



Glossary of mining terms

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This glossary of mining terms for First Nations collects and defines, in alphabetical order, the technical terms you may encounter in your discussions and projects with mining promoters.

If you come across a term for which you can't find a definition, please contact us at era@iddpnql.ca so we can add it to the next version.



A

Acid mine drainage (AMD) A chemical reaction that can occur in tailings, in which acid is produced by the oxidation of sulphide minerals. If improperly managed, AMD can be disastrous for the surrounding environment.

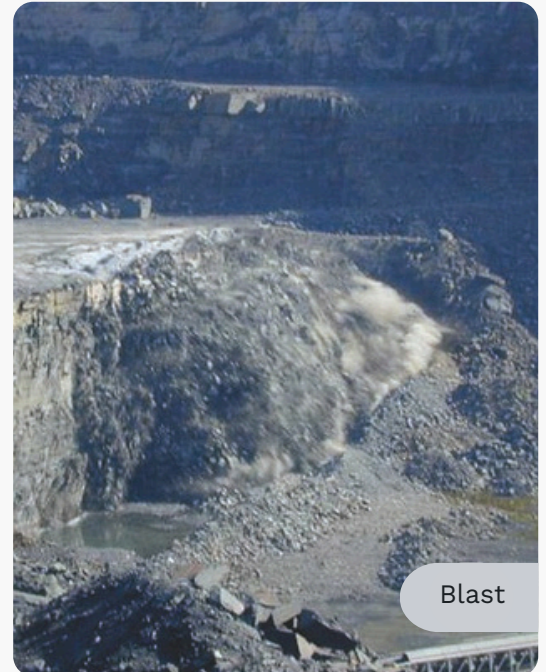
Acid potential (AP) The acid-generating potential of the tailings is used to determine whether the tailings can be used as building material. The higher the AP, the greater the risk of acid mine drainage.

B

Backfill Material used to fill and support underground tunnels or mining pits. Usually composed of non-acid-generating tailings and cement.

Blast The blasting of rock for mining or tunnelling operations.

Bulk sampling A sampling method in which large quantities of rock (several tonnes) are used for ore analysis.



C

Carbon

A naturally occurring, non-metallic chemical element (C) that forms diamond and graphite, among other things.

Casing

Metal pipes placed in the borehole to support the sides of the bore and identify its location.

Chemical element

A constituent of matter composed of a characteristic atom. Chemical elements are classified in the periodic table. The most common are oxygen (O), carbon (C) and hydrogen (H).

Contaminant

An element introduced into the environment that could have a harmful effect on the air, water, soil, or the health of living organisms.



Contaminated neutral drainage (CND) A chemical reaction that can occur in tailings. It produces no acid, but releases concentrations of metals that exceed the contaminant levels permitted under Guideline 019. Usually less harmful than AMD and requires less expensive treatment methods.

Conveyor A machine used to transport ore—usually a conveyor belt.

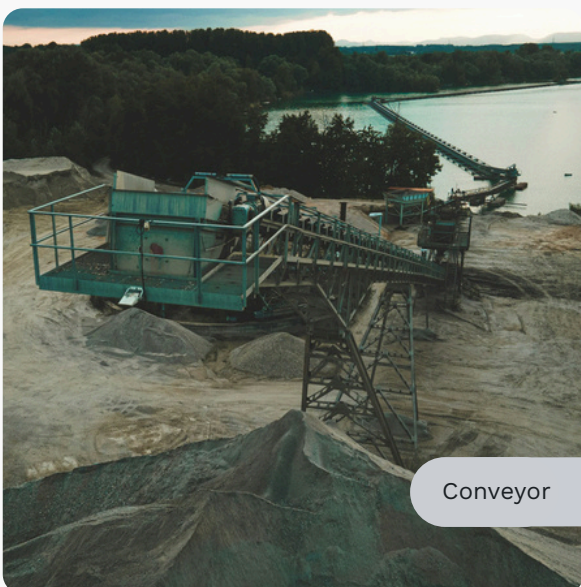
Core shack A building where core samples are stored and analyzed.

Core sample A cylindrical sample of rock taken from the ground by drilling.

Crushing The act of breaking rock into small fragments for ore processing.

Cutoff grade Grade below which ore isn't economically mineable. This grade depends on a number of factors, including ore price and operating costs.

Cyanide A chemical molecule consisting of one carbon atom (C) triple-bonded to one nitrogen atom (N). Used in ore processing to dissolve gold and silver. Cyanide is also a deadly poison to living organisms. It breaks down when exposed to UV rays.





