Characterizing Potential Contamination of the Edwards Aquifer from a Superfund Site

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Abstract: The River City Metal Finishing site is a former metal plating shop that operated from 1994 to 2002 in western Bexar County. After several enforcement actions, the Texas Commission on Environmental Quality (TCEQ) in 2013 removed drums and containers of waste from the site, demolished the building and foundations, and disposed of the materials off-site. In 2016, a follow-up site investigation by TCEQ revealed that shallow groundwater at the site was still contaminated with heavy metals. Moreover, cyanide and hexavalent chromium were detected in at least two Edwards Aquifer public supply wells near the site. With TCEQ’s recommendation and letter of support from the State of Texas, the U.S. Environmental Protection Agency (EPA) placed the site on the National Priorities List in May 2016, thus creating the newest superfund site in the San Antonio area.

The Edwards Aquifer Authority (EAA) is responsible for managing and protecting the Edwards Aquifer in the San Antonio region and has a direct interest in understanding the severity and mechanisms associated with potential contamination of the Edwards Aquifer. In this presentation, we will review some details associated with the site geology and geochemistry. We will also explore background information that may be helpful in developing an understanding of the aquifer system in the area and its potential connections to the surface. Finally, we will review data from water quality sampling conducted in 2016 and 2018 and explore the complexities of attempting to determine the extent (or perhaps, the presence) of contamination in the Aquifer.

Bio: Mr. F. Paul Bertetti, P.G., is the Director of Aquifer Science and Research at the Edwards Aquifer Authority (EAA) where he oversees the development and implementation of the EAA’s research program and aquifer science data collection activities. For more than 25 years, Mr. Bertetti has worked as a research scientist investigating a wide range of topics related to the hydraulics and geochemistry of complex aquifer systems such as the Edwards, Carrizo-Wilcox, and Trinity aquifers. He has also conducted numerous field, laboratory, and modeling studies to examine the sorption and ion-exchange behavior of dissolved radionuclides and other constituents related to the disposal of high-level nuclear waste. Mr. Bertetti holds B.S. and M.S. degrees in geology from the University of Texas at San Antonio and is a licensed professional geoscientist in Texas.