

COMMON MINING TERMS

A

ADIT - A passageway or opening driven horizontally into the side of a hill generally for the purpose of exploring or otherwise opening a mineral deposit. An adit is open to the atmosphere at one end, a tunnel at both ends.

AERIAL TRAMWAY - A system for the transporting of ore or rock in buckets which are suspended from a cable.

ALLOY - A compound of two or more metals, usually produced by fusion.

AMALGAMATION- A process by which gold and silver are extracted from an ore by dissolving them in mercury.

APEX - The top or terminal edge of a vein on the surface or its nearest point to the surface.

ASSAY - To test ores or minerals by chemical or other methods for the purpose of determining the amount of valuable metals contained.

ASSESSMENT WORK - The amount of work specified by law, which must be done each year to retain legal control of mining lands.

AUTOGENOUS GRINDING - The process of grinding in a rotating mill which uses as a grinding medium large pieces or pebbles of the ore being ground, instead of conventional steel balls or rods.

B

BACKSTOPE - The initial lift or slice when commencing to stope or mine from a drift.

BALL MILL - A piece of milling equipment used to grind ore into small particles. It is a cylindrical shaped steel container filled with steel balls into which crushed ore is fed. The ball mill is rotated causing the balls themselves to cascade, which in turn grinds the ore.

BASE METAL - A metal inferior in value to gold and silver, generally applied to the commercial metals such as copper, lead, etc.

BEDROCK - Solid rock forming the earth's crust, frequently covered by overburden or water.

BIT - The cutting end of boring instrument. In rock drilling, it is frequently made with ultra-hard material such as diamonds or tungsten carbide.

BLAST HOLE - A hole drilled for purposes of blasting rather than for exploration or geological information.

BLOCK CAVING - A cheap method of mining in which large blocks of ore are under cut, the ore breaking and caving under its own weight.

BONANZA - Very rich ore, or situation.

BREAST - A working face, usually restricted to a stope.

BULLION - Metal in bars, ingots or other uncoined form.

C

CAGE - The conveyance used to transport men and equipment in a shaft.

CATHODE - A rectangular plate of metal produced by electrolytic refining which is melted into commercial shapes such as ingots.

CHANGE HOUSE - A special building constructed at a mine where the miner changes to his working clothes; also known as a dry house.

CHUTE - An inclined opening, usually constructed of timber and equipped with a gate, through which ore is drawn from a stope into mine cars.

CLAIM - A portion of mining land held under federal or provincial law.

COLLAR - The term applied to the timbering or concrete around the mouth of a shaft; also used to describe the top of a drill hole.

CONCENTRATE - A product containing the valuable metal and from which most of the waste material in the ore has been removed.

CORE - The long cylinder of rock, about one inch or more in diameter, that is recovered by the diamond drill.

CORE BARREL - That part of a string of tools in diamond drilling in which the core specimen collects.

CROSSCUT - A horizontal opening driven across the course of a vein or structure, or in general across the strike of the rock formation; a connection from a shaft to an ore structure.

CRUSHER - A machine for crushing rock, such as a gyratory crusher, jaw crusher, stamp mill, etc.

CYANIDATION - A method of extracting gold or silver by dissolving it in a weak solution of sodium cyanide.

D

DEVELOPMENT - Is the underground work carried out for the purpose of reaching and opening up a mineral deposit. It includes shaft sinking, cross-cutting, drifting and raising.

DE-AREATOR TANK : This tank is used to process ore into gold in hard rock mining.

DIAMOND DRILL - A rotary type of rock drill in which the cutting is done by abrasion rather than percussion. The cutting bit is set with diamonds and is attached to the end of long hollow rods. The drill cuts a core of rock which is recovered in long cylindrical sections, an inch or more in diameter.

DIFFERENTIAL FLOTATION - A milling process using the flotation process, by which concentrates are made of each of the various valuable minerals in an ore.

DILUTION - Waste of low grade rock which is unavoidably removed along with the ore in the mining process.

DIP - The angle at which a vein, structure or rock bed is inclined from the horizontal, measured at right angles to the strike.