Dumper

D

Deposit

A concentration of ore in a specific area that can be mined profitably.

Directive 019 (or Guideline 019)

A government tool for assessing environmental permit applications. It sets out the requirements that projects must meet in terms of environmental impact, tailings management, noise, and land reclamation.

Disseminated

Deposits consisting of fine grains of minerals dispersed through the rock.

Drilling

A mining operation in which a hole is bored into the rock. This method is usually used to extract a rock sample (core sample) for analysis or to introduce explosives at depth.

Dumper

An ore haulage truck of varying size and loading capacity.

E

Environmental assessment An assessment of the impact a mining project would have on the land and local community

Erosion The wearing away of rocks on the Earth's surface by wind, water, or glacial action.

Exclusive exploration rights (EER) A title that grants the holder the right to access land and explore a specific area for minerals. Mining claims are valid for two years and can be renewed indefinitely if the holder meets the requirements of the Mining Act. The term "claim" is still more common.

Exploratory drilling The drilling of boreholes to seek and locate mineral deposits and to establish geological structure.

F

Feasibility study A study similar to the pre-feasibility study, but with a more detailed financial analysis that shows the mine will be profitable. This study converts resources to reserves. Investors use the study to make the final decision on whether or not to develop the mine.

Final discharge Wastewater that has been used to process ore and is discharged into the environment. Prior to discharge, the wastewater is analyzed to ensure it contains no contaminants in excess of regulatory limits.

Financial guarantees The deposit a company must pay to the government to cover the work outlined in the rehabilitation and restoration plan (RRP).

G

Geochemical (study)	The study of the chemical properties of rocks and minerals. Used to identify mineral showings.
Geology	The science of the Earth, including the composition, structure and origin of its rocks.
Geophysical survey	A survey of the physical properties of the subsurface, including magnetism, density, and electrical conductivity. Helps determine the composition of rocks when they're not visible and provides indications of a potential deposit.
Grade	The amount of a valuable element in the ore. Obtained by dividing the mass of the element by the total mass of the rock containing it. Usually expressed as a percentage, in grams per tonne (g/t), or in parts per million (ppm).
Gravel pit	A pit or quarry from which gravel is extracted.
Gravity separation	A method of separating minerals that utilizes the force of gravity to separate them based on their density.



H

Headframe

A vertical structure used to move miners and ore between underground tunnels and the surface. Usually a metal or concrete tower.

Hectare

A unit of land measure. 1 hectare (ha) = 10,000 m².

Hydrogeology

The branch of geology that studies the behaviour of water in the ground and in rocks and the capture and protection of water.



I

Impact and benefit agreement (IBA) A contract between a promoter and one or more Indigenous communities. It indicates that the communities give their consent or support to a project on their ancestral territory in exchange for socioeconomic benefits and measures to protect the land, the environment and rights.

Impact assessment Analysis of the effects of a mining project on the territory and the population.

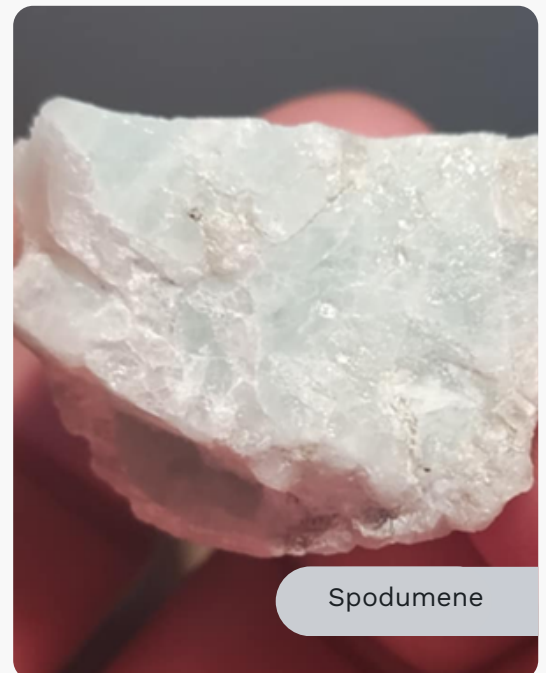
J

Joint venture A partnership or conglomerate formed to share risk or expertise on a specific project.

