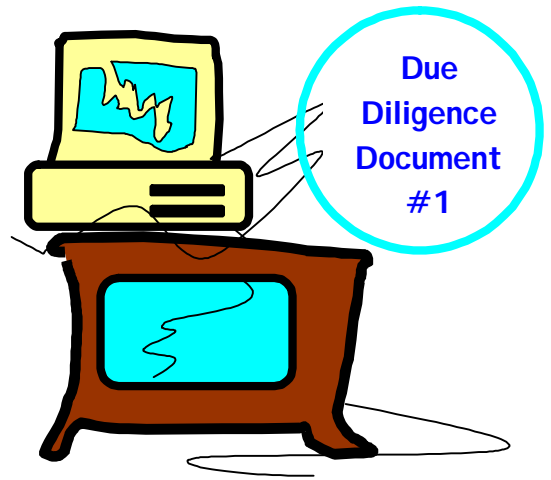


The Recycling Tests

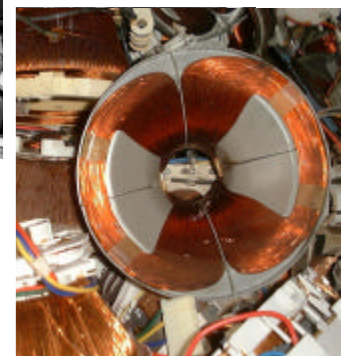


Americans are turning out by the thousands to **recycle** old TVs and computers. Unfortunately, some companies have abused our trust. Computers and televisions turned in for recycling have been tossed onto scrap barges and dumped on foreign shores.

A dud Cathode Ray Tube (CRT), loaded with toxic lead, has no more value in Asia, Africa, Latin America or Eastern Europe than in the USA. But international laws are hard to enforce. There is an **economic incentive** for foreign dumping. "Wholesalers" take legitimate exports (low end Pentiums, copper scrap, working monitors), and leave the bad CRTs as "**Toxics Along for the Ride**" (TAR).

A single copper yoke from the back of a TV can be worth an hour's wages in Asia. Some Foreign Importers accept the whole unit, break off the copper, and throw the leaded glass CRT in the river. Rudimentary, "artisan" gold recyclers soak circuit boards in acid, and pan for gold at the river's edge. Gruesome images at **Basel Action Network's** website have cast a shadow over the recycling industry.

How can a consumer, a business, or a government agency **know what is happening** with the CRTs sent for "recycling"? EPA ID numbers, certifications, recycling awards, trade memberships and press clips can provide a false comfort. Fortunately, there's a **simple mathematical test** to find out if your recycler is really a recycler (OVER).



Left: Woman in Guiyu, China, breaks a copper yoke from a CRT (photo courtesy of Basel Action Network). Top: A CRT glass dump in Guiyu, China (BAN). Right: High grade copper scrap from back of CRTs, in high demand, carry the CRTs as "Toxics long for the Ride"

Test #2 - The PC "Gold Test"

Printed Circuit Boards Destinations:

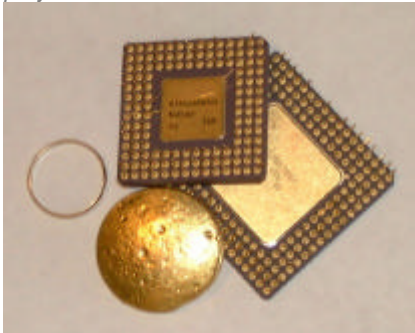
Consumers in the USA consume more petroleum, more water, more electricity, more aluminum, more calories, and more natural resources per capita than their compatriots in developing nations. However, there is an interesting exception. According to the US Geological Survey, **Asians consume more gold** per capita than consumers in the west. Asian gold mines are the biggest, Asian gold markets are the biggest. Because women in many of the most populated countries do not inherit land, gold jewelry is one of the only ways for daughters to inherit wealth.

Consequently, Gold in computer RAM, in CPU chips, in fingers from motherboards, etc. is in high demand in China, India, and Indonesia. And while it isn't a lot of gold per pound of computers, it is actually more than in an average sample of mined ore. But the process for getting gold from chips is one of the most ruthlessly polluting activities. While it is among the most strictly regulated environmental activities in the USA, in China it sometimes involves no more than an open flame and a panful of poisonous acid. Boards are allowed to soak, the poison is poured into the river, and gold is "panned" from the ash and sludge.

Ask your recycle:r "where do the PC boards go?"

The gold from exported circuit board recycling has other unintended effects. The circuit boards make it affordable to dump other electronic scrap as "Toxics Along for the Ride". A sea container costs \$2000 to ship to China... you can't afford to ship it for the cost of dumping garbage. But put 2,000 pounds of computer boards on the container, and voila, the trip is paid for.

Sample of gold recycled by American Retroworks Inc.'s "Good Point Recycling" project



The more circuitry is recycled domestically, the less incentive there is for foreign workers to accept toxic junk.

And unlike repair and reuse, American and European smelters are better and more efficient at recycling. The same regulated processes which keep pollution from escaping also capture more of the gold, silver, palladium, rhodium and other materials.

Please keep recycling your electronics. Recycling diverts rare and heavy metals from the landfill, saves energy, and most importantly, reduces metal mining and resource depletion. Metal mining produces 47% of all toxics released by all US industries, and hard rock mining in Asia is even worse. But if we recycle on the cheap, without due diligence, we may not be recycling at all.

For more "Due Diligence" guidance documents, visit www.retroworks.com

Printed Circuit Board Recycling

How many tons per year of circuit boards does your recycler account for domestically?



Gold in PC chips is several times the concentration of in mined ore. But chemically removing it can be a sickening process (courtesy Basel Action Network ban.org)