DIP NEEDLE - A compass whose needle is mounted so as to swing in a vertical plane, used for determining the magnetic attraction of rocks.

DRAG FOLD - Rock that has been folded or bent back on itself.

DRIFT (DRIVE) - A horizontal passage underground that follow along the length of a vein or rock formation as opposed to a crosscut which crosses the rock formation.

DRIFTER - A rock drill used for boring horizontal holes for blasting.

DRY HOUSE - A building where the miner changes to his working clothes.

DUMP - A pile or heap of rock or ore on the surface.

E

EXPLORATION - The prospecting, diamond drilling and other work involved in searching for ore.

F

FACE - As applied to a drift, crosscut or stope, is the end in which work is progressing.

FILTER PRESS - This is used to filter out impurities out of gold.

FINE GOLD - Almost pure gold. Fineness is the proportion of pure gold or silver in jewellery or bullion expressed in parts per thousand. Thus, 925 fine gold indicates 925 parts out of 1,000, or 92.5%, is pure gold.

FISSURE - An extensive crack, break or fracture in rocks.

FLOAT - Pieces of rock that have been broken off and moved from their original location by natural forces such as frost action or glaciers.

FLOTATION - A milling process by which some mineral particles are induced to become attached to bubbles and float, and others to sink. In this way the valuable minerals are concentrated and separated from the worthless gangue.

FLOWSHEET - The sequence of operations, step by step, by which ore is treated in a milling, concentration, or smelting process.

FOOTWALL - The wall or rock on the underside of a vein or ore structure.

FREE MILLING - Ores of gold or silver from which the precious metals can be recovered by concentrating methods without resort to roasting or chemical treatment.

G

GAMMA - A unit of measurement of magnetic intensity.

GANGUE - The worthless minerals associated with valuable minerals in an ore deposit.

GEIGER COUNTER - An instrument used in the search for radioactive minerals, particularly uranium, as it is capable of detecting (by means of a Geiger Mueller tube) the rays emanating from such minerals. It registers the frequency or intensity of these rays either visually (by dial or flashing light), audibly (by earphones) or both.

GEOLOGY - The science concerned with the study of the rocks which compose the earth.

GRIZZLY - A grating (usually constructed of steel rails) placed over the top of a chute or ore pass for the purpose of stopping the larger pieces of rock or ore.

GROUTING - The process of sealing off a water flow in rocks by forcing thin cement slurry, or other chemicals into the crevices; usually done through a diamond drill hole.

GRUBSTAKE - Finances or supplies of food, etc., furnished a prospector on promise of some share in any discoveries he makes.

GUIDES - The timber along the sides of a shaft for the purpose of steadying, or guiding, the cage or conveyance.

H

HANGING WALL - The wall or rock on the upper or top side of a vein or ore deposit.

HIGHGRADE - Rich ore. Selective mining of the best ore in a deposit.

HIGHGRADED - One who steals rich ore, especially gold, from a mine.

HOIST - The machine used for raising and lowering the cage or other conveyance in a shaft.

HOST ROCK - The rock containing an ore deposit.

HYDRAULIC - This describes a common method of mining in which water under pressure is used to cut away banks of gold-bearing gravels or overburden. Water is brought to the operation from a "head"; the water is then discharged into a pipeline, at the end of which is a nozzle called a "monitor" or a "giant". By using the water provided, the overburden can be cut away to expose the gold-bearing gravels which are then sluiced, using the water provided.

J

JAW CRUSHER - A machine in which the rock is broken by the action of moving steel jaws.

JIG - An apparatus used in milling to concentrate ore on a screen submerged in water, either by a reciprocating motion of the screen or by the pulsation of water through it.

L

LAGGING - Planks or small timbers placed along the roof of a stope or drift to prevent rocks from falling, rather than to support the main weight of the overlying rocks.

LAUNDER - A chute or trough for conveying pulp, water or powdered ore in the milling process.

LODE - A mineral deposit in solid rock.

M

MILL - a) A plant in which ore is treated for the recovery of valuable metals. b) A machine consisting of a revolving drum, for the fine grinding of ores as a preparation for treatment.

MILL HEADS - The average grade of ore fed into a mill.