L

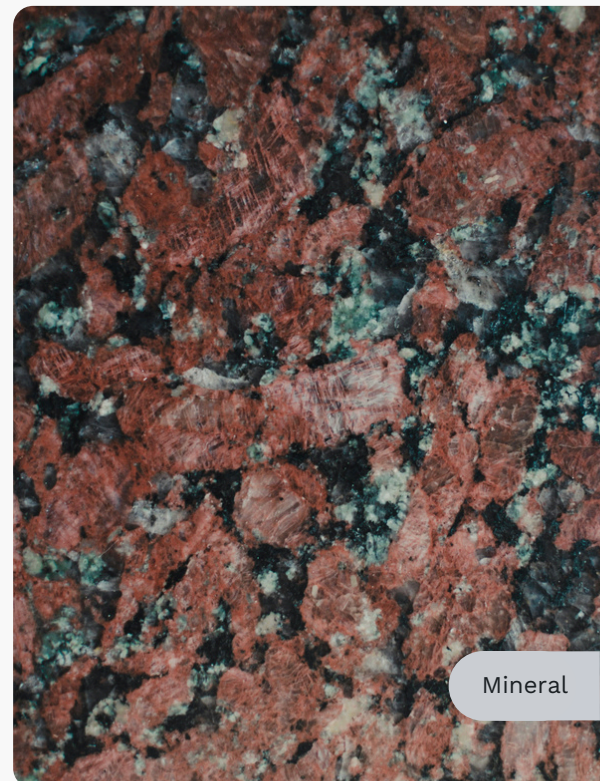
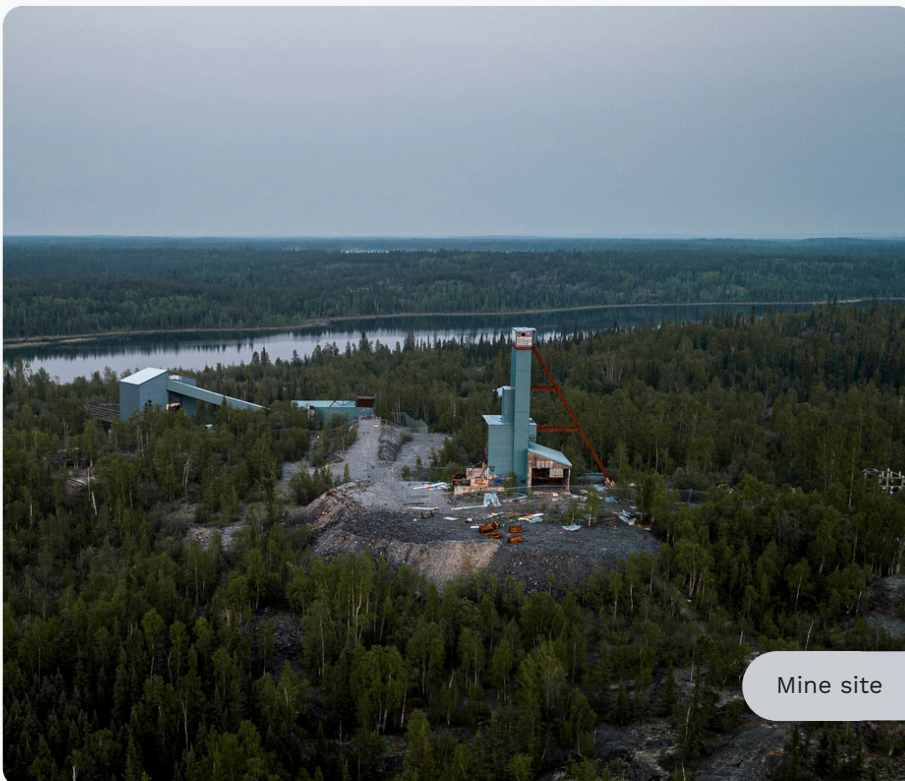
Leaching A processing method in which a solvent is brought into contact with an ore in order to change the target element from a solid to a liquid state. In the case of gold processing, the solvent used is a cyanide solution.

Lithium A light metal and an element of the periodic table (Li). Widely used in battery manufacturing. In Quebec, it's found mainly in spodumene minerals.

