to map their individual plumes as well as contracting with another firm to head up the larger area-wide study. The environmental consultant acting on behalf of the three oil companies, Geosyntec, Inc., has collected available aquifer and hydrologic data for the area, created a model using these data and has simulated groundwater flow in the area. Other Geosyntec activities include the installation of a number of multiple sampling port wells in the area around the affected wells to determine the groundwater strata affected by the contamination. These monitoring wells are of an innovative design and each well would generate up to seven sampling points in the saturated zone.

Currently, a major field effort to install up to eighteen of these multi-port wells in two linear arrays (transects) is underway. These transects consist of wells which are approximately 200 feet apart and are located to generate a cross-section of the plume. These data will be incorporated into the groundwater flow model to refine the model and to determine the contaminated strata and the concentrations of contaminants in this stratum. Further actions will be based on the extent of the plume and the plume's concentrations.

Staff will provide the Board future updates on the findings of the field investigations and on the status of other work to address this MtBE problem.