



## Gold Mines

Within the mining industry roughly 90 percent of gold mines around the world employ cyanidation to extract gold from finely ground rock. Cyanidation is a technique in which a sodium cyanide compound is sprayed on crushed low-grade ore where it attaches to minute gold particles to form a water-soluble, gold-cyanide compound from which the gold can then be recovered. This extraction method is very controversial because of the many environmental hazards associated with the highly toxic nature of cyanide and, as a result, most countries have implemented strict regulations for cyanide discharges and plants include a specific cyanide destruction step before releasing waste to a storage facility.

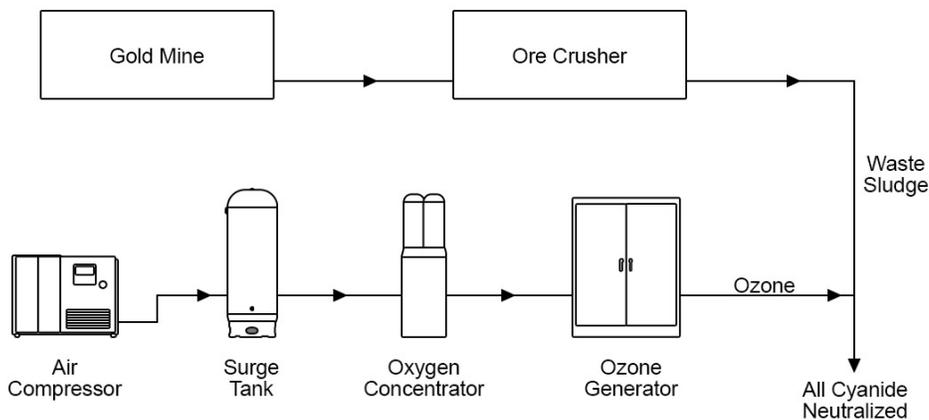
Because water treatment is becoming increasingly important and topical, environmental regulations are becoming stricter and mining companies are being put under more pressure to treat their wastewater. Of the possible solutions for cyanide destruction the use of ozone oxidation has several important advantages over other cyanide destruction solutions. Ozone is a highly reactive molecule that consists of three oxygen atoms, making it one of the most powerful oxidizing agents known. Ozone is extremely effective against all free and complex cyanides and does not form undesirable by-products, such as chlorinated organics or ammonia, as a result of the oxidation process. Ozone is environmentally friendly and its production does not require the purchase, storage or handling of dangerous chemicals. Ozone can be generated on site, by using ozone generators, and does not require high temperatures or pressures in order to be effective. Most importantly - other cyanide destruction processes add something to the system, which can necessitate additional expensive treatment; Ozone does not.

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### OZONE FACT

Using ozone in cyanide destruction could prove to be a viable process route for gold plants wishing to reduce cyanide levels in their tailings.



Typical Ozone Skid