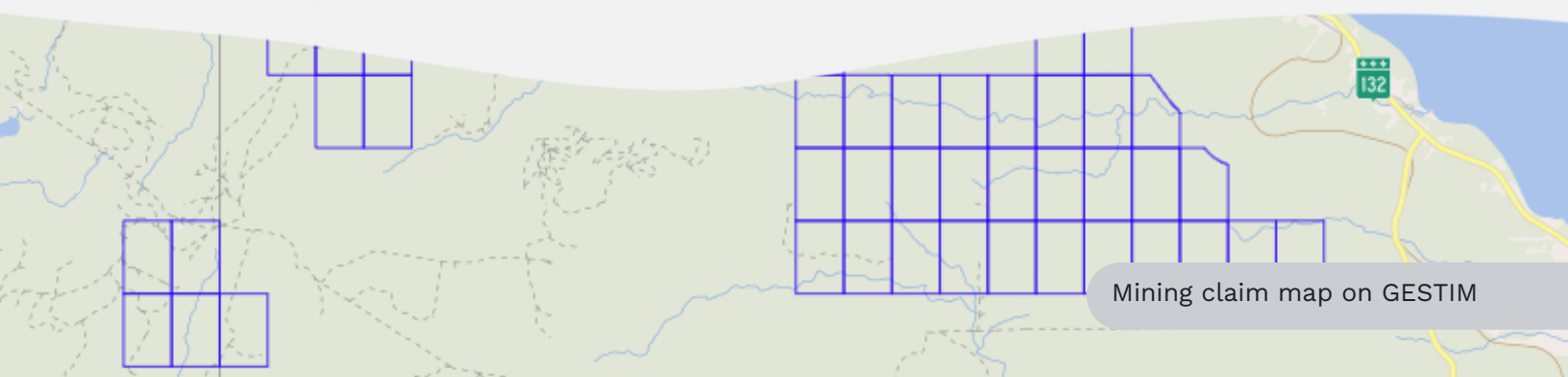


M

Memorandum of understanding (MOU)	A form of agreement between a community and a company in which the parties define the principles of cooperation for mutual benefit.
Metallurgical testwork	Tests to extract target elements (usually metals) using chemical treatments.
Mine site	A site where all the mining infrastructure is located (pit, processing plant, offices, tailings pond, etc.).
Mine water	Water pumped from tunnels or mine pits.
Mineral	A naturally occurring crystalline solid composed of chemical elements from the periodic table. Minerals are the main constituents of igneous rocks.



Mineralogical testwork	Tests to separate the target minerals in ore using physical (mechanical) processes.
Mineral gangue	All rocks or minerals of no particular interest surrounding minerals of interest.
Mining claim	A title that grants the holder the right to access land and explore a specific area for minerals. Mining claims are valid for two years and can be renewed indefinitely if the holder meets the requirements of the Mining Act.
Mining concession	A title that grants the holder the right to extract resources as long as the holder complies with the Mining Act. The government stopped granting these titles in 1966, but there are still some active mining concessions. Mining concessions have been replaced by mining leases.
Mining lease	A title under the Mining Act that grants the holder the right to extract mineral resources from a maximum area of 100 hectares. Mining leases have an initial term of 20 years, with three subsequent 10-year renewals. Thereafter, they're renewed every five years. The promoter must start work within the first four years of the lease.
Mining title	A government licence to explore and mine.
Modifying factors	Considerations used to convert mineral resources to mineral reserves. These include production costs, ore price, current regulations, and environmental requirements (e.g., the higher the metal price, the greater the reserves).



[Open pit](#)

N

National Instrument 43-101

The regulation that sets standards for the scientific and technical information about mining projects that must be included in a technical report.

O

Open pit mining

A method of mining ore by extracting the rock from a pit in the ground.

Option

A purchase agreement between the seller of a property and another party who wishes to explore the property further.

Ore

Rock containing unusually high concentrations of useful minerals or valuable elements that can be extracted at a profit.

Ounce (oz)

A unit of weight used to calculate gold amounts. 1 ounce = 31.10 grams.

Outcrop

Rock that is exposed and can be seen on the surface, not covered by water or vegetation.

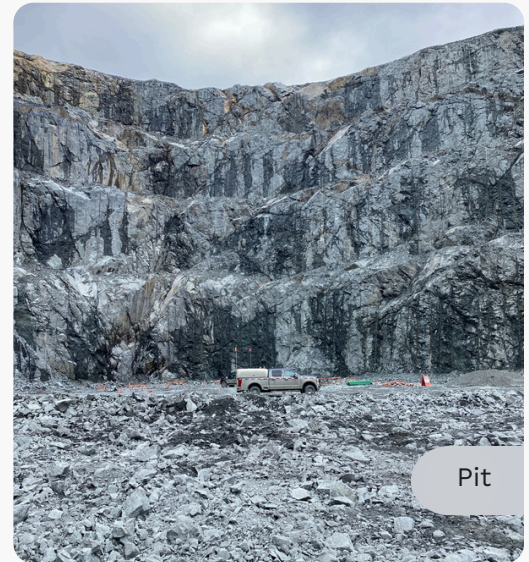
Overburden

Loose material covering bedrock, usually soil and vegetation.