MILLING ORE - Ore that contains sufficient valuable mineral to be treated by milling process.

MONITOR - An apparatus fitted with a nozzle and used to direct water under high pressure in order to remove overburden or to break down gold-bearing gravels in order to sluice them. Also known as a "giant".

MOTHERLODE - The starting place or origin of a metal. A vein which contains the original metal "in place".

N

NUGGET - A water-worn piece of precious metal, usually implying some size.

O

ORE - A mixture of ore minerals and gangue from which at least one of the metals can be extracted at a profit.

ORE-BEARING - Rock that has some type of ore present in its composition.

P

PAN - To wash gravel or rock that have been ground in a pan to separate gold.

PEBBLE MILL - A grinding mill similar in construction and action as a ball mill, but in which the charge is made up of hard pebbles in place of the more conventional steel balls.

PLACER - An alluvial deposit of sand and gravel containing valuable minerals such as gold.

PLANT - A group of buildings, and especially to their contained equipment , in which a process or function is carried out; on a mine it will include warehouses, hoisting equipment, compressors, repair shops, offices, mill or concentrator.

PORTAL - The surface entrance to a tunnel or adit.

POCKETS - These are cavities in the earth, filled with ore, or a rich deposit of gold.

PROSPECT - A mining property, the value of which has not been proved by exploration.

PULP - A name for gold in the mining process.

PYRITE - A hard, heavy, shiny, yellow mineral, being a sulphide of iron. It is sometimes called "fools gold".

R

RAISE - A vertical or inclined underground working that has been excavated from the bottom upward.

RAKE - The trend of an ore body along the direction of its strike.

REAMING SHELL - A component of a string of rods used in diamond drilling; it is set with diamonds, and placed between the bit and the core barrel to maintain the gauge of the hole.

RECOVERY - The percentage of valuable metal in the ore that is recovered by metallurgical treatment.

ROCKBOLTING - The act of consolidating roof strata by means of anchoring and tensioning steel bolts in holes especially drilled for the purpose.

ROCK BURST - The sudden failure of walls or pillars in a mine caused by the weight of pressure of the surrounding rocks, and accompanied by a violent release of energy.

ROD MILL - A rotating cylindrical mill which employs steel rods as a grinding medium.

S

SAMPLE - A small portion of rock or mineral deposit, usually taken for the purpose of being assayed to determine possible content of valuable elements.

SHAFT - A vertical or inclined excavation for the purpose of opening and servicing a mine. It is usually equipped with a hoist at the top, which lowers and raises a conveyance for handling men and material.

SHAKER SCREEN - This screen filters out impurities in milling of gold.

SKIP - A self-dumping type of bucket used in a shaft for hoisting ore or rock.

SQUARE SET - A set of timbers used for support in underground mining, consisting of cap, girt and post.

STATION - An enlargement of a shaft made of the level horizon used primarily for the storage and handling of equipment.

STOCK PILE - Broken ore accumulated in a heap on the surface, pending treatment or shipment.

STOPE - An excavation in a mine from which ore is being or has been extracted.

SUMP - An excavation underground for the purpose of catching or storing water; the bottom of a shaft is commonly used for this purpose.

T

TAILINGS - Material rejected from a mill after the recoverable valuable minerals have been extracted.

TRAM - To haul cars of ore or waste in a mine.

TROY OUNCES - A type of measurement for gold. A troy is different than an ounce.

TUBE MILL - A piece of milling equipment consisting of a revolving cylinder half filled with steel rods or balls and into which crushed ore is fed for fine grinding; the material to be ground is mixed with water or other solution and comes out as a slurry.

TUNNEL - A horizontal underground passage that is open at both ends; the term is loosely applied in many cases to an adit, which is open at only one end.

V

VEIN - A fissure, fault or crack in a rock filled by minerals that have travelled upwards from some deep source.

W

WEDGE - As used in diamond drilling, refers to the placing of a wedge at some point in the hole for the purpose of deflecting the bit in another direction.

WINZE - A vertical or inclined opening sunk from a point inside a mine. Similar to a shaft, but the latter starts at the surface.