

Madison Miller

*Well, Well, Well, What Do We Have Here?*

Mining has occurred at Summitville since the 1700s. Contamination on the site from heavy metals including copper, cadmium, manganese, zinc, lead, nickel, aluminum and iron led to its designation as a Superfund Site in 1994. A Public Health Assessment (1997) reported no public health risks found in wells along the Alamosa River 20 miles below Summitville Mine. Because previous studies found that heavy metal-laden sediments have been deposited throughout the watershed, I wanted to study current well water and river water quality to determine the presence of any elevated heavy metal concentrations 21 years after the initial report. I collected water from 6 household wells and 1 from the Alamosa River and analyzed them for levels of aluminum, arsenic, iron, lead, and zinc. I hypothesized that the deeper a well and the farther it was from the river, the lower the level of heavy metals, as heavy metals would have more opportunity to leach out into the soil. I also hypothesized there would be a correlation between levels of heavy metals in the river and the levels in the wells. My results indicated that only iron levels were exceeding secondary drinking water standards (2 wells that are infrequently used). My hypothesis that deeper wells would be correlated with lower levels of heavy metals held true for iron. No other results showed any strong correlation. Important findings include the need for continued water quality monitoring and the flushing of infrequently used wells to reduce risk of high levels of iron accumulation.