P

Pit A hole dug during open pit mining.

Pre-production The phase at the start of mining when activities are adjusted and optimized to reach 60% production capacity. Commercial operation begins at the end of this phase.

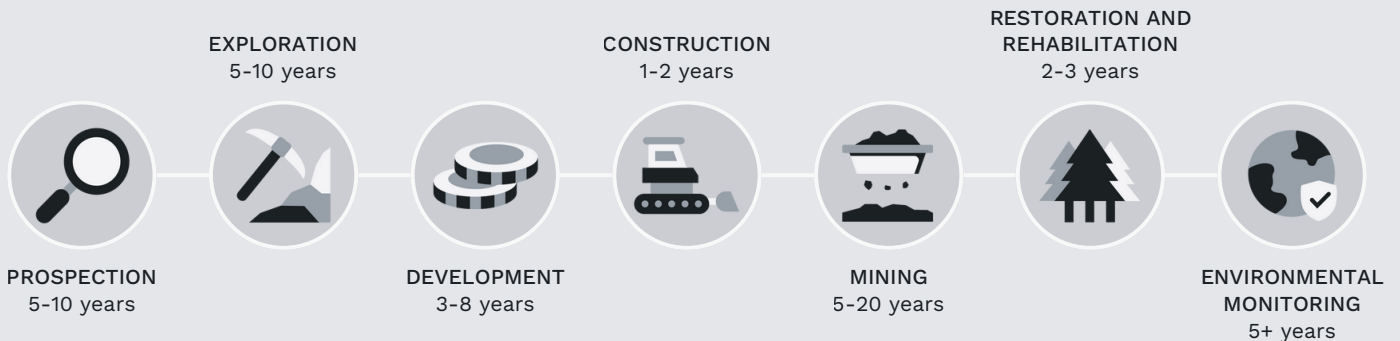


Pre-feasibility study A study designed to determine the technical and economic viability of a mining project. Conducted once the ore processing technique and mining method have been chosen and includes a financial analysis that takes modifying factors into account.

Preliminary economic assessment (PEA) An assessment usually conducted before the pre-feasibility study, at the end of the exploration phase and before the development phase. Used to assess the economic viability of mineral resources. It can be based on measured, indicated and inferred resources.

The life cycle of a mine

See Appendix 1 for more information



Q

Quarry

An open mine site where stone and construction materials are extracted.

R

Rare earths

A group of chemical elements (metals) in the periodic table (classification table of chemical elements). They include scandium, neodymium and yttrium and are used for their properties in many fields, including digital technology, aerospace, and renewable energy.

Reclamation

The restoration of mined land to its original contour, use or condition.

Recovery rate

This rate is the percentage of the element of interest recovered by ore processing, relative to the quantity of this element in the initial rock.

Rehabilitation and restoration plan (RRP)

An action plan required under the Mining Act that outlines all the measures the promoter will take at the end of mining activities to restore the affected site so that it no longer poses a risk to the environment or to people's health and safety. It also includes an estimate of the anticipated costs of the work. This plan must be submitted at the mining lease stage and approved by the government.

Rehabilitation

An operation aimed at reducing the impact of mining activities on the land.

Reserve

The economically mineable part of measured and/or indicated resources. Reserves are expressed in terms of tonnage and grade after applying modifying factors (production cost, ore price, environmental issues, etc.) to resources. They're defined during pre-feasibility and feasibility studies.

Resource An estimated concentration of minerals (quantity and content), the extraction of which is of economic interest. Resources are classified according to geological confidence. Resources are estimated using exploration and sampling methods, based on the cutoff grade.

Rock stripping A mining exploration method in which vegetation and soil (overburden) are removed to expose rock for observation or sampling.

