

Chapter 11 Glossary

Adit—A nearly horizontal passage from the surface in a mine.

Chert—A rock resembling flint and consisting essentially of a large amount of fibrous chalcedony with smaller amounts of cryptocrystalline quartz and amorphous silica.

CIL (or carbon-in-leach)—A method of recovering gold and other precious metals from pregnant cyanide solutions by adsorbing the precious metals onto activated carbon.

Clearing—Removal of vegetation above ground level, but with little or no disturbance to the vegetative mat on the ground surface.

Closed circuit—A loop in the milling process wherein a selected portion of the product of a machine is returned to the head of the machine for finishing to required specification. In a closed circuit, only material meeting specification is allowed to exit the loop. A common example would be a grinding mill in closed circuit with hydrocyclones.

Contact water—Water that comes into contact with areas disturbed during mine development or operation.

Country rock—Rock that is noneconomic, or has no mineral value, that surrounds the ore body (*c.f.* development rock).

Crusher—A machine that reduces (or crushes) material by compression. The machine consists of a movable conical head gyrating within an inverted concave cone. Material is crushed between the movable head and the bowl. The material is fed by gravity through the crusher.

Cyanide (CN)—A chemical compound of carbon (C) and nitrogen (N) used to dissolve gold and other precious metals. Typically, cyanide is delivered dry in the form of sodium cyanide (NaCN) briquettes and is dissolved in water to make a usable solution.

Cyanide process—That part of the milling process in which ore in the form of a slurry is exposed to a weak cyanide solution that dissolves gold and other precious metals.

Detritus—Accumulated material; debris; disintegrated or eroded matter.

Development rock—Rock that is noneconomic, or has no mineral value, that must be removed to allow access to the ore. Development rock can be used as fill in construction of roads, dams, and other mine facilities.

Dore—A metal alloy composed of gold and other precious metals. Typically the final product from a precious metals mine.

Exploration adit—Underground tunnel for access to an ore body.

Feasible—Capable of being carried out in a reasonably technical and economic manner.

Gravity circuit—A circuit with any of several devices that use the differences in specific gravity of materials to separate gold from other material.

Grizzly—Large stationary screen for sorting rock by size.

Laydown area—Uncovered gravel pad for storage of equipment and supplies.

Make-up water—Additional water added in the milling process to make up for water lost through evaporation, export with the tailings, and other means.

Mill—A facility in which ore is treated to recover valuable metals such as gold.

Milling—The process of separating the valuable constituents (gold) from the noneconomic constituents, which after milling are called tailings. Milling typically consists of crushing and grinding to liberate or free the gold, which then is recovered through a leach or gravity circuit.

Mining—The process of removing ore from the ground and transporting it to the mill. At Pogo, mining would include drilling, blasting, loading into trucks, and hauling to a primary crusher.

Mitigation—Avoiding, minimizing, rectifying, or reducing impacts.

Orographic effect— The distribution of precipitation with respect to topography and elevation.

Overburden—Nonmineralized material that overlies the ore body.

Polygon—A closed plane figure bounded by three or more line segments.

Portal—Surface opening of an underground tunnel.

Pulp—A suspension of pulverized or ground ore in water. The ore is kept in suspension by agitation and flow of the water.

Putrescible—Material that will decompose or rot.

Raise—A vertical shaft for venting air, moving ore, or emergency evacuation.

Refinery—That portion of the mill in which gold is purified by being melted with fluxes in a furnace and then poured into dore bars for shipment.

Saturated—The condition in which all openings in a rock or soil are filled with water.

Slurry—Same as "pulp."

Strip (or stripping)—A high-temperature and pressure process in which gold is removed from loaded carbon and placed back into solution.

Tailings—The finely ground material remaining after the gold has been extracted, the cyanide has been detoxified, and the pH has been neutralized.

Thickening—The partial separation of solids from liquid in a slurry by means of settling in a large tank. Typically, flocculants are added as a settling aid. Clarified water overflows from the top of the tank, and the thicker slurry exits from the bottom of the tank.

Toe—The bottom of a fill, such as a road embankment or dam.

Zero discharge—The standard of performance for protecting surface waters that requires containing all process fluids with no discharge outside the process circuit.

