NPL Site Narrative for State Road 114 Ground Water Plume

STATE ROAD 114 GROUND WATER PLUME
Levelland, Texas

Conditions at Proposal (July 1999): The State Road 114 Ground Water Plume site consists of the contaminated ground water plume in the aquifer underlying the western boundary of the City of Levelland, Hockley County, Texas, approximately 31 miles due west of Lubbock. The ground water is primarily contaminated with 1,2-dichloroethane (1,2-DCA) and vanadium. Impacts from 1,2-DCA, vanadium, and/or metals contamination have been identified in 28 ground water supply wells, and a number of the City of Levelland's public water supply wells are in the immediate migration path of the ground water plume.

Contamination by 1,2-DCA was first detected by the Texas Department of Health in June 1990 in a sample collected from the Farmers Co-op Elevator Association well. Contamination by 1,2-DCA was again detected in this well the following year. Subsequent investigations by the Texas Natural Resources Conservation Commission (TNRCC) and EPA from 1995 through 1998 identified impacts from 1,2-DCA, vanadium, and/or metals contamination in 28 ground water wells in the area, including: 19 residential wells, five business wells, three City of Levelland public water supply wells, and one irrigation well. During these investigations, efforts were made to locate the source of the ground water contamination. Despite these efforts, however, no conclusive evidence was identified confirming one or more contaminant sources.

In the absence of a specific source of contamination, the State Road 114 Ground Water Plume site has been identified as a plume of contaminated ground water in the Ogallala Aquifer where 28 wells have significant levels of contamination. The plume extends from west to east (in the direction of ground water flow) along West State Highway 114 for approximately 1 and 1/2 miles from the former Motor Fuels Corporation (MFC) property to the City of Levelland municipal park. The ground water plume is approximately a mile wide, bounded roughly by Ellis Road to the north and Houston Avenue to the south. Analyses of samples collected during site investigations to date indicate 1,2-DCA concentrations as high as 182 micrograms per liter (µg/l) and vanadium concentrations as high as 490 µg/l. EPA has established a maximum contaminant level (MCL) for 1,2-DCA in drinking water of 5 µg/l. No MCL currently exists for vanadium; however, the Superfund Removal Action Level for vanadium is 250 µg/l.

The Ogallala Aquifer is the principal source of drinking water for residents in Hockley County. Site investigations conducted by the TNRCC and the EPA to date have identified 15 wells contaminated with 1,2-DCA and vanadium, one well with 1,2-DCA only, and 12 wells with vanadium only. The Texas Department of Health has advised owners of the impacted wells that use of the well water is unsafe. EPA is partnering with the TNRCC to address the hazards posed by the use of this water and has initiated a program to install and maintain ground water filtration systems for these wells. Filtration units have been installed on 14 of the 16 wells contaminated with 1,2-DCA, including the Farmers Co-op Elevator Association well. The remaining two wells are not used for drinking water. Filtration systems have also been installed at three businesses where elevated levels of vanadium or metals contamination have impacted ground water quality.

The City of Levelland draws approximately one-third of its drinking water from the Ogallala Aquifer and obtains the remainder of its water supply from surface water sources. The city operates 17 public water supply wells, all of which are located downgradient and within 4 miles of the center of the ground water plume. The city's ground water wells serve 4,200 people of a total population of 14,000. A public well was closed during the 1960s due to taste and odor problems. Contamination by 1,2-DCA has been detected in this well.

Status (October 1999): EPA is considering various alternatives for the site.

For more information about the hazardous substances identified in this narrative summary, including general information regarding the effects of exposure to these substances on human health, please see the Agency for Toxic Substances and Disease Registry (ATSDR) ToxFAQs. ATSDR ToxFAQs can be found on the Internet at ATSDR - ToxFAQs (http://www.atsdr.cdc.gov/toxfaqs/index.asp) or by telephone at 1-888-42-ATSDR or 1-888-422-8737.