Resources and Reserves

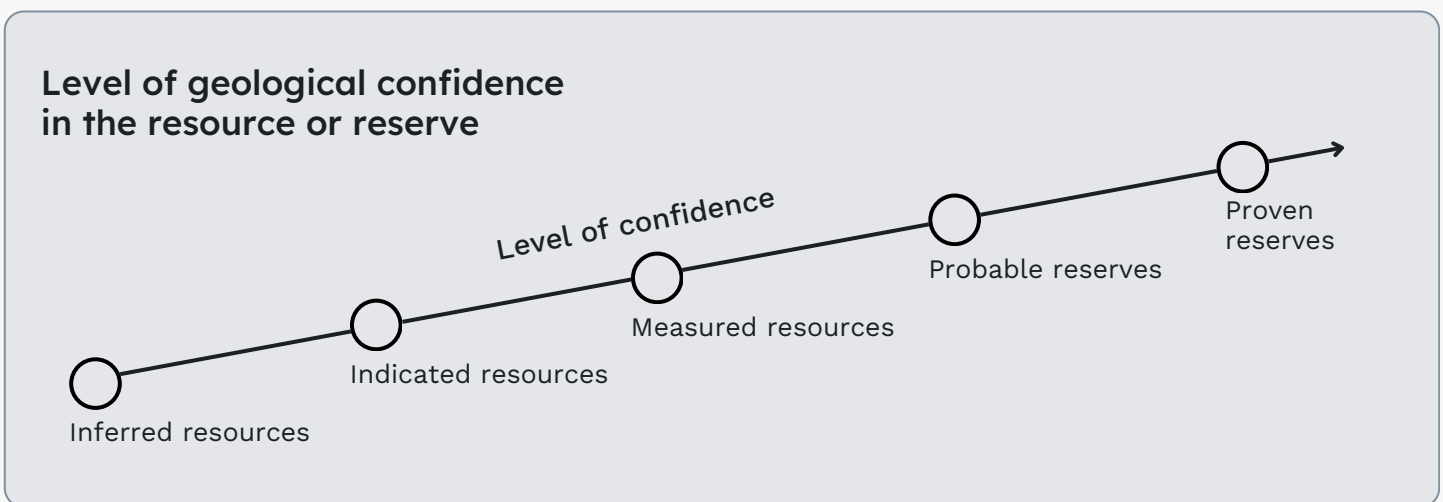
Inferred resource A resource for which characteristics are estimated on the basis of geological evidence that is sufficient to suggest, but not confirm, the characteristics of the deposit. Inferred resources are less reliable than indicated resources and cannot be converted to reserves.

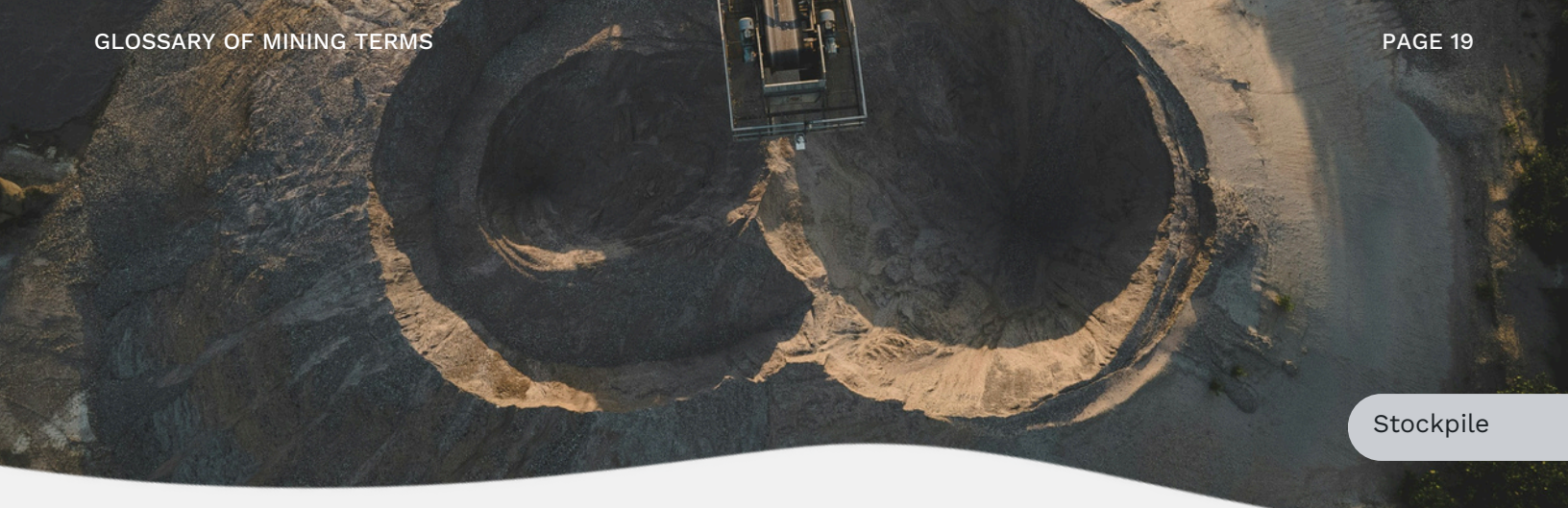
Indicated resource A resource for which characteristics are estimated on the basis of geological evidence that is sufficient to confirm the characteristics of the deposit. The level of confidence is sufficient to support mine planning and the evaluation of the deposit's economic viability. Indicated resources are less reliable than measured resources, but can be converted to probable reserves.

Measured resource A resource for which characteristics are estimated on the basis of geological evidence that is sufficient to confirm with precision the characteristics of the deposit. The level of confidence is sufficient to support detailed mine planning and final evaluation of the deposit's economic viability. Measured resources can be converted to proven or probable reserves.

Probable reserve The economically mineable part of an indicated, and, in some cases, measured resource (when confidence in the modifying factors is low). Probable reserves are less reliable than proven reserves.

Proven reserve The economically mineable part of a measured resource. At this stage, confidence in the modifying factors—and therefore in the estimate—is high.





Stockpile

S

Showing	Traces observed during exploration that suggest the presence of a deposit.
Stockpile	The area on a mine site where the company piles up rock.
Sulphide	A compound of sulphur and another element (metal or metalloid). Sulphides are usually responsible for the AMD in tailings.

T

Tailings	Liquid or solid waste left over after ore processing and usually stored near plants. May contain elements that are harmful to the environment or human health. This waste can sometimes be recycled, often as building materials.
Tailings storage facility	Area where tailings are stored, usually a structure with basins and dikes.
Till	Unsorted sediment deposited by a glacier and not displaced or mixed by melt water. These sediments can be sampled during mineral exploration.
Tonnage	The amount of ore extracted from a deposit. The lower the grade for a given amount of ore, the higher the tonnage.

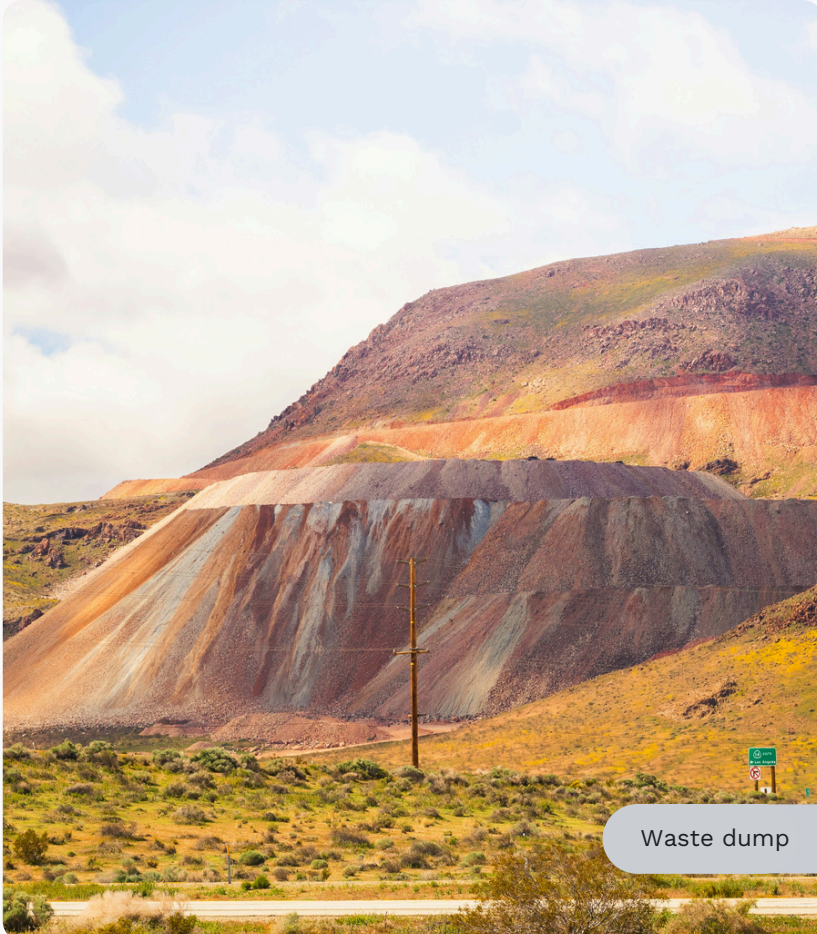
Trench Excavation using a manual or mechanical shovel to collect soil or rock samples.

