

Technical Memorandum

Rosemont Copper Project

Expected Impact on Railroad Activity from Rosemont Copper Project

Walt Keyes, Road Manager, Coronado National Forest

November 5, 2012

I just ran some numbers based on the Rosemont website's presentation of how much copper is expected to be produced from the mine, in order to arrive at the expected number of fully-loaded rail cars that would be used, daily. I expect copper concentrate will amount to 13 fully-loaded hopper-type rail cars per day. There would be additional shipping for additional mine products; gold, silver, moly..., but that doesn't amount to much weight. So, I overestimated to 15 rail cars per day.

The above is based on Rosemont's website's claim of 243 million pounds of copper produced annually. I multiplied that figure by four to arrive at a likely slight overestimation of copper concentrate weight; concentrate being approximately 25% copper. Then I divided that figure by 365 days per year because the mine will run continuously.

If one presumes that concentrate will load at Port of Tucson and be rail shipped to a port in Mexico (likely) then the rail cars would travel through portions of Tucson and communities south, including Nogales. Most current figures that were easily obtained online show that rail traffic through the Nogales port of entry amounted to 588 trains per year (1.6 trains per day) in 2007 (train makeup/number of cars information not available), whereas traffic on the Union Pacific lines through Tucson was listed as 18,000 to 20,000 trains per year (50-60 trains per day); again, information on train makeup not available.

From extended observations of trains, I assume an average train makeup of approximately 80 cars per train. It would therefore take five day's mine production to make up an average train. That's seven trains per month, or 84 trains per year directly attributable to mine products from Rosemont.

Based on this information, the impact from Rosemont's mine products on rail traffic in the Tucson rail area is essentially imperceptible against the background level of train traffic. The impact from Rosemont's mine products on rail traffic southward through Nogales, etc. would increase train traffic in that not-often used corridor by about 15% based on background train traffic from five years ago.

The figures I just provided are based on my observations, and the information publicly available online. I believe these figures provide a realistic assessment about whether mine products from Rosemont will significantly impact public transportation relative to train traffic and train interactions on the two rail haulage areas (Tucson, Nogales) likely to be impacted.