Gallery A tunnel dug deep into the rock to access the deposit.

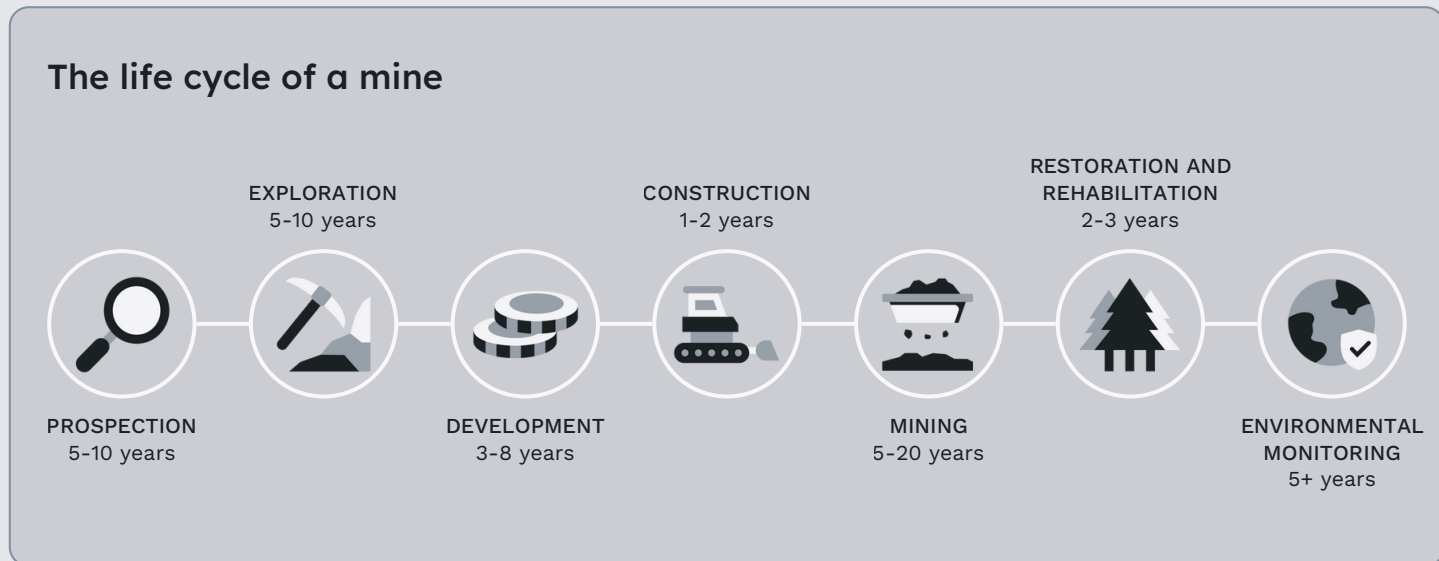
W

Waste dump A pile of rocks or mining waste.

Waste rock Rock consisting of rock and target minerals in concentrations too low for economic recovery. During mining, waste rock is removed to gain access to the ore.



Appendix 1 - Life cycle of a mine



Prospection

Phase that consists in finding mineralized showings, generally with small-scale work (mapping, geophysical surveys, etc.) on claims previously acquired on GESTIM.

Exploration

A more in-depth research phase aimed at identifying a deposit and producing a mineral resource estimate. At this stage, the promoter begins impact exploration work.

Development

This is the period during which the promoter seeks to obtain as much information as possible about the deposit (tonnage, grade, mining method, etc.), and during which resources are converted into mineral reserves. It is also during this phase that the promoter obtains all permits and authorizations, and carries out the environmental assessment.

Construction

Phase in which all mining infrastructure and facilities are built to enable ore mining and plant operation.

Appendix 1 - Life cycle of a mine (continued)

Mining

Period during which ore is extracted and processed at the plant. Processing produces a concentrate shipped elsewhere for 2nd transformation, and tailings. Mining lasts as long as the extraction of reserves remains profitable.

Restoration and rehabilitation

Mine closure phase, which covers all activities aimed at returning the site to a “satisfactory state” (according to the Mining Act). This generally involves dismantling infrastructure, revegetating the site and sometimes backfilling the pit.

Environmental monitoring

Post-closure phase to ensure that environmental impacts have been properly managed. This involves monitoring the effectiveness of restoration activities, the absence of any contamination and the stability of the remaining infrastructure